



Universal Compute Platform v5.09.01 User Guide

System Configuration and Management

9039141-00 Rev. AA
January 2025



Copyright © 2025 Extreme Networks, Inc. All rights reserved.

Legal Notice

Extreme Networks, Inc. reserves the right to make changes in specifications and other information contained in this document and its website without prior notice. The reader should in all cases consult representatives of Extreme Networks to determine whether any such changes have been made.

The hardware, firmware, software or any specifications described or referred to in this document are subject to change without notice.

Trademarks

Extreme Networks® and the Extreme Networks logo are trademarks or registered trademarks of Extreme Networks, Inc. in the United States and/or other countries.

All other names (including any product names) mentioned in this document are the property of their respective owners and may be trademarks or registered trademarks of their respective companies/owners.

For additional information on Extreme Networks trademarks, see: <https://www.extremenetworks.com/about-extreme-networks/company/legal/trademarks>

Open Source Declarations

Some software files have been licensed under certain open source or third-party licenses.

End-user license agreements and open source declarations can be found at: <https://www.extremenetworks.com/support/policies/open-source-declaration/>



Table of Contents

Abstract.....	v
Preface.....	6
Text Conventions.....	6
Documentation and Training.....	7
Open Source Declarations.....	8
Training.....	8
Help and Support.....	8
Subscribe to Product Announcements.....	9
Send Feedback.....	9
Welcome to Universal Compute Platform.....	10
Navigating the User Interface.....	10
Dashboard.....	11
Dashboard Overview.....	11
Deployment Health.....	11
System Health Dashboard.....	12
Nodes Dashboard.....	12
Pods List.....	13
VMI List.....	13
Services List.....	13
Volumes List.....	14
Cluster Settings.....	16
Cluster Configuration.....	16
Select the Deployment Type.....	16
Configure Cluster Node Information.....	17
Configure Pod Network Information.....	18
Certificates.....	18
Node Replacement and Additions.....	20
Prepare to Replace a Node.....	20
Replace a Node.....	21
Add Node.....	22
Engines.....	24
Engine Installation Options.....	24
ExtremeCloud Edge - Managed Orchestration.....	24
ExtremeCloud Edge - Self-Orchestration.....	28
Image Management.....	32
Engine Upgrades.....	32
Upgrade an Application (Self-Orchestrated).....	33
Tools.....	34
Logs.....	34

Diagnostics.....	35
Utilities.....	35
TCP Dump Management.....	36
Administration.....	37
Manage User Accounts.....	37
Add a User Account.....	37
Modify a User Account.....	38
Delete a User Account.....	39
Account Settings.....	39
System Configuration.....	39
Configuration.....	40
System Logging.....	43
Maintenance.....	44
Network Setup.....	45
Network Time.....	50
Settings.....	50
Upgrade the Universal Compute Platform	51
System Information.....	56
Utilities.....	58
Index.....	59



Abstract

This Universal Compute Platform version 5.09.01 User Guide provides in-depth procedures for configuring, managing, and upgrading the Universal Compute Platform environment. The guide details advanced tasks such as user account management, network interface configuration, cluster node setup, and performing system-wide backups. The guide includes comprehensive instructions on engine application configuration, image management, and container orchestration using ExtremeCloud Edge, supporting both managed and self-orchestrated deployments. It also covers troubleshooting protocols, system logging mechanisms, and maintenance strategies with a focus on redundancy configurations, network failover, and high-availability setups. Detailed processes for initiating on-demand backups, scheduling regular backups, and upgrading critical system components are provided to ensure optimal platform performance and continuity, specifically addressing the needs of system administrators overseeing large-scale Universal Compute Platform deployments.



Preface

Read the following topics to learn about:

- The meanings of text formats used in this document.
- Where you can find additional information and help.
- How to reach us with questions and comments.

Text Conventions

Unless otherwise noted, information in this document applies to all supported environments for the products in question. Exceptions, like command keywords associated with a specific software version, are identified in the text.

When a feature, function, or operation pertains to a specific hardware product, the product name is used. When features, functions, and operations are the same across an entire product family, such as Extreme Networks switches or SLX routers, the product is referred to as *the switch* or *the router*.

Table 1: Notes and warnings






Icon	Notice type	Alerts you to...
	Tip	Helpful tips and notices for using the product
	Note	Useful information or instructions
	Important	Important features or instructions
	Caution	Risk of personal injury, system damage, or loss of data
	Warning	Risk of severe personal injury

Table 2: Text

Convention	Description
screen displays	This typeface indicates command syntax, or represents information as it is displayed on the screen.
The words <i>enter</i> and <i>type</i>	When you see the word <i>enter</i> in this guide, you must type something, and then press the Return or Enter key. Do not press the Return or Enter key when an instruction simply says <i>type</i> .
Key names	Key names are written in boldface, for example Ctrl or Esc . If you must press two or more keys simultaneously, the key names are linked with a plus sign (+). Example: Press Ctrl+Alt+Del
<i>Words in italicized type</i>	Italics emphasize a point or denote new terms at the place where they are defined in the text. Italics are also used when referring to publication titles.
NEW!	New information. In a PDF, this is searchable text.

Table 3: Command syntax

Convention	Description
bold text	Bold text indicates command names, keywords, and command options.
<i>italic text</i>	Italic text indicates variable content.
[]	Syntax components displayed within square brackets are optional. Default responses to system prompts are enclosed in square brackets.
{ x y z }	A choice of required parameters is enclosed in curly brackets separated by vertical bars. You must select one of the options.
x y	A vertical bar separates mutually exclusive elements.
< >	Nonprinting characters, such as passwords, are enclosed in angle brackets.
...	Repeat the previous element, for example, <i>member [member...]</i> .
\	In command examples, the backslash indicates a “soft” line break. When a backslash separates two lines of a command input, enter the entire command at the prompt without the backslash.

Documentation and Training

Find Extreme Networks product information at the following locations:

[Current Product Documentation](#)

[Release Notes](#)

[Hardware and Software Compatibility](#) for Extreme Networks products

[Extreme Optics Compatibility](#)

[Other Resources](#) such as articles, white papers, and case studies

Open Source Declarations

Some software files have been licensed under certain open source licenses. Information is available on the [Open Source Declaration](#) page.

Training

Extreme Networks offers product training courses, both online and in person, as well as specialized certifications. For details, visit the [Extreme Networks Training](#) page.

Help and Support

If you require assistance, contact Extreme Networks using one of the following methods:

Extreme Portal

Search the GTAC (Global Technical Assistance Center) knowledge base; manage support cases and service contracts; download software; and obtain product licensing, training, and certifications.

The Hub

A forum for Extreme Networks customers to connect with one another, answer questions, and share ideas and feedback. This community is monitored by Extreme Networks employees, but is not intended to replace specific guidance from GTAC.

Call GTAC

For immediate support: (800) 998 2408 (toll-free in U.S. and Canada) or 1 (408) 579 2800. For the support phone number in your country, visit www.extremenetworks.com/support/contact.

Before contacting Extreme Networks for technical support, have the following information ready:

- Your Extreme Networks service contract number, or serial numbers for all involved Extreme Networks products
- A description of the failure
- A description of any actions already taken to resolve the problem
- A description of your network environment (such as layout, cable type, other relevant environmental information)
- Network load at the time of trouble (if known)
- The device history (for example, if you have returned the device before, or if this is a recurring problem)
- Any related RMA (Return Material Authorization) numbers

Subscribe to Product Announcements

You can subscribe to email notifications for product and software release announcements, Field Notices, and Vulnerability Notices.

1. Go to [The Hub](#).
2. In the list of categories, expand the **Product Announcements** list.
3. Select a product for which you would like to receive notifications.
4. Select **Subscribe**.
5. To select additional products, return to the **Product Announcements** list and repeat steps 3 and 4.

You can modify your product selections or unsubscribe at any time.

Send Feedback

The User Enablement team at Extreme Networks has made every effort to ensure that this document is accurate, complete, and easy to use. We strive to improve our documentation to help you in your work, so we want to hear from you. We welcome all feedback, but we especially want to know about:

- Content errors, or confusing or conflicting information.
- Improvements that would help you find relevant information.
- Broken links or usability issues.

To send feedback, email us at documentation@extremenetworks.com.

Provide as much detail as possible including the publication title, topic heading, and page number (if applicable), along with your comments and suggestions for improvement.




Welcome to Universal Compute Platform

[Navigating the User Interface](#) on page 10

The Universal Compute Platform serves as a service platform for an on-premises application offering. The Universal Compute Platform provides a performance validated hosting platform, supporting advanced orchestration of a catalog of applications. The Universal Compute Platform provides a container-based orchestration framework, in an Extreme Networks qualified and validated high-performance hardware configuration. The framework natively supports clustering, a distributed file system, and orchestration through Kubernetes, providing a highly resilient application operational base.

Navigating the User Interface

To open the navigation menu for the Universal Compute Platform user interface, select the navigation icon () from the top left of the interface header. From the navigation menu, you can select one of the menu options to go to the desired page.



Dashboard

[Dashboard Overview](#) on page 11

The topics in this section describe the dashboards that are available when you select the **Dashboard** menu option.

Dashboard Overview

Universal Compute Platform offers dashboards and lists that help you monitor the cluster configuration and performance.

Universal Compute Platform offers the following dashboards and reports:

- Deployment Health
- System Health
- Dashboard Nodes
- Pods List
- Services List
- Volumes List

Deployment Health

The **Deployment Health** Dashboard provides information about the overall health of the node cluster. The top pane highlights each piece of the cluster network:

- Nodes. The number of appliances in your network. You have the option of configuring individual stand-alone nodes or a cluster of three or more nodes. Stand-alone configuration is supported for all engine types except ExtremeCloud IQ.



Note

When using an ExtremeCloud™ IQ engine, you must configure a cluster of three or more nodes in multiples of three (for example, three, six, or nine nodes). ExtremeCloud IQ is not supported in stand-alone mode, requires a cluster, and does not support engine types other than ExtremeCloud IQ.

- Pods. A group of managed containers that share networking and storage resources from the same node (appliance). Each pod is assigned an IP address. All the containers in the pod share the same storage, IP address, and network namespace.
- Services. Network Services running on the node cluster.
- Volumes. Storage that allows data to be accessible to containers within a pod.

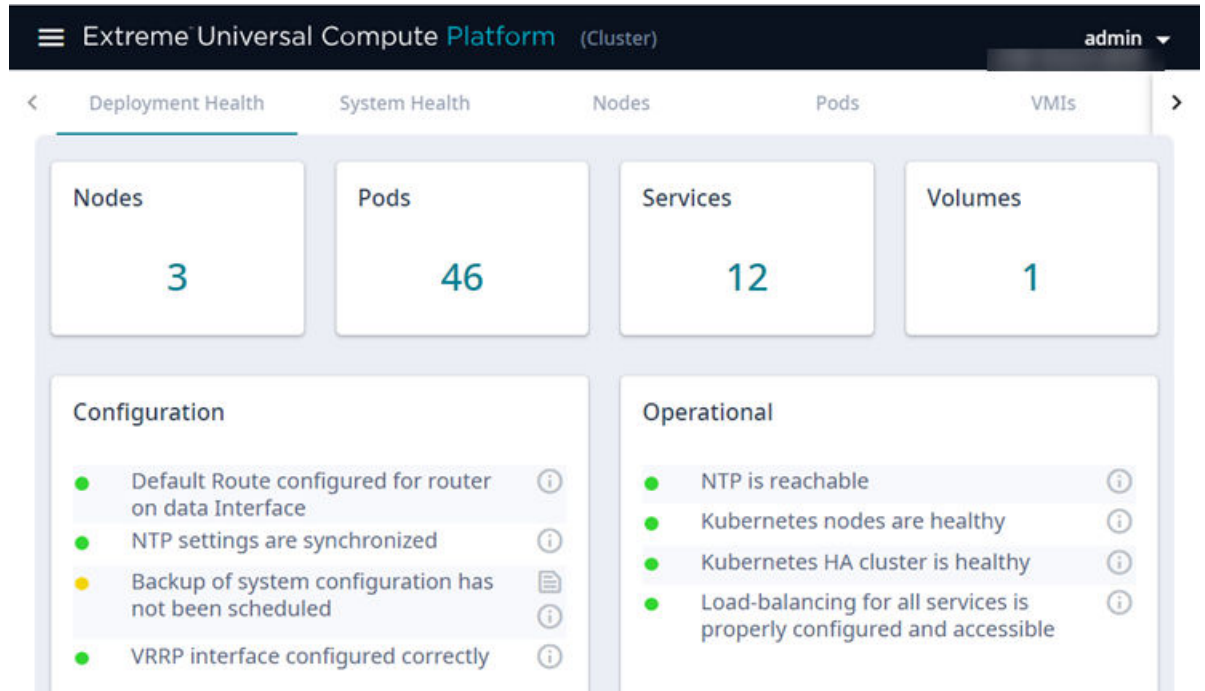


Figure 1: Deployment Health Dashboard

Deployment Health also provides best practice information for your Universal Compute Platform configuration. System Health checks are run against your configuration and operational setup to inform you of best practices.

- ● Green indicates that a best practice is being followed.
- ● Yellow indicates that your configuration is not optimal.
- ● Red indicates an error in your configuration.

Fix all error conditions. You have the option to ignore warnings. They are provided to inform and encourage best practice configuration.

- Select i for a description of each statement or warning.
- Select ☰ to list objects causing an issue, and to jump to that area of Universal Compute Platform to improve your configuration.

System Health Dashboard

The **System Health** dashboard provides the following information:

- System Uptime — The number of days and hours the system has been operational.
- CPU Utilization — CPU Utilization metrics over time.
- Memory Utilization — Memory Utilization metrics over time.

Nodes Dashboard

The **Nodes Dashboard** provides graphs for CPU utilization and memory utilization for each node in the cluster.

Pods List

The **Pods List** displays a list of pods in your cluster. A pod is a group of managed containers that share networking and storage resources from the same node. The following information is provided for each pod:

- Pod Name
- Ready status
- Status — Possible values are Running or Down.
- Restarts
- Age — Measured in minutes, hours, and days.
- IP address
- Node

Use the Search field to find a specific list item.

You can select the number of items to display on a page. Valid values are:

- 10
- 20
- 50
- 100

To jump to the next or previous page, or jump to the first or last page, select the arrows at the bottom of the page.

VMI List

VMI stands for Virtual Machine Instance. The following information is provided for each VMI:

- Name
- Phase
- Node Name
- QoS Class
- Namespace
- Created

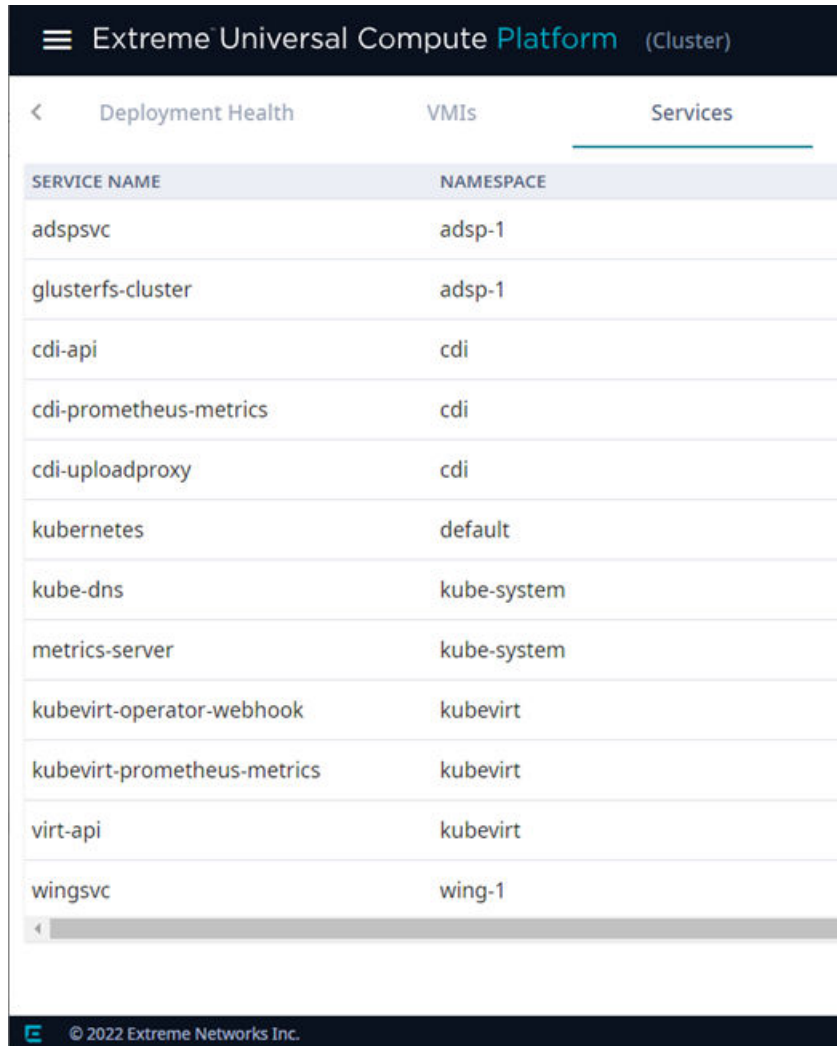
Expand each VMI to display the following information:

- CPU: Cores
- Volumes
- Interfaces: IP Address and MAC

Services List

The **Services List** displays a list of all services running in the cluster. The Service Name and Namespace are provided for each service.

Use the Search field to find a specific list item.



SERVICE NAME	NAMESPACE
adpsvc	adsp-1
glusterfs-cluster	adsp-1
cdi-api	cdi
cdi-prometheus-metrics	cdi
cdi-uploadproxy	cdi
kubernetes	default
kube-dns	kube-system
metrics-server	kube-system
kubevirt-operator-webhook	kubevirt
kubevirt-prometheus-metrics	kubevirt
virt-api	kubevirt
wingsvc	wing-1

Figure 2: List of services running on the node cluster

You can select the number of items to display on a page. Valid values are:

- 10
- 20
- 50
- 100

To jump to the next or previous page, or jump to the first or last page, select the arrows at the bottom of the page.

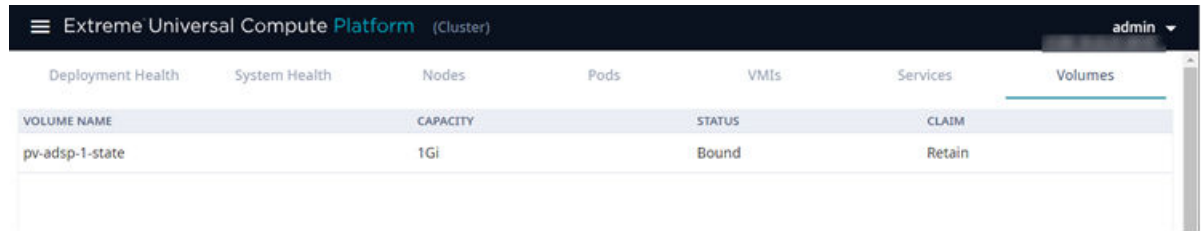
Volumes List

The **Volumes List** displays a list of all volumes in the cluster. A volume is storage that allows data to be accessible to containers within a pod. The following information is provided for each volume:

- Volume Name
- Capacity

- Status
- Claim. Associated with the volume type and how the data is handled in the volume. If the data will be retained, the Claim value is **Retain**.

Use the Search field to find a specific list item.



VOLUME NAME	CAPACITY	STATUS	CLAIM
pv-adsp-1-state	1Gi	Bound	Retain

Figure 3: List of Volumes associated with a node

You can select the number of items to display on a page. Valid values are:

- 10
- 20
- 50
- 100

To jump to the next or previous page, or jump to the first or last page, select the arrows at the bottom of the page.



Cluster Settings

[Cluster Configuration](#) on page 16

[Node Replacement and Additions](#) on page 20

The topics in this section describe the options that are available under the **Cluster Settings** menu.

Cluster Configuration

Go to **Cluster Settings > Cluster Configuration** to view the cluster deployment settings and to configure the cluster.

To configure the cluster, complete each of these steps in the cluster configuration process:

1. [Select the Deployment Type](#) on page 16
2. [Configure Cluster Node Information](#) on page 17
3. [Configure Pod Network Information](#) on page 18
4. Finish

Select the Deployment Type

From the **Select Deployment Type** field, select the desired deployment type, and then select **Next**.

The following table provides a description of each deployment type option.

Table 4: Deployment Type Options

Deployment Type	Description
ExtremeCloud Edge - Managed Orchestration	<p>ExtremeCloud Edge - Managed Orchestration is a multiple node clustered deployment that offers ExtremeCloud IQ as a distributed cloud application. This deployment provides application delivery and Software as a Service managed by Extreme CloudOps. This deployment is supported on 3160C or 4120C-1 and offers the following applications:</p> <ul style="list-style-type: none"> • ExtremeCloud IQ • Essentials • SD-WAN Orchestrator • Intuitive Insights • MSP Workspace • Universal ZTNA <p>For more information, see ExtremeCloud Edge - Managed Orchestration Deployment Guide for Universal Compute Platform. For a training video, see Managed Orchestration Deployment Training Videos.</p>
ExtremeCloud Edge - Self-Orchestration	<p>ExtremeCloud Edge - Self-Orchestration deployments offer an integrated Orchestrator for delivery of defined on-premise Universal Container applications. This deployment is offered on 1130C, 2130C, 3150C, or 4120C in standalone deployments of a single node only. The list of container applications includes:</p> <ul style="list-style-type: none"> • ExtremeWireless WiNG™ Controller (4120C only) • Extreme Tunnel Concentrator • ExtremeCloud IQ Controller (not supported on 4120C) • ExtremeCloud IQ - Site Engine (2130C only) • ExtremeControl (2130C only) • ExtremeAnalytics (2130C only) <p>Refer to ExtremeCloud Edge - Self-Orchestration Deployment Guide for Universal Compute Platform for details on which applications are available for each hardware appliance along with scaling considerations.</p>

What to do Next

[Configure Cluster Node Information](#) on page 17.

Configure Cluster Node Information

Universal Compute Platform supports a stand-alone mode and a full-cluster mode. Stand-alone mode requires only one defined node, but a cluster can be deployed using multiples of three (for example, three, six, or nine nodes) depending on your resource requirements.

Configure only one node for stand-alone mode or configure a full cluster of nodes (using multiples of three).

1. Provide the ICC IP Address for each node in the cluster.
2. Select **Next**.

**Note**

When using an ExtremeCloud™ IQ engine, you must configure a cluster of three or more nodes in multiples of three (for example, three, six, or nine nodes). ExtremeCloud IQ is not supported in stand-alone mode, requires a cluster, and does not support engine types other than ExtremeCloud IQ.

What to do Next

[Configure Pod Network Information](#) on page 18

Configure Pod Network Information

Pods are groups of containers that share networking and storage resources from the same node.

1. Provide the following Pod Network configuration settings:
 - Pod Network IP Address
 - Pod Network CIDR
 - Service Network IP Address
 - Service Network CIDR
2. Select **Create Cluster**.

The cluster is created. If a cluster existed previously, the cluster connections are reset. Then, you must reinstall the engines for each node in the cluster.

3. After the cluster creation process finishes, select **Done**.

Certificates

To ensure a secure website that takes advantage of encryption, Universal Compute Platform uses browser certificates for website security and RADIUS server certificates for certificate-based authentication to the network. The browser certificate ensures security between the wireless clients and a VLAN, and the RADIUS server certificates ensure security between the RADIUS server and Network Access Control.

Both types of certificates offer the option to generate a new certificate or use a certificate and key file that you have saved. You can also reset the network interface to the default certificate and key, which yields a Self-Signed certificate.

Universal Compute Platform offers a factory installed self-signed certificate, which is used by the user interface HTTP Server to terminate the HTTPS browser requests served on port 5825. The certificate common name is *Network Services Engine*.

Generate Certificates

Browser certificates are used for website security. Generate a certificate or use a saved certificate and key from one or more files.

1. Select **Certificates**.

The **Certificates** dialog displays.

2. Select the Certificate option:

- **Replace or Install Topology's certificate**

Select this option and select **Generate CSR**. Complete the online form, then generate and download the certificate that can be presented to a public certificate authority.

- **Replace or Install Topology's certificate and key from a single file**

Select this option and navigate to the saved certificate file. Provide the password key provided with that file.

- **Replace or Install Topology's certificate file and key from separate files**

Select this option and navigate to the saved certificate file and separate key file.

- **Reset to Topology's default certificate and key**

Select this option to clear previous certificates and reset the Universal Compute Platform to the default configuration of the Self-Signed certificate.



Note

When certificates are applied or reset on the Admin topology, a server restart is triggered, and the browser loses connectivity with the server for a few seconds. When certificates are applied or reset on System topologies where **Management Traffic** is enabled, the server is also restarted.

Generate CSR

From the **Certificates** window, you can issue a Certificate Signing Request (CSR) to generate a new certificate.

1. From the **Certificates** window, select **Generate CSR**.
2. Complete the **Generate Certificate Signing Request** form. For help with the fields, see the table that follows this procedure.
3. Select **Save**.

Generate and download the certificate that can be presented to a public certificate authority.

Table 5: Generate Certificate Signing Request Fields

Field	Description
Country Name	Enter the two-letter ISO abbreviation for the country.
State or Province	Enter the name of the state or province.
Locality Name	Enter the locality name (for example, the city or town).

Table 5: Generate Certificate Signing Request Fields (continued)

Field	Description
Organization Name	Enter the name of the organization.
Organizational Unit	Enter the name of the unit within the organization.
Common Name	Enter the certificate common name (e.g., FQDN or IP address).
Email Address	Enter an email address for notification purposes.
Key Size	Enter the key size in bits. Supported sizes are 1024 or 2048.

Node Replacement and Additions

Prepare to Replace a Node

- Gather the IP address settings of the failed node.
Unless stated otherwise, you will set the new node with the same IP address values as the unit being replaced:
 - ICC Interface IP Address—For the ICC interface, you must assign a new IP address to the replacement node.
 - Data Port Interface IP Address
 - DNS Server Address
 - NTP Server Address
- Configure the VRRP priority for the replacement node.



Note

To ensure that the replacement node successfully joins the cluster, set the VRRP node priority of the replacement node to a value that is lower than the value of the existing nodes. This ensures that the VRRP address is pointing at a working node in the cluster during the joining process. After the replacement node has joined the cluster, you can set the VRRP node priority to first priority if desired, but this is not required.

- Use the Basic Configuration Wizard to configure the replacement unit.
This is required if you are replacing the unit hardware. Node Replacement initially resets the node connections. It may not require new hardware.

For information about the Basic Configuration Wizard, see the appropriate Deployment Guide.
- Complete the [Upgrade Universal Compute Platform Task Flow](#) on page 52 for the new node to upgrade the node to the current software version.

What to do Next

After you have gathered the necessary information and verified the software version of all nodes in the cluster, go to the [Replace a Node](#) on page 21 procedure.

Replace a Node

Replacing a node in a cluster is performed when a node has failed and must be replaced. The replacement node gets delivered in a reset state. After initializing the node for its network presence, the new node is added to the cluster and assumes the service load of the removed node.

**Note**

Before you replace a node, review the information in [Prepare to Replace a Node](#) on page 20.

**Note**

This option is not available for standalone deployments.

From the primary node in the cluster (Node 1), take the following steps:

1. Go to **Cluster Services > Node Replacement**.

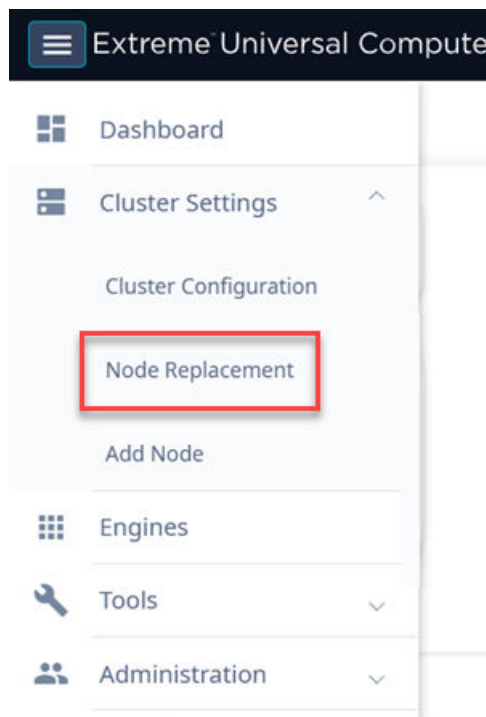


Figure 4: Node Replacement

2. Select the failed node and select **Next**.

Existing credentials are used to establish connection to the failed node.

Configuration and services information is transferred from the primary node to the failed node in an effort to re-establish a connection.

If it is necessary to replace the node hardware, refer to the [Installation Guide](#) for your specific Universal Compute Platform Appliance hardware for detailed information.

Add Node



Note

Before adding a new node, you must configure the new controller and ensure that it is running the current software version. Refer to [Prepare to Replace a Node](#) on page 20.



Note

This option is not available in standalone deployments.

For detailed instructions on appliance installation and cluster planning and configuration, see the appropriate guide:

- [Universal Compute Platform Appliance Installation Guide](#)—See the install guide for your appliance model
- [ExtremeCloud Edge - Managed Orchestration Deployment Guide for Universal Compute Platform](#).

A node is one appliance. Universal Compute Platform clusters typically support up to three or more nodes, with the ability to scale up when the cluster reaches capacity.

To add a node to a cluster, take the following steps:

1. Go to **Cluster Settings > Add Node**.

The screenshot shows the 'Add Node' dialog in the Extreme Universal Compute Platform interface. The dialog has a dark header with the text 'Extreme Universal Compute Platform (Cluster)'. Below the header, there is a progress bar with two steps: '1 Add Node' and 'Finish'. The 'Add Node' step is active, showing a text input field for 'Node IP Address' containing the value '10.48.4.51'. Below the input field is a teal 'Add Node' button. The 'Finish' step is indicated by a pencil icon.

Figure 5: Add Node dialog

2. Provide the appliance IP address for the node and select **Add Node**.
The **Node Addition** confirmation dialog displays.

This will add the requested node to the cluster. Do you want to continue?

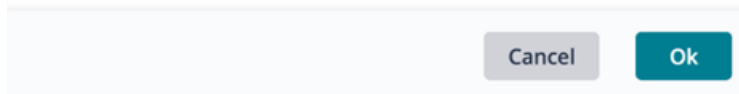
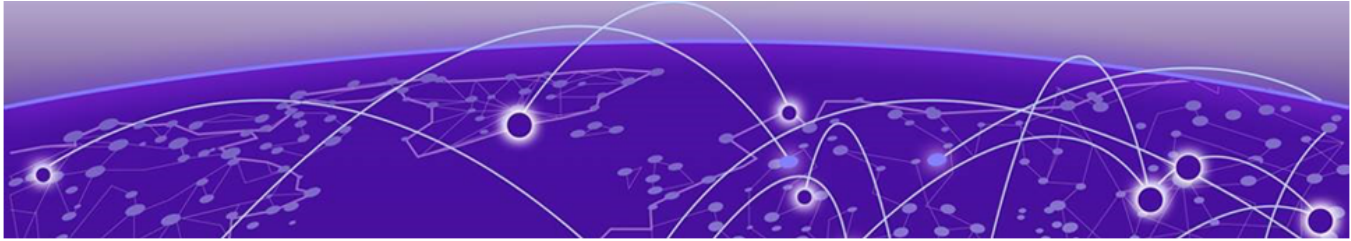


Figure 6: Add Node Confirmation Dialog

3. Select **OK** to begin the Add Node process.



Engines

[Engine Installation Options](#) on page 24

[Image Management](#) on page 32

[Engine Upgrades](#) on page 32

The topics in this section describe the options that appear under the **Engines** menu.

Engine Installation Options

From the **Engines** menu, you can install an engine and upgrade an engine application Docker image. The engines that are available to install depend on the deployment type that you selected during the cluster configuration.

To view engine installation information for your deployment, select the deployment type that applies to you:

- [ExtremeCloud Edge - Managed Orchestration](#)
- [ExtremeCloud Edge - Self-Orchestration](#)

ExtremeCloud Edge - Managed Orchestration

When the deployment type is ExtremeCloud Edge - Managed Orchestration, the only engine that you can install is the ExtremeCloud IQ engine. Complete the following tasks to install the engine.

Table 6: Installation Task Flow for ExtremeCloud Edge - Managed Orchestration

	Procedure	Description
1	Run Readiness Assessment on page 25	Optional. Test your system's readiness before you install the engine. Fix any errors in your settings before you install the engine.
2	Install ExtremeCloud IQ Engine on page 26	Install the ExtremeCloud IQ engine.
3	Network Service Configuration on page 26	Configure the mapping of each core service set to the corresponding Virtual Router Redundancy Protocol (VRRP)

Run Readiness Assessment

The Readiness Assessment helps you resolve errors in your network configuration before the ExtremeCloud IQ engine is installed. Run the Readiness assessment prior to onboarding and registering the cluster in Public ExtremeCloud IQ. The cluster registration process automatically notifies CloudOPS and provides basic information on the installation location and network access that is being deployed.

The Readiness Assessment is performed against a specific host at ExtremeNetworks. An assessment service runs that exercises the validation on the access setup through the firewall for the IP Ports that the application(s) require. The assessment services are installed at `ucp0-console.extremecloudiq.com`.

The assessment does the following:

- Pulls service groups and ports for inbound and outbound connections.
- Lets you enter the IP addresses that you plan to deploy.
- Tests your configuration and reports the results using a PASS and FAIL convention.



Note

Make sure that your firewall is configured to allow external and inbound access in relation to the firewall rules and service sets that appear in the [ExtremeCloud Edge - Managed Orchestration Deployment Guide for Universal Compute Platform](#) to ensure that the test succeeds.

1. Go to **Engines > Installation**.
2. From the ExtremeCloud IQ pane, select **Readiness Assessment**.
3. When prompted, enter the **VRRP IP Address** and **External IP Address** that you plan to deploy for each service group and port. See the subsequent table for more information on these fields.
4. Select **Test**.
5. For any tests that received a FAIL result, or for any other error message, make the required configuration corrections and rerun the test.
6. If you receive a PASS for all checks, proceed to engine installation.

The following table provides information on the fields that display around the Readiness Assessment.

Table 7: Readiness Assessment Field Descriptions

Field	Description
Outbound	
Port	The port over which the outbound connection is tested.
Protocol	The protocol that is in use for outbound connections on this port.
Result	The result of the test. Possible results include: <ul style="list-style-type: none"> • PASS • FAIL

Table 7: Readiness Assessment Field Descriptions (continued)

Field	Description
Error	For tests that fail, the value in this field provides information about the problem so that you can fix it.
Inbound	
Service Group Name	The name of the service group (or service set) that accepts incoming connections to this external IP address.
Port	The port over which the inbound connection is tested.
Port Name	The name of the port.
Protocol	The protocol that is in use for inbound connections to this port and external IP address.
VRRP IP Address	The internal VRRP IP address that provides load balancing and high availability for inbound connections to this service group.
External IP Address	The public IP address that accepts incoming connections for this service group. The connection is port-forwarded to the internal VRRP IP address for this service group.

Install ExtremeCloud IQ Engine

Install ExtremeCloud IQ engine once from a single node.

To install an engine instance:

1. Go to **Engines**.
2. From the ExtremeCloud IQ pane, select **Install**.

After installation is complete, a confirmation notice is displayed and the XIQ instance displays.

Network Service Configuration

The **Network Service Configuration** tab displays the mapping of each core service set to the corresponding Virtual Router Redundancy Protocol (VRRP).



Note

Network registration is configured during the initial Universal Compute Platform setup process. For complete instructions on registering a network account, see the [ExtremeCloud Edge - Managed Orchestration Deployment Guide for Universal Compute Platform](#).

ExtremeCloud IQ

Instance: xiq

Network Service Configuration

Account Registration

Assign a VRRP address to the service set

Services	Assigned VRRP
auth, cmtcp, cmudp, https, sshproxy	10.48.40.24 ▼
cstcp1, csudp1	10.48.40.25 ▼
cstcp2, csudp2	10.48.40.26 ▼

SAVE

Figure 7: ExtremeCloud IQ Network Service Configuration Details

Account Registration



Note

The **Account Registration** tab is used with legacy deployments of Distributed Cloud only. For onboarding information that is related to ExtremeCloud Edge – Managed Orchestration, see the *ExtremeCloud Edge - Managed Orchestration Deployment Guide for Universal Compute Platform*.

Create an ExtremeCloud IQ user account through Universal Compute Platform. Go to **Engines > Account Registration** and fill out the form in [Figure 8](#). Then, select **Register**.

You will receive an email confirming your registration.

ExtremeCloud IQ

Instance: xiq

Network Service Configuration

Account Registration

Registration

Instructions to complete the registration will be sent to the account e-mail

Host Name

Token

First Name

Last Name

Email Address

Organization

Job Title

Figure 8: ExtremeCloud IQ Account Registration Form

ExtremeCloud Edge - Self-Orchestration

When the Deployment Type is ExtremeCloud Edge - Self-Orchestration, you have a variety of engine options to choose from, including the following:

- ExtremeWireless WING™ Controller
- Extreme Tunnel Concentrator
- ExtremeCloud™ IQ Controller

Install an Engine

To install an engine for an ExtremeCloud Edge - Self-Orchestration deployment, complete the following tasks in order.

Table 8: Initial Engine Application Installation

Step	Procedure	Description
1	Download Docker Application Image on page 29	Download the Extreme docker application Image file from the support portal.
2	Upload Docker Application Image on page 29	Upload the docker application image to Universal Compute Platform.
3	Install Engine Application on page 30	Install the application engine on Universal Compute Platform.
4	Deploy Application Image on page 30	Deploy the Extreme application image file

What to do Next

After you install the application engine, configure settings. See [Engine Application Settings](#) on page 30.

Download Docker Application Image

Download the application Docker image file from the Extreme Networks [support portal](#).

To obtain the Docker image file, go to the Extreme Networks [support portal](#) to download the application Docker image.

For example, from the ExtremeWireless WiNG™ product page, download `cx-9000.tar`

Upload Docker Application Image

Upload the engine application Docker image to Universal Compute Platform.

1. Go to **Engines > Image Management**.
2. Complete one of the following options:
 - Select the **Choose Image File** pane, then navigate to the image file and select it.
 - Drag and drop the image file onto the **Image File** pane.

The uploaded image file displays below the **Choose Image File** pane along with other uploaded image files.

**Note**

You can also delete an uploaded image file. From the **Image Management** page, select the check box next to the image file, and select (Delete). To refresh the image file list, select (Refresh).

Install Engine Application

To install the engine application, take the following steps:

1. Go to **Engines > Installation**
2. From the pane for the application that you want to install, select **Install**.



Note

- If you have not yet uploaded the application docker image file, you will be prompted to do so.
- The installation time depends on a variety of factors. Be prepared for it to take some time.

A confirmation notice displays after the installation completes. Only one instance is required for the cluster.

Deploy Application Image

After you have uploaded the application image file and installed the application Docker image, deploy the application to a node.

1. Go to **Engines > Installation**.
2. Select the engine instance link. For example, "cx9000 #1".
3. Select **Deploy**.
4. Save your changes.

What to do Next

To configure engine settings, go to [Engine Application Settings](#) on page 30.

Engine Application Settings

For each engine instance, select the instance link to configure the application settings and view the following information:

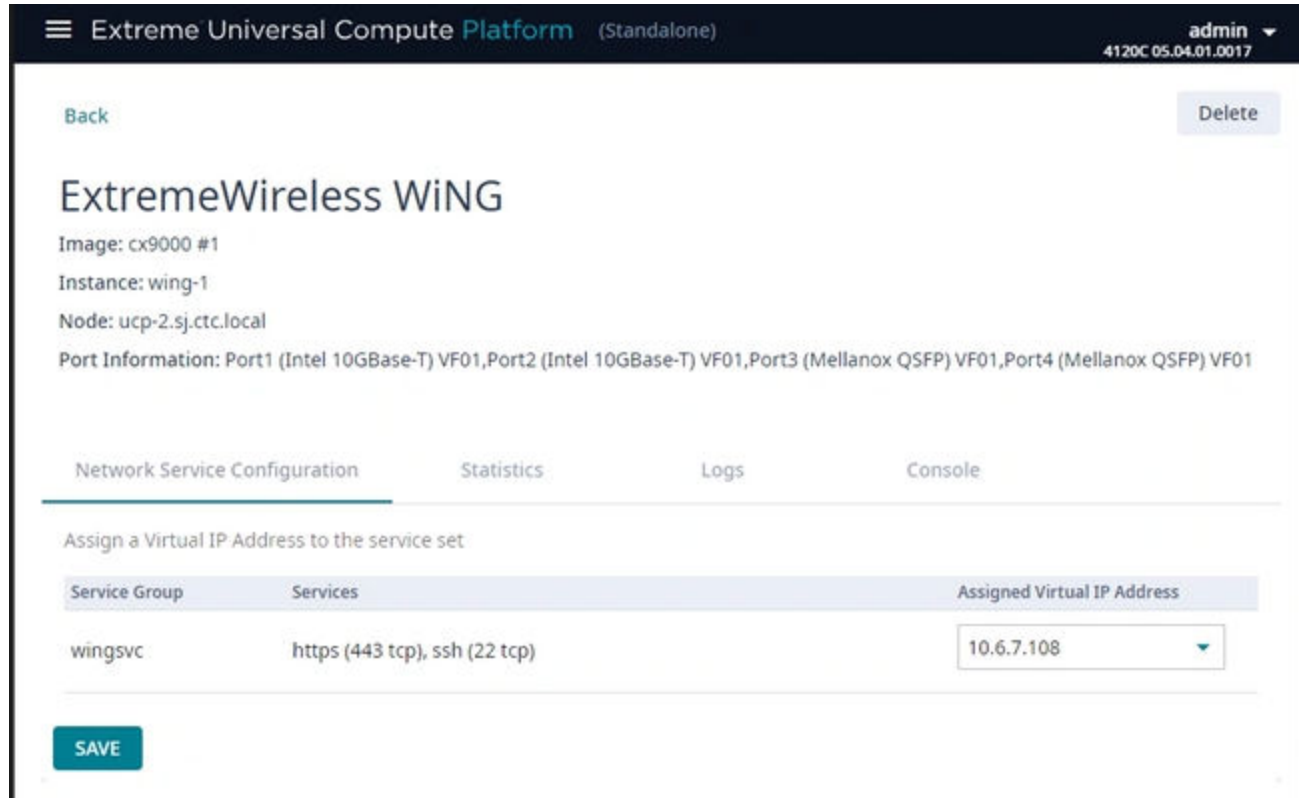


Figure 9: Example Engine Application Settings

Image

Controller image name.

Instance

Name of the node instance (provided by Universal Compute Platform)

Instance Web Interface

The assigned IP address of the Engine instance. This option provides the ability to log into the specific Engine instance.

1. Configure the interface from the **Interfaces** pane. Go to **Administration > Network Setup**.
2. Select the configured IP address from the **Assigned Virtual IP Address** field. Note, only IP addresses configured through **Network Setup > Interfaces** will appear in the drop-down list.
3. Log in through the console.

Network Service Configuration

The mapping of each core service set to the corresponding Virtual Router Redundancy Protocol (VRRP). Select the VIP that you configuration.

Select the VIP that you configured for the selected port, where the Engine instance will reside. For more information on Interface Configuration, see [Add Interface](#) on page 46.

VRRP enables a virtual router to act as the default network gateway, improving host network reliability and performance.

Statistics

Compute statistics and node drive volume statistics are available for CPU usage and memory usage.

Logs

A log file is available for each node instance. Log entries include the following:



- Timestamp of log entry
- System component
- Message log level
- Message content

Console

A live console is available from each engine instance for diagnostics and troubleshooting. To open a live console and connect to a container or virtual machine instance (VMI), from the engine **Console** tab, select **Attach**.

Image Management

From the **Engines > Image Management** page, you can manage uploaded engine images for Universal Compute Platform.

- To upload a new image to Universal Compute Platform, complete either of the following steps:
 - Select the **Choose Image File** pane, browse to the image file and select it.
 - Drag the image file from a local drive and drop it onto the Universal Compute Platform desktop.
- To delete an existing image file from Universal Compute Platform, select the existing image and select  (Delete).
- To refresh the list of uploaded images, select  (Refresh).

Engine Upgrades

Universal Compute Platform has multiple methods for upgrading container applications. Select the upgrade method that fits your application type:

- **Self-Orchestrated applications**—For self-orchestrated applications that support external upgrades, see [Upgrade an Application \(Self-Orchestrated\)](#) on page 33.
- **Applications with built-in upgrade functionality**—For applications with built-in upgrade functionality, you can upgrade from the application interface. Refer to the application documentation for details.
- **Applications that do not support either upgrade method**—For these applications, uninstall the current image and then install the new image. Note that this method requires you to reconfigure your settings.

Upgrade an Application (Self-Orchestrated)

Use this procedure to upgrade a self-orchestrated engine application from the Universal Compute Platform user interface. This procedure upgrades the application while retaining existing settings.




Note

You must have the new application image file. For Extreme Networks applications, download the install image from the [Extreme Networks Support Portal](#) and save it to a local drive.

1. Log in to the Universal Compute Platform interface.
2. Upload the new application image file:
 - a. Go to **Engines > Image Management**.
A list of uploaded images displays under the **Choose Image File** pane.
 - b. To upload the new image, complete either of the following steps:
 - Select **Choose Image File**, then browse to the image file and select it. Or,
 - Drag the image from your local drive and drop it on the **Choose Image File** pane.



Note

To delete an image file, select the check box next to the image and select .

3. Upgrade the application:
 - a. Go to **Engines > Installation**.
 - b. Select the application instance that you want to upgrade.
 - c. Select **Upgrade application**.
 - d. Select **OK**.

Universal Compute Platform creates a new container with the upgraded application image and existing settings. The old container is terminated.



Tools

[Logs](#) on page 34

[Diagnostics](#) on page 35

The topics in this section describe the settings that appear under the **Tools** menu.

Logs

Universal Compute Platform offers Event and Audit logs to help you understand and troubleshoot the network.

Table 9: Log Types

Log Type	Details
Events	To view a list of network events, go to Tools > Logs > Events . The following information displays for each event: <ul style="list-style-type: none">• Time the event occurred• Type of event: Info, Minor, Major, or Critical• Component of Universal Compute Platform that was affected. For example, Rest API or Startup Manager• Description of the event
Audit Log	To view the Audit Log, go to Tools > Logs > Audit Logs . The following information displays in the Audit Log: <ul style="list-style-type: none">• Time logged item occurred• Username of system administrator• Context• Description of logged item

To filter the list for either log type, provide a start and end date to display only log items that occur within the date window. Select **Reset** to clear the filter.

Use the Search field to find a specific list item.

You can select the number of items to display on a page. Valid values are:

- 10
- 20
- 50
- 100

To jump to the next or previous page, or jump to the first or last page, select the arrows at the bottom of the page.

Diagnostics

Go to **Tools > Diagnostics** for tools that help you troubleshoot your network. You can use the following tools:

- **Utilities**—Use **Ping** or **Trace Route** to troubleshoot specific IPs and FQDNs
- **TCP Dump Management**—Run file captures on specific interfaces.

Utilities

Use wireless controller utilities to test a connection to the target IP address (or Fully-Qualified Domain Name) and record the route through the Internet between your computer and the target address. You can also use controller utilities to capture exception traffic, which can be useful for network administrators when debugging network problems.

Table 10: Network Utilities

Field	Description
Target IP Address or Fully-Qualified Domain Name (FQDN)	IP address or FQDN for the test target.
Use specific source interface	Indicates if a specific interface will be selected for the test. Select the interface from the Select Interface field. When this option is cleared, Universal Compute Platform runs the test based on the interface selected in the routing table.
Select Interface	Used with Specific Source Interface option. See list of possible interfaces on the Interface tab.
Ping	Initiate the Ping network utility to determine reachability of the IP address or FQDN that you specify.
Trace Route	Initiate the Trace route command, which traces the path of a packet from Universal Compute Platform to the IP address or FQDN that you specify. It lists the routers it passes until it reaches its destination, or fails to. It also indicates the length of each hop.

TCP Dump Management

The following table describes the fields in the TCP Dump Management section:

Table 11: TCP Dump Management

Field	Description
Interface	Target interface. See the list of possible interfaces on the Interface tab.
Filename	Specify the name of the dump file.
Save File To	Specify where to save the dump file.
Capture File Size (MB)	Specify the maximum limit of the dump file in MB. This feature enables you to control the size of the resulting dump file so the file does not become too large.
Capture Files	List of previously created dump files. Select a file to take action.



Administration

[Manage User Accounts](#) on page 37

[System Configuration](#) on page 39

The topics in this section describe the settings that appear under the **Administration** menu.

Manage User Accounts

This topic outlines how to manage user accounts on the Universal Compute Platform controller. For information about registering for an ExtremeCloud IQ user account, see [Account Registration](#) on page 27.

Universal Compute Platform offers the following levels of user access on the controller:

- Full Admin
- Read Only

Full Administrators can create and manage controller user accounts. This guide outlines the following procedures:

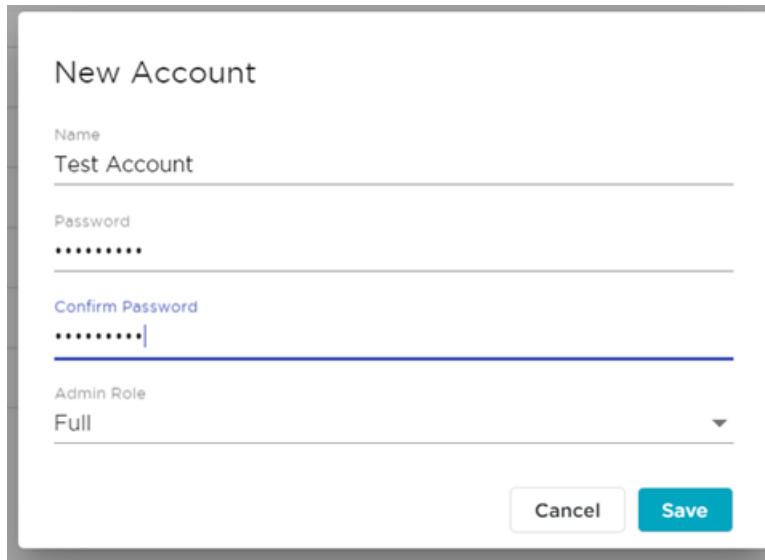
- Add new accounts
- Modify account settings
- Delete user accounts

Add a User Account

To add a user account:

1. Go to **Administration > Accounts**.
2. Select **New Account**.

3. Configure the [account settings](#).



New Account

Name
Test Account

Password

Confirm Password
*****|


Admin Role
Full

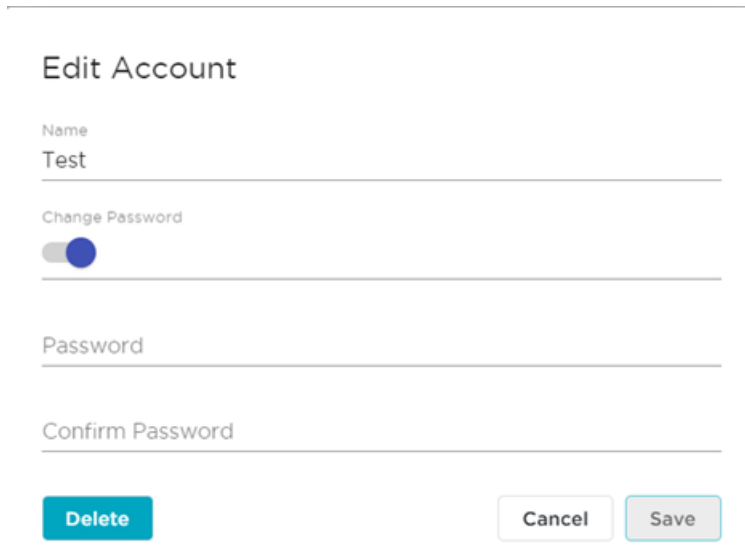
Cancel Save

Figure 10: Create New Account

Modify a User Account

To modify a user account:

1. Go to **Administration > Accounts**.
2. Select  next to the account that you want to modify.
3. Select **Change Password**.



Edit Account

Name
Test

Change Password

Password

Confirm Password

Delete Cancel Save


Figure 11: Edit Account Details Dialog

4. In the Password field, enter a password.
5. In the Confirm Password field, enter the same password again.

6. Select **Save**.

Delete a User Account

To delete a user account:

1. Go to **Administration > Accounts**.
2. Select  next to the account that you want to delete.
The **Account Settings** dialog opens.
3. Select **Delete**.
A confirmation dialog displays.
4. Select **OK** to confirm that you want to delete the account.

Related Links

[Account Settings](#) on page 39

Account Settings

Configure the following user account settings:

Name

Name for the user account.

Password

Password for the user account. The password must be between 8 and 24 characters.

Confirm Password

Enter the password for the user account a second time.

Admin Role

The access level for the user account. Valid values are:

- Full Admin
- Read Only

System Configuration

System administrators can do the following from the **Administration > System** menu:

- Configure network interfaces and network time
- Manage Universal Compute Platform upgrades and system maintenance
- Configure availability mode for network failover and redundancy
- View system logs and information.

Related Links

[Configuration](#) on page 40

[System Logging](#) on page 43

[Maintenance](#) on page 44

[Network Setup](#) on page 45

[Network Time](#) on page 50

[Cloud Visibility](#) on page 50

[Upgrade the Universal Compute Platform](#) on page 51

[System Information](#) on page 56

[Utilities](#) on page 58

Configuration

Go to **Administration > System > Configuration** to complete a configuration backup or restore.

This backup and restore procedure is limited to configuration files and, optionally, logs and audit files. A system backup is a different procedure. A system backup is a full system snapshot rescue file (*-rescue-user.tgz). Creating a full system rescue file is an option during the system upgrade process.

Before you perform a backup procedure, decide what to back up and where to save the backup file:

Before you perform a backup procedure, decide what to back up and where to save the backup file:

- Select back up configs, logs, and audit or back up configuration only.
- Select a location to store the backup file.
- Select **Local** as the backup location.
- (Optional) Configure a backup schedule.



Note

It is a best practice to set up a scheduled backup for all managed appliances.

On-demand backups can only be stored locally, while scheduled backups can be stored on a mounted flash drive or on a remote server.

You can select from the following tasks:

- [Run a Backup](#) on page 40
- [Restore Backup File](#) on page 41
- [Schedule a Backup](#) on page 42

Run a Backup


Use this procedure to run an on-demand configuration backup. A configuration backup is limited to configuration files and, optionally, logs and audit files.

1. Go to **Administration > System > Configuration**.
2. Select the **Backup/Restore** tab.
3. Select **What to back up**. The options are:
 - **Configs, Logs and Audit**
 - **Configurations only**
4. Select **Where to Backup** (for example, **Local**).

5. Select **Start Backup**.

Restore Backup File

Use this procedure to restore the appliance from a selected configuration backup file.

1. Go to **Administration > System > Configuration**.
2. Select the **Backup/Restore** tab.
3. If no backup file displays under **Select Backup**, then complete the following steps to upload the backup file:
 - a. Under **Restore**, select , then select **Upload**.
 - b. Select the **Upload Method**. Valid values are:
 - **HTTP**
 - **FTP**
 - **SCP**
 - c. If you chose HTTP as the upload method, do either of the following and then select **Close**:
 - Select **Choose Backup file**, then browse to the backup file and select it
 - Use the cursor to drag and drop the backup file from a local drive onto the desktop.

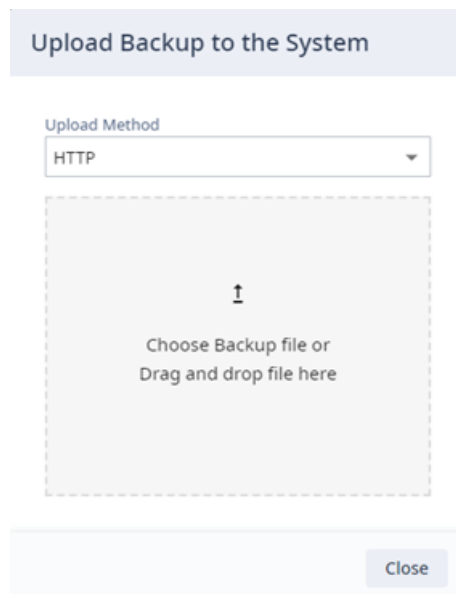


Figure 12: Upload Controller Image

- d. If you chose FTP or SCP, enter the remote server details and then select **OK**:
 - **Server IP**—Enter the IPv4 address of the remote server.
 - **Username**—Enter a username that has access to the remote server.
 - **Password**—Enter the password that authenticates the username on the remote server.
 - **Directory**—Enter the directory where the backup file is saved.

- **Filename**—Enter the filename of the backup file.
 - **Destination**—Enter the upload destination. For example, Local.
4. From the **Select Backup** drop-down, select the uploaded backup file.
 5. Run the restore job.

Schedule a Backup

When you schedule a backup, you can choose to upload the backup to a server or have the scheduled backup saved locally or on an external flash drive. To schedule a backup:

1. Go to **Administration > System > Configuration > Schedule Backups**.
The **Schedule Backup** dialog displays.

Figure 13: Schedule Backup Dialog

2. Configure the following parameters:

Backup Location

Indicates where to send the backup file. Valid values are: Local or Remote. When sending a backup to a remote server, configure the server properties.

What to back up

Indicates the content of the backup file. Valid values are: Configs, Logs and Audit (which is a full backup), or Configuration files only.

Schedule Task

Indicates when the backup task runs. Valid values are: Daily, Weekly, Monthly.

Include Weekends

Select this check box to include weekends in the backup schedule.

Timezone

Select the timezone to be used for the backup.

Time

Set the time of day for the scheduled backup.

3. If you selected **Remote** for the **Backup Location**, enter the remote server details:

Protocol

Select FTP or SCP.

Server IP

Enter the IPv4 address of the remote server.

Username

Enter a username with login access to the remote server.

Password

Enter a password that authenticates the username on the remote server.

Directory

Enter the directory where the backup file is to be saved.

4. Select **Schedule Backup**.

System Logging

Syslog event reporting uses the syslog protocol to relay event messages to a centralized event server on the enterprise network. In the protocol, a device generates messages, a relay receives and forwards the messages, and a syslog server receives the messages.

System Log Level

Determines the error severity that is logged for the appliance. Select the least severe log level that you want to receive: Information, Minor, Major, Critical. For example, if you select Minor, you receive all Minor, Major and Critical messages. If you select Major you receive all Major and Critical messages. The default is Minor.

Syslog

Provide the IP Address of 1-3 syslog servers and enable the type of messages that you want to send to the syslog servers.

- **Send all Service Messages**

- **Send Audit Messages**

**Note**

To synchronize the logs, the syslog daemon must be running on both the appliance and on the remote syslog server. When you change the log level on the appliance, you must modify the appropriate setting in the syslog configuration on remote syslog server.

Facility Codes

Facility codes identify log streams in the remote syslog server. Select a unique facility code (local.0 - local.6) for each Universal Compute Platform facility to differentiate the log streams and facilitate the filtering of messages.

The facility code applies to all servers. Select a facility code for each of the following:

- Application Facility
- Service Facility
- Audit Facility

Maintenance

Perform cluster maintenance and tech support from the **Maintenance** menu. Go to **Administration > System > Maintenance** .

System Actions

Reset the cluster configuration, restart the appliance, or shut down the appliance.

Reset Configuration

- Resets all user configurations
- Provides the option to reset the ICC (management) port configuration
- Resets the Kubernetes node
- Resets the shared file system

Reboot

The Universal Compute Appliance shuts down, then reboots. A warning message is displayed, asking you to confirm your selection.

Shut Down

The system enters the halted state, which stops all functional services and the application. A warning message is displayed, asking you to confirm your selection. To restart the system, the power to the system must be reset.

Cluster Actions**Reset Node:**

- Resets the Kubernetes node
- Resets the shared file system

Session

Determines the web session inactive window before the session times out. Enter the value as hours : minutes. The range is 1 minute to 168 hours (7 days).

Tech Support

Generate a tech support file for troubleshooting. Select the file criteria: **Appliance**, **Log**, or **All**. (All is the default value.)

1. Select **Generate Tech Support File**.

The generated file displays in the list.

2. To download the file, select the file and select .

Network Setup

Host Attributes

Attributes that define your network: Host Name, Domain Name, Default Gateway, and your DNS servers.

The Default Gateway IP address is the global default IP route setting for the appliance. Valid values are: the Admin topology gateway address and any IP address on the physical Interfaces or Bridge at AC VLAN topology subnets.

L2 Ports

Use the L2 Ports information to understand the OSI Layer 2 (Data Link Layer) physical topology of the data plane. These ports represent the actual Ethernet ports.

Select  to display port statistics.

Port1

MAC Address: A4:BF:01:71:09:F6

Speed: 10000

	Sent	Receive
Unicast Frames	2708917	1749061
Multicast Frames	0	2504267
Broadcast Frames	0	0
Octets	1014884533	1749061

Close

Figure 14: Port Statistics

Interfaces

Add network topologies. Topologies represent the networks with which the Universal Compute Appliance interacts. The attributes of a topology are: VLAN ID, Port, IP address, Mode, and certificates. To add an interface, select **Add New Interface**.

Static Routes

Use static routes to set the default route of the Universal Compute Appliance so that device traffic can be forwarded to the default gateway. To add a static route, select **Add New Route**.

Related Links

[Create New Interface Settings](#) on page 46

[Static Route Properties](#) on page 50

Add Interface

1. Go to **Administration > System > Network Setup**.
2. Under Interfaces select **Add New Interface**.
The **Create New Interface** dialog displays.
3. Configure the Interface Properties.

Related Links

[Create New Interface Settings](#) on page 46

Create New Interface Settings

The following table provides interface properties for the settings in the **Create New Interface** window.

Table 12: Interface Properties

Field	Description
Name	Name of the interface.
Mode	Describes how traffic is forwarded on the interface topology. Options are: <ul style="list-style-type: none"> • Physical - The topology is the native topology of a data plane and it represents the actual Ethernet ports. • Management - The native topology of the Universal Compute Appliance management port. • Routed - The controller is the routing gateway for the routed topology. • Bridged at Controller - The user traffic is bridged (in the L2 sense) between wireless clients and the core network infrastructure. • Bridged at AP - The user traffic is bridged locally at the AP without being redirected to the controller.
VLAN ID	ID for the virtual network.

Table 12: Interface Properties (continued)

Field	Description
Tagged	Indicates if the interface tags traffic. When traffic is tagged, the VLAN ID is inserted into the packet header to identify which VLAN the packet belongs to. Tagging can identify the port or interface to send a broadcast message to.
Port	Physical port on the Universal Compute Platform for the interface.
Management Traffic	Enable or disable Management Traffic through this interface. Enabling management provides access to SNMP (v1/v2c, v3), SSH, and HTTPs management interfaces.
MTU	Maximum Transmission Unit (MTU). Standard is 1500 bytes. Fixed value.
Layer 3	
IP Address	For an Admin topology, the Layer 3 check box is selected automatically. The IP address is mandatory for a Physical topology. This allows for IP Interface and subnet configuration together with other networking services.
CIDR	CIDR field is used along with IP address field to find the IP address range.

Table 12: Interface Properties (continued)

Field	Description
FQDN	Fully-Qualified Domain Name
VRRP	<p>Supports load balancing and high-availability functions for the Universal Compute Platform cluster.</p> <p>IP Addresses Record the IP address relationship between the cluster's direct interfaces (ICC, Service/Data ports), VRRP, and external access.</p> <p>Priority VRRP uses priority settings as a mechanism to arbitrate mastery of the state of exchanges across members of the cluster.</p> <p>Best Practice:</p> <ul style="list-style-type: none"> • Designate node 1 as the highest priority, node 2 for second highest priority, and node 3 as the lowest priority. • The same priority should be used across all services (ICC, Services). <p>Router ID Allows segmentation of a routing domain.</p> <p>It is important to separate from any other VRRP uses on the same network segment. The assigned value is arbitrary, but the value must not overlap when another VRRP usage is visible in the attached network segments.</p> <p>Note: In a stand-alone configuration, configure priority and router ID with a numeric value. However, in a stand-alone configuration, the specific value is not important. These attribute definitions are important in a multiple-node configuration.</p>

LAG Interfaces

Universal Compute Platform supports the IEEE 802.3ad implementation of Dynamic Link Aggregation Group (LAG), with control managed by the Link Aggregation Control Protocol (LACP). When you join two or more ports into a LAG interface, the network bonds the ports and treats them as a single logical port interface. LAG interfaces increase link throughput and provide redundancy in case of a link failure.

Consider the following when configuring LAG:

- Supported port combinations are: ICC1 and ICC2, and any combination of two to four data ports so long as the ports are configured to run at the same speed.
- An ICC port and a data port cannot be combined into the same LAG interface.
- A single port cannot be added into more than one LAG interface.
- The LAG interface inherits VLAN assignments automatically from newly added port members.

Configure LAG Ports

Use this procedure to configure Link Aggregation Group (LAG) interfaces on Universal Compute Platform.



Note

Make sure to configure LAG on the switch that connects to the LAG ports. Otherwise, the LAG connection fails.

1. Go to **Administration > System > Network Setup**.
2. Under **L2 Ports**, assign data ports to each LAG interface:
 - a. For **LAG1**, select each data port that you want to add to this LAG.
 - b. For **LAG2**, select each data port that you want to add to this LAG.
 - c. Select **Save** and then select **OK**.
The LAG interface inherits the VLAN assignments automatically from newly added port members.
3. To aggregate the ICC ports, under **ICC Interfaces**, select **LAG**.
4. Complete the LAG interface configuration for each new LAG interface:
 - a. Under **Interfaces**, select the new LAG interface.
 - b. Configure the interface settings. For more information, see [Create New Interface Settings](#) on page 46.
 - c. Select **Save**.

Add Static Route

Static Routes define the default route to Universal Compute Platform for legitimate wireless traffic. You must be a system administrator to add a static route.



Note

Static Routes affect the settings for the Default Gateway IP address under **Host Attributes**. Adding a default static route (0.0.0.0/0) changes the Default Gateway IP address.

To add a static route, take the following steps:

1. Go to **Administration > System > Network Setup**.
2. Under Static Routes select **Add New Route**.
The **New Static Route** dialog displays.
3. Configure the Static Route Properties.

Related Links

[Static Route Properties](#) on page 50

Static Route Properties

Details about Static Route Properties.

Table 13: Static Route Parameters

Field	Description
Destination	IP address of the destination Universal Compute Platform.
CIDR	CIDR field is used along with IP address field to find the IP address range.
Gateway	Gateway address of the Universal Compute Platform for any Admin or physical interfaces (B@AC L3 VLAN).

Related Links

[Add Static Route](#) on page 49

Network Time

System administrators can configure network time and the NTP servers. Go to **Administration > System > Network Time**.

- **System Time** — Displays the current system date and time.
- **Configured Time Zone** — Displays current time zone settings.
- **Set New Time Zone** — From the drop-down field, select a time zone, and select **Save** to manually change system date and time.
- **NTP** — Check **NTP** to configure servers for Network Time Protocol (NTP).

NTP is an Internet Standard Protocol that assures accurate synchronization to the millisecond of computer clock times in a network of computers.

- **NTP Reachable** — An icon indicates if the NTP server is reachable:
 - Green. The server is reachable.
 - Red. The server is not reachable. Check your NTP server settings. Universal Compute Platform has lost connectivity.
- **NTP Server (s)**—Enter the IPv4 address or fully qualified domain name for each NTP server.

Select **Save** to save any updates to the settings.

Settings

Cloud Visibility


If your deployment is onboarded to ExtremeCloud IQ, you can view the cloud address from **Administration > System > Settings**. This page populates automatically when you onboard the cluster to ExtremeCloud IQ. For example, the URL may look like:

<RDC name>-cw.extremecloudiq.com where:

- <RDC name> is your Regional Data Center (RDC) information available under **About ExtremeCloud IQ**.
- -cw indicates a Universal Compute Platform appliance.
- .extremecloudiq.com is the ExtremeCloud IQ host address.

Add Web Proxy Server





For enhanced data security, you can add a web proxy server. A proxy server is an additional server in a client-server deployment that provides additional data security boundaries, protecting users from malicious activity on the internet.

1. Select the navigation menu  and select **Administration > System > Settings**.
2. Select the **Web Proxy** tab.
3. Enter the **IP Address** of the proxy server along with the server **Port** to which you should connect.
4. If the proxy server requires authentication, select **Authentication** and enter the **Username** and **Password** for an account that has access to the proxy server.
5. Select **Save**.

Upgrade the Universal Compute Platform

You can access options that let you upgrade Universal Compute Platform software at **Administration > System > Software Upgrade**.

The user interface displays information under the following tabs:

- **Image Management**—This tab lets you view the software images that have been uploaded to this appliance. You can select an image and select one of the following icons to complete an action using that image:
 -  (Copy to Nodes)—Copy this image to other nodes in the cluster.
 -  (Delete)—Delete the image from the appliance.
 -  (Upgrade)—Start an upgrade using this image.
 -  (Refresh)—Refresh the screen.
- **Upload**—This tab lets you upload new images for Universal Compute Platform.
- **Schedule**—This tab lets you configure an upgrade schedule.
- **Kubernetes Upgrade**—This tab displays a list of nodes with the current Pod version and Kubernetes version for each node. All nodes should be running the same Pod and Kubernetes version.
- **Logs**—This tab contains logs with information about upgrade history, upgrade details, and restore history.

Go to [Upgrade Universal Compute Platform Task Flow](#) on page 52 to initiate the upgrade process.

Related Links

[Upgrade Universal Compute Platform Task Flow](#) on page 52

- [Upload Software Image](#) on page 52
- [Copy Image to All Nodes](#) on page 53
- [Upgrade Nodes](#) on page 54
- [Schedule an Upgrade](#) on page 54
- [Kubernetes Upgrade](#) on page 55
- [Upgrade Logs](#) on page 55

Upgrade Universal Compute Platform Task Flow

To upgrade Universal Compute Platform, complete the tasks in the following task flow.

Table 14: Upgrade Universal Compute Platform Task Flow

	Procedure	Description
1	Upload Software Image on page 52	Upload the new software image to a Universal Compute Platform cluster node.
2	Copy Image to All Nodes on page 53	(Clustered deployments only). Copy the uploaded image to other cluster nodes.
3	Upgrade the cluster nodes using either of these procedures: <ul style="list-style-type: none"> • Upgrade Nodes on page 54 • Schedule an Upgrade on page 54 	You can initiate an immediate (on-demand) upgrade of cluster nodes or schedule the upgrade for the future. Note: With either option, you must upgrade the nodes one node at a time.
4	Kubernetes Upgrade on page 55	Check that your Kubernetes version is up to date and that all pods are running the same version.



Note

- For information on past upgrades, see [Upgrade Logs](#) on page 55.
- For information on how to upgrade container applications, see [Engine Upgrades](#) on page 32.

Upload Software Image


Use this procedure to upload a new image file to a Universal Compute Platform node. You must upload the image before you can use the image to complete an upgrade.



Note

The software image must be accessible from your local computer.

1. Go to **Administration > System > Software Upgrade**.
2. Select **Upload**.
3. For **Image Type**, select **Upgrade** or **Backup**, depending on the type of image.
4. For the **Destination**, select **Local**.
5. Select the **Upload Method** (HTTP, FTP, or SCP).

6. Complete one of the following actions according to the selected upload method
 - For **HTTP** uploads, complete one of the following options to upload the file:
 - Select and drag the image file to the Universal Compute Platform desktop.
 - Select the  (Choose Upgrade File) icon and then browse to the image file and select it.
 - For **FTP** or **SCP** uploads, complete the additional server fields that display according to the below requirements and then select **Upload Image**:
 - **Server IP**—Enter the IP address of the server where the image is stored.
 - **Username**—Enter a username for an account that has access to the server.
 - **Password**—Enter the password for the preceding user account.
 - **Directory**—Enter the directory where the software image is stored.
 - **Filename**—Enter the filename of the software image file.

The image file uploads to Universal Compute Platform.

What to do Next

For clustered deployments, [Copy Image to All Nodes](#) on page 53.

Otherwise, upgrade this node using one of the following procedures:

- [Upgrade Nodes](#) on page 54
- [Schedule an Upgrade](#) on page 54


Copy Image to All Nodes

For clustered deployments, use this procedure to copy the software image from one cluster node to other nodes in the cluster.



Note

- The image must be uploaded already to the source node for the Copy.
- The Copy feature applies to Universal Compute Platform software installation images only.

1. Log in to the Universal Compute Platform node where the image is uploaded.
2. Go to **Administration > System > Software Upgrade**.
3. Select **Image Management**.
4. Select the image that you want to copy and then select the  (Copy to Nodes) icon.
5. In the **Copy image to nodes** popup, set the following fields:
 - **Image**—Make sure that the correct file is selected.
 - **Copy Image to**—Select each destination node for the copy. You can select multiple nodes.



Note

The destination nodes must be running version 5.07.01 or later.

6. Select **Copy**.

The software image copies to the selected nodes.

What to do Next

Upgrade the cluster nodes using one of these procedures:

- [Upgrade Nodes](#) on page 54
- [Schedule an Upgrade](#) on page 54

Upgrade Nodes

Use this procedure to initiate an on demand upgrade of Universal Compute Platform nodes. You can upgrade each node in the cluster from a single node.



Note

- You cannot upgrade more than one node in the cluster at the same time.
- The software installation image must be uploaded already to the local node (the node on which you've logged in). If you're upgrading a different node than the local node, the software installation image must have been uploaded to that node as well.

1. From any cluster node, go to **Administration > System > Software Upgrade**.
2. Select **Image Management**.
3. Select the image that you want to use for the upgrade and then select the **↑** (Upgrade) icon.
4. Set the following fields in the **Software Upgrade** popup:
 - **Image**—Make sure that the image that you want to use is selected.
 - **Backup System Image to**—Select **Local**.
 - **Upgrade**—Select **Now**.
 - **Node**—Select the node that you want to upgrade.
5. Select **Upgrade**.

The upgrade process begins.

After the upgrade finishes, restart the procedure and select a different node for upgrade.

Schedule an Upgrade

Configure an upgrade schedule for the local Universal Compute Platform image.



Note

- You can schedule an upgrade for the local node only. For clusters, you must configure an upgrade schedule for each node separately from that node.
- You can upgrade only one node in the cluster at a given time.
- The software image must be uploaded already to the local node.

1. Go to **Administration > System > Software Upgrade**.
2. Select **Schedule**.
3. Select the **Image** that you want to use for the upgrade.

4. From the **Backup System to** drop-down, select the destination for the backup file:
 - **Local**—Backup file is saved locally.
 - **Flash**—Backup file is saved to flash.
 - **No Backup**—No backup file is created.
5. Assign the following details to the backup:
 - **Backup Filename** that you want to assign.
 - **Timezone** of the appliance.
 - **Time** of the upgrade in 24 hour format HH-MM.
 - **Date** of the upgrade in MM/DD format.



Note

When you supply a Date and Time that is in the past, the schedule is set for the following year at the specified date and time.

6. Select **Schedule**.

Repeat this procedure on the other cluster nodes to schedule upgrades for those nodes.

Kubernetes Upgrade

The **Kubernetes Upgrade** tab lets you manage Kubernetes versions. The tab displays a list of nodes with the current Pod version and Kubernetes version for each node. All nodes should be running the same Pod and Kubernetes version. A status message indicates whether or not you need to upgrade Kubernetes.

Before You Begin

If the status message indicates that you need to upgrade Kubernetes, before you upgrade, go to **Dashboard > Deployment Health** and verify the following:

- Verify the system is in a healthy state.
- Verify all nodes are on the same version of software.
- Verify Deployment health has all Operational indicators as Good (green) NTP is reachable, Kubernetes nodes are healthy, Kubernetes HA cluster is healthy, Load-balancing services are properly configured and accessible.

To complete the upgrade:

1. Go to **Administration > System > Software Upgrade**.
2. Select the **Kubernetes Upgrade** tab.
3. Select **UPGRADE**.
4. Select **OK**.

The job upgrades the Kubernetes version on all cluster nodes.

Upgrade Logs

The **Logs** tab displays the following information for the appliance:

- Upgrade History

- Upgrade Details
- Restore Details

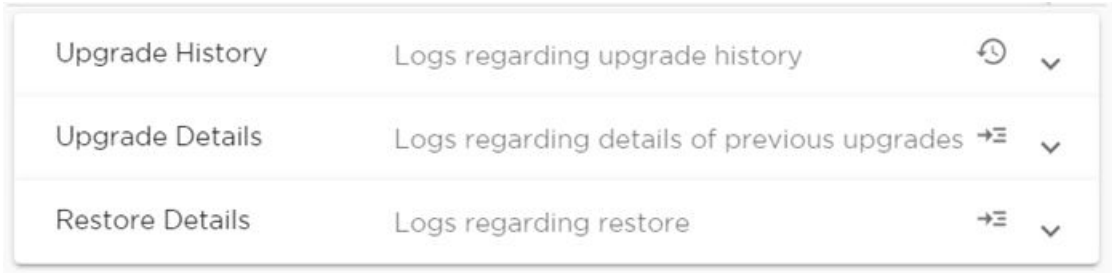



Figure 15: Logs tab

Select ^ to expand each log file.

You can copy text from each log file.

1. Select ^ to expand the log file.
2. Select the log text you want to copy and select .

System Information

Go to **Administration > System > System Information** to view system and manufacturing information. You can select either of the following tabs:

- **System Information** tab
- **Manufacturing Information** tab

From the **System Information** tab, you can view the following information about your system:

- System Up Time
- CPU Utilization
- Memory Usage
- Disk Usage
- System Temperature
- Fan Speed
- Power Supply
- Port Interface Status

System Information		Manufacturing Information			
System Up Time: 6 days, 1:00					
- CPU Utilization: 19.60					
- Memory Usage:					
Free: 36 %					
- Disk Usage (1 Kbyte blocks)					
Partition	Total Space	Used	Available	Use %	
root	50246500	8214768	41508560	17%	
tmp	163840	15640	148200	10%	
persistdata	227034492	231520	226740452	0%	
home	1999248	96	1962288	0%	
logs	4031424	5784	3968292	0%	
cdr	2031440	8	1994080	0%	
reports	53588732	60	53517812	0%	
trace	4047424	8	3990068	0%	
persistent	103179552	80239164	22871576	78%	
- System Temperature					
System Board (BB Lft Rear) Temperature: 42 C					
System Board (BB P1 VR) Temperature: 46 C					
Front Panel Board (Front Panel) Temperature: 29 C					

Figure 16: Example System Information

From the **Manufacturing Information** tab, you can view the following information:

- Manufacturing ID (Serial Number)
- BIOS Version
- Hardware Revision
- VF MAC base
- SMX Version
- Software Version
- Model
- CPU Type
- CPU Frequency
- Number of CPUs
- Total Memory
- MAC addresses for various system interfaces

```
System Information      Manufacturing Information

Manufacturing ID (Serial Number): XC012027P-70008
BIOS Version: SE5C620.86B.02.01.0011.C00EC.032620200659
Hardware Revision: 01
VF MAC base: F4CE48F61BC0-64
SMX Version: 05.02.01.0017
GUI Version: 05.03.01.0001
Software Version: 05.03.01.0001T
Model: 4120C
CPU Type: Intel(R) Xeon(R) Silver 4114T CPU @ 2.20GHz
CPU Frequency (MHz): 2200.000
Number of CPUs: 40
Total Memory: 147272704 KB
LAN1 (10Gbps) MAC address: A4:BF:01:70:32:56
LAN2 (10Gbps) MAC address: A4:BF:01:70:32:55
LAN3 (50Gbps) MAC address: 1C:34:DA:7C:A5:83
LAN4 (50Gbps) MAC address: 1C:34:DA:7C:A5:82
ICC1 (10Gbps) MAC address: A4:BF:01:70:32:53
```

Figure 17: Example Manufacturing Information

Utilities

Universal Compute Platform provides a remote console to a node controller. Use the remote console to open a live SSH console session.

To open a remote console, go to **Administration > System > Utilities**.



Note

A live console is available from each engine instance for diagnostics and troubleshooting. To open a live console and connect to a container or virtual machine instance (VMI), from the engine **Console** tab, select **Attach**.

Select each engine instance to display engine settings and the **Console** tab for that instance..



Index

A

- abstract v
- Access Control
 - certificates 18
- add node 22
- announcements 8, 9
- application image
 - download 29
 - upload 29

B

- backup and restore the appliance 40
- backup files
 - scheduled backups 42

C

- Certificate Signing Request 19
- certificates 18
- certificates, generate 19
- cloud visibility 50
- configuration settings 16
- container engine application settings 30
- conventions
 - notice icons 6
 - text 6
- copy image to other nodes 53
- CSR
 - generate 19

D

- Dashboards
 - Deployment Health 11
 - Nodes 12
 - Pods List 13
 - Services List 13
 - System Health 12
 - Volumes List 14
- deploy application image file 30
- diagnostic tools 35, 36
- documentation
 - feedback 9
 - location 7, 8
- download docker application image 29

E

- engine application
 - install for self-orchestrated 30
- engines
 - image management 32
- ExtremeCloud IQ 50
- ExtremeCloud IQ container installation 24
- ExtremeCloud IQ registration
 - network registration 26
 - user account registration 27

F

- feedback 9

I

- image
 - copy software to other nodes 53
- image management
 - engines 32
- install a container 28, 29
- install engine application
 - self-orchestration 30
- Interface Properties 46
- interface, add 46
- interfaces, configuring 45, 46

K

- Kubernetes upgrade 55

L

- LAG interfaces
 - configuration 49
 - support 48
- logs 34, 43

M

- managing accounts 37

N

- navigation menu 10
- network accounts
 - ExtremeCloud IQ registration 26
- network time, configuring 50

node replacement
 prepare for 20
node, add 22
notices 6

P

product announcements 8, 9
proxy server
 add 51

R

readiness assessment
 run 25
replace node
 prepare for 20
restoring backup file 41

S

schedule an upgrade 54
software image
 copy to other cluster nodes 53
SSH Console 58
Static Route Properties 50
static route, add 49
support, *see* technical support
system configuration 39
system information, viewing 56
system maintenance 44

T

technical support
 contacting 8, 9

U

Universal Container
 install 28, 29
upgrade
 schedule 54
upgrade application
 self-orchestrated 33
upgrade cluster task flow 52
upgrade logs 55
upgrade nodes
 on demand 54
upgrade platform 51
upload docker application image 29
upload software image 52
user accounts
 add 37
 delete 39
 edit 38
 ExtremeCloud IQ registration 27
 managing 37
 settings 39

V

VMI 13

W

warnings 6
web proxy
 add 51