

ExtremeCloud IQ Controller v10.13.02 CE1000 CE2000 and CE3000 Deployment Guide

Configuration and Management



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Abstract

The ExtremeCloud IQ Controller v10.13.02 CE1000, CE2000, and CE3000 Deployment Guide provides comprehensive instructions for installing and configuring the CE1000, CE2000, or CE3000 container application on the Universal Compute Platform. This guide covers the characteristics and limitations of the CE, supported hardware, and detailed installation prerequisites and task flow. It includes steps for uploading the application image, running the configuration wizard, generating the activation license, and optionally onboarding to ExtremeCloud IQ for cloud visibility. The document also highlights additional deployment considerations, such as configuring LAG ports, and provides troubleshooting tips and support information



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 routers, the product is referred to as *the switch* or *the router*.

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

Table 1: Notes and warnings

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
Words in italicized type	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 2: Text

Table 3: Command syntax

Convention	Description
bold text	Bold text indicates command names, keywords, and command options.
<i>italic</i> text	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.
х у	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</i> [member].
\	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

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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 https://www.extremenetworks.com/documentation-feedback/ .

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.



About CE1000, CE2000, and CE3000

Supported Capacities on page 9 Supported Hardware on page 10 Management Access on page 10

This guide provides the steps needed to install, activate, and deploy CE1000, CE2000, or CE3000 on the Universal Compute Platform. Installing any of the CE container applications installs ExtremeCloud IQ Controller within the container automatically.

Each CE image is a KVM-based VM platform that is intended to run in a container on the Universal Compute Platform. Each CE model offers unique support capacities that meet the requirements for a specific sized deployment of ExtremeCloud IQ Controller.

Supported Capacities

Refer to the following table for supported device and user capacities for each deployment application.

Deployment	Single Node	HA Pair
CE1000	 Up to 250 APs Up to 2,000 users 	Up to 500 APsUp to 4,000 users
CE2000	 Up to 2,000 APs Up to 16,000 users 	 Up to 4,000 APs Up to 32,000 users
CE3000	Up to 10,000 APsUp to 50,000 users	 Up to 20,000 APs Up to 100,000 users

Table 4: Supported Capacities

Supported Hardware

The following table contains information on supported hardware for each CE deployment type.

Table 5: Supported Hardware

СЕ Туре	Supported Hardware	Supported Installation	Specifications
CE1000	Universal Compute Platform 1130C Appliance	Single CE1000 instance per appliance	 Management Port: fixed configuration connected to Kubernetes Data Ports: 4 x 1 Gbps RJ45 LAG Ports: 2 Software image file extensions: dke (for upgrades) CE1000-xxx.tar (for first-time installs)
CE2000	Universal Compute Platform 2130C Appliance	Single CE2000 instance per appliance	 Management Port: fixed configuration connected to Kubernetes 2 x 10 Gbps Data Ports 1-2/RJ45 2 x 10/25 Gbps Data Ports 3-4/SFP28 LAG Ports: 2 Software image file extensions: gse (for upgrades) CE2000-xxx.tar (for first-time installs)
CE3000	Universal Compute Platform 3150C Appliance	Single CE3000 instance per appliance	 Management Port: fixed configuration connected to Kubernetes 2 x 10/25 Gbps Data Ports 1-2/SFP28 2 x 10/25/50/100 Gbps Data Ports 3-4/QSFP28 LAG Ports: 2 Software image file extensions: bte (for upgrades) CE3000-xxx.tar (for installs)

For detailed server specifications, see the document that applies to the appliance for your deployment type:

- CE1000—Extreme Networks Universal Compute Platform 1130C Installation Guide
- CE2000—Extreme Networks Universal Compute Platform 2130C Installation Guide
- CE3000—Extreme Networks Universal Compute Platform 3150C Installation Guide

Management Access

A CE deployment contains two internal stacks (management and data) that handle separate functions but which share a single routing table. Because the two stacks share a single routing table, you can connect to either stack directly using the appliance data ports. The recommended configuration for access to the ExtremeCloud IQ management interface is to connect directly using the appliance data ports as per the following image. The image illustrates the connection flow from an external laptop through an external switch, to the dedicated vSwitch for eth1 and connecting directly to the management interface.

To use this approach, run the configuration wizard for the CE application and under **Data Port Settings**, set **Management on interface (y|n)** to **y**. You can then sign in to the management interface by connecting to the data port IP address.



Alternatively, if you don't want to allow direct access to the management stack, configure a VRRP address on the data port that provides the best access to internal interfaces and use the VRRP address to sign in to the management interface. The VRRP address provides an alias that allows access to the management interface by using the host's routing table. The host routes sign in requests to the VRRP address through an internal NAT reference to reach the management stack.



Installation

Installation Prerequisites on page 12 Installation Task Flow on page 13

Use the procedures in this chapter to install and deploy the CE container application on Universal Compute Platform. Installing the CE container application installs ExtremeCloud IQ Controller within the container automatically.

Installation Prerequisites

Before you install the CE container application, make sure that you've done the following:

Licensing Requirements

Complete the following CE licensing requirements on the Extreme Networks Support Portal:

- Purchase the required SKUs for your deployment. Check with your Extreme representative on SKU requirements.
- Download the installation image for your application from the portal at Downloads/ ExtremeCloud/Extreme Cloud IQ Controller.

Universal Compute Platform Requirements

Install and connect the Universal Compute Platform hardware appliance. For detailed information, see the Installation Guide that applies to your appliance model.

- Extreme Networks Universal Compute Platform 1130C Appliance Installation Guide
- Extreme Networks Universal Compute Platform 2130C Appliance Installation Guide
- Extreme Networks Universal Compute Platform 3150C Appliance Installation Guide

Installation Task Flow

To install a CE deployment on the Universal Compute Platform appliance, complete the tasks in the following task flow.

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Note

Review Installation Prerequisites on page 12 and make sure that you've met all requirements before you start the task flow.

Table 6: CE1000 Installation Task Flow

	Procedure	Description
1	Install ExtremeCloud Edge - Self- Orchestration on page 13	Install a Self-Orchestration Deployment of ExtremeCloud Edge on the Universal Compute Platform hardware appliance
2	Upload CE Container Image on page 14	Upload the CE application image file to Universal Compute Platform.
3	Install CE Deployment on page 14	Install the CE container application on Universal Compute Platform.
4	Run Configuration Wizard on page 15	Run the wizard to apply basic networking settings to your installation.
5	Generate Activation License on page 17	Generate the activation license and apply the license to your deployment.
6	Onboard to ExtremeCloud IQ on page 17	Optional. Onboard the controller to ExtremeCloud IQ if you want to provide cloud visibility to the deployment.

Install ExtremeCloud Edge - Self-Orchestration

Before you install the CE application, deploy ExtremeCloud Edge - Self-Orchestration on the Universal Compute Platform host appliance. The CE application runs on as a container on the Self-Orchestration deployment.

For detailed instructions, see ExtremeCloud Edge - Self-Orchestration Deployment Guide.

Make sure that your installation includes the following settings:

- Deployment Type=ExtremeCloud Edge Self Orchestration
- Cluster Node Information=Standalone
- ICC1 IP Address—It's mandatory to assign an ICC1 IP address. However, connectivity for the ICC interface is not required.
- Current Data Port Settings—Set Management Traffic (admin interface) to y. This setting is recommended for all CE deployments, but is not mandatory. This setting lets you use the data ports to access the CE management interface directly.
- DNS—You must assign at least one DNS server.
- LAG (optional)—If you want to deploy LAG data ports, configure LAG on Universal Compute Platform before you configure the feature on ExtremeCloud IQ Controller.

This can be done as part of your installation prerequisites. For more information, see LAG Port information in LAG Configuration Summary on page 18.



Note VRRP is an optional configuration for CE deployments.

Upload CE Container Image

Upload the CE container application image to Universal Compute Platform.

Before You Begin

Make sure that you've completed all of the requirements in Installation Prerequisites on page 12, including purchasing the SKU and downloading your CE model's application image from the support portal.

- 1. From the Universal Compute Platform, go to Engines > Image Management.
- 2. Complete one of the following actions:
 - 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 upload may take a few minutes. After the upload completes, the CE container application image displays on the **Image Management** page of Universal Compute Platform.



Note

If you need to update the images on the Image Management page:

- To delete an uploaded image, select the check box next to the image file. Then, select **Delete**.
- To refresh the image file list, select **Refresh**.

Install CE Deployment

Use this procedure to install the CE container application image on the Universal Compute Platform. Installing the CE image file installs ExtremeCloud IQ Controller on the appliance automatically. You can run the controller from the CE container.

- 1. Log in to the Universal Compute Platform.
- 2. Go to **Engines** > **Installation**.
- 3. From the ExtremeCloud IQ Controller pane, select Install.
- 4. In the popup window, select **OK**.

The application installs. After installation, the **ExtremeCloud IQ Controller** pane contains a link to the CE application.

5. Within the **ExtremeCloud IQ Controller** pane, select the link for your new installation.

- 6. Review the following settings and apply any required updates:
 - Node Affinity—Represents the FQDN (hostname + domain name) of the Universal Compute Platform host on which this ExtremeCloud IQ Controller instance is installed.
 - Port (1, 2, 3, and 4)—The VF represents the virtual function on the internal switch that connects to the data port. We recommend that you retain the default settings. By default, the first installed instance on the host defaults to VF01.
- 7. Select Deploy.

After a delay of up to a few minutes to process the updates, the ExtremeCloud IQ Controller summary screen displays with a set of four tabs:

- Network Service Configuration
- Statistics
- Logs
- Consoles
- 8. Select **Console** and then select **Attach**.

The configuration wizard launches automatically.

Run Configuration Wizard

Run the configuration wizard to connect ExtremeCloud IQ Controller to the network, and to assign basic network settings such as the admin password, DNS servers, time servers, and default gateway.

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Note

For each category, the wizard displays the default setting and asks whether you accept the default setting. The following conventions apply:

- You must press the <Enter> key after each line entry.
- Round brackets () represent choices and square brackets [] represent the default selection that gets applied if you press <Enter> without making a selection. For example, (y|n) [y] where y and n are options and y is the default.
- For IP address and subnet settings, if you don't want to use the default, enter the desired IP address or netmask and then press <Enter>.
- 1. On Universal Compute Platform, go to Engines > Installation.
- 2. From the **ExtremeCloud IQ Controller** pane, select the CE link for the new installation.
- 3. Select the Console tab and then select Attach.

The configuration wizard launches within the console automatically.

4. Configure the admin password:



Note

As a best practice, change the default admin password immediately after the first login. The default admin password is as follows:

- username: admin
- password: abc123
- 5. Follow the prompts to configure the AP password.
- 6. Under **Data Port Settings**, follow the prompts to apply settings to each of the following fields:
 - Port [Port 1]
 - IP address—This is the IP address that ExtremeCloud IQ Controller will use.
 - Netmask
 - VLAN ID (1-4093) [4090]
 - Tagged Frames (y|n) [n]
 - Management on interface (y|n) [n]
 - Device Registration (y|n)[y]
- 7. Under **Current Host Attribute Settings**, follow the prompts to apply settings to the following fields:
 - Host Name [XIQC]
 - Domain Name [extremenetworks.com]
 - Primary DNS Server—Enter the IP address of the DNS server. This is a mandatory setting.
 - Secondary DNS Server—Enter the IP address of the secondary DNS server. This is an optional setting.
- 8. Under **Current Global Default Gateway Settings**, enter the IP address of the default gateway and enter y.
- 9. Under **Current Time Settings** follow the prompts to configure the following settings:.
 - Timezone
 - Time Server 1—Enter an IP address or FQDN. This is a mandatory setting.
 - Time Server 2—Enter an IP address or FQDN. This is an optional Setting.
- 10. At the **Controller Post Installation Configuration** screen, Press A to apply settings and exit.

Note

If you need to update any of these settings post-install, you can relaunch the wizard from the console with the cli-wizard command, which opens the wizard at the Controller Post Installation Configuration screen. Enter the corresponding numerical value to access the settings that you want to configure. Follow the prompts to update the settings. When you are done, select A for Apply Settings and Exit

- 11. Select **Detach** to exit the console.
- 12. Login to ExtremeCloud IQ Controller using the IP address and credentials that you assigned in this procedure.

Generate Activation License

All customers must generate and install an activation license. After you install the CE deployment, use this procedure to generate and install the activation package.

- 1. Obtain the Locking ID of the CE instance:
 - a. Log in to the CE instance.
 - b. Under Upload Activation License, copy the Serial Number (Locking ID) value.



Note

If you plan to onboard to ExtremeCloud IQ, copy the MAC Address value too as you will need it during cloud onboarding.

- 2. Obtain the activation file:
 - a. Log in to the Extreme Networks Support Portal.
 - b. Go to Assets > Licenses Home and select the CE1000, CE2000, or CE3000 Voucher ID line item from the list.
 - c. On the Voucher Details page, select Generate Activation Key.
 - d. Provide the serial number for the CE activation.
 - e. Select the box to accept Terms and Conditions and select Submit to generate the activation file.
 - f. Download the activation file.
- 3. Install the activation file:
 - a. If you signed out of CE container, sign back in.
 - b. Upload the license file to the Upload Activation License pane.

Onboard to ExtremeCloud IQ

Use this optional procedure to onboard the CE deployment to ExtremeCloud IQ if you want to provide cloud visibility to your deployment.

Before You Begin

You will need both the Serial Number and MAC address that you copied from Extreme Cloud IQ Controller.



Note

Internet connectivity is mandatory for cloud visibility.

- 1. Sign in to ExtremeCloud IQ.
- 2. Go to Manage > Devices.
- 3. Select (+) icon and select Quick Add Devices > Manage your devices directly from cloud.

- 4. Paste the CE Serial Number into the **Serial Number** box on ExtremeCloud IQ.
- 5. From the Device Make drop-down, select Controllers.
- 6. Paste the CE MAC address into the **MAC Address** box on ExtremeCloud.
- 7. Select Add Devices.

LAG Configuration Summary

CE1000, CE2000, and CE3000 support the use of Link Aggregation (LAG) for the data ports. LAG interfaces increase link throughput and provide redundancy in case of a link failure.

To deploy the feature, you must configure LACP-based LAG on Universal Compute Platform and then complete a matching static LAG configuration in ExtremeCloud IQ Controller with the same LAG port members in both configurations. After the feature is configured, LACP LAG on Universal Compute Platform creates and manages the aggregated link, and the CE deployment's static LAG runs on that link.



Note

CE1000, CE2000, and CE3000 support static LAG only. Universal Compute Platform supports LACP LAG only.

To configure LAG for a CE deployment, complete the configuration in the following table.

Step	Action	More Details
1	Configure LAG data ports on the Universal Compute Platform host.	See "Configure LAG Ports" in Universal Compute Platform User Guide.
2	Configure LAG on ExtremeCloud IQ Controller. Make sure that the configured LAG ports are the same as on the host.	See "LAG Configuration" in ExtremeCloud IQ Controller User Guide.

Table 7: Configure LAG Ports on CE1000, CE2000, or CE3000



- LAG configuration on Universal Compute Platform can be completed before or after the CE installation.
- Make sure that the LAG configuration on Universal Compute Platform is saved before you configure LAG on ExtremeCloud IQ Controller.

Installation Example

The following configuration example provides sample settings for a CE1000 installation on Universal Compute Platform.

Universal Compute Platform Settings

Configuration Wizard:

ICC Port Settings: ICC1 Port IP Address=192.168.100.14 ICC1 Port Netmask=255.255.255.0 ICC1 Port VRRP IP Address= ICC1 Port VRRP Priority=100 ICC1 Port VRRP Router ID=1 Enable Lag on ICC1 Port=No

Data Port Settings: Name=Port 1 Port=Port 1 IP Address=10.10.10.1 Netmask=255.255.255.0 VLAN ID=1 Tagged=No Management Traffic=Yes

Host Attribute Settings: Host Name=universalcomputeplat Domain Name=extremenetworks.com Primary DNS=8.8.8.8 Secondary DNS=1.1.1.1

Global Default Gateway Settings: Default Gateway=192.168.100.1

Time Settings: Timezone=America/Detroit Time Server 1=time.nist.gov Time Server 2=time.apple.com

Cluster Configuration (from Universal Compute Platform user interface):

```
Deployment Type=Self-Orchestration
Cluster Node Information=Standalone
ICC IP Address=192.168.100.14
Pod Network IP Address=10.96.0.0
Pod Network CIDR=16
Service Network IP Address=10.97.0.0
Service Network CIDR=16
```

CE1000/CE2000/CE3000 Deployment Settings:

```
Initial Settings:
```

```
Node Affinity=universalcomputeplat.extremenetworks.com
Port 1=VF01
Port 2=VF01
Port 3=VF01
Port 4=VF01
```

Configuration Wizard

```
Data Port Settings:
Name=physical 1
Port=Port1
IP Address=10.10.10.9
Netmask=255.255.255.0
VLAN ID=1
Tagged=No
Management Traffic=Yes
Device Registration=Yes
```

```
Host Attribute Settings:
Host Name=XIQC
Domain Name=extremenetworks.com
Primary DNS=8.8.8.8
Secondary DNS=1.1.1.1
Global Default Gateway Settings:
Global Default Gateway=10.10.10.1
Time settings:
Time Zone=America/Toronto
Time Server 1=time.nist.gov
Time Server 2=time.apple.com
```

Where To Go Next

The CE deployment is up and running. ExtremeCloud IQ Controller is installed within the container and is connected to the network.

See the following links for detailed information on how to configure and run ExtremeCloud IQ Controller:

- ExtremeCloud IQ Controller User Guide
- ExtremeCloud IQ Controller Deployment Guide
- Additional ExtremeCloud IQ Controller Documents