



# Extreme Defender Application User Guide

*Version 3.01*

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# Preface

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This section discusses the conventions used in this guide, ways to provide feedback, additional help, and other Extreme Networks® publications.

## Conventions





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This section discusses the conventions used in this guide.

### Text Conventions

The following tables list text conventions that are used throughout this guide.

**Table 1: Notice Icons**

Icon	Notice Type	Alerts you to...
	General Notice	Helpful tips and notices for using the product.
	Note	Important features or instructions.
	Caution	Risk of personal injury, system damage, or loss of data.
	Warning	Risk of severe personal injury.
<b><i>New!</i></b>	New Content	Displayed next to new content. This is searchable text within the PDF.

**Table 2: Text Conventions**

Convention	Description
Screen displays	This typeface indicates command syntax, or represents information as it appears on the screen.
The words <b>enter</b> and <b>type</b>	When you see the word “enter” 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 “type.”
<b>[Key]</b> names	Key names are written with brackets, such as <b>[Return]</b> or <b>[Esc]</b> . If you must press two or more keys simultaneously, the key names are linked with a plus sign (+). Example: Press <b>[Ctrl]+[Alt]+[Del]</b>
<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.

## Documentation and Training

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To find Extreme Networks product guides, visit our documentation pages at:

Current Product Documentation	<a href="http://www.extremenetworks.com/documentation/">www.extremenetworks.com/documentation/</a>
Archived Documentation (for earlier versions and legacy products)	<a href="http://www.extremenetworks.com/support/documentation-archives/">www.extremenetworks.com/support/documentation-archives/</a>
Release Notes	<a href="http://www.extremenetworks.com/support/release-notes">www.extremenetworks.com/support/release-notes</a>
Hardware/Software Compatibility Matrices	<a href="https://www.extremenetworks.com/support/compatibility-matrices/">https://www.extremenetworks.com/support/compatibility-matrices/</a>
White papers, data sheets, case studies, and other product resources	<a href="https://www.extremenetworks.com/resources/">https://www.extremenetworks.com/resources/</a>

## Training

Extreme Networks offers product training courses, both online and in person, as well as specialized certifications. For more information, visit [www.extremenetworks.com/education/](http://www.extremenetworks.com/education/).

## Providing Feedback to Us

Quality is our first concern at Extreme Networks, and we have made every effort to ensure the accuracy and completeness of this document. We are always striving to improve our documentation and help you work better, so we want to hear from you! We welcome all feedback but especially want to know about:

- Content errors or confusing or conflicting information.
- Ideas for improvements to our documentation so you can find the information you need faster.
- Broken links or usability issues.

If you would like to provide feedback to the Extreme Networks Information Development team, you can do so in two ways:

- Use our short online feedback form at <https://www.extremenetworks.com/documentation-feedback/>.
- Email us at [documentation@extremenetworks.com](mailto:documentation@extremenetworks.com).

Please provide the publication title, part number, and as much detail as possible, including the topic heading and page number if applicable, as well as your suggestions for improvement.

## Getting Help

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

<b>Extreme Portal</b>	Search the GTAC (Global Technical Assistance Center) knowledge base, manage support cases and service contracts, download software, and obtain product licensing, training, and certifications.
<b>The Hub</b>	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.
<b>Call GTAC</b>	For immediate support: 1-800-998-2408 (toll-free in U.S. and Canada) or +1 408-579-2826. For the support phone number in your country, visit: <a href="http://www.extremenetworks.com/support/contact">www.extremenetworks.com/support/contact</a>

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

- Your Extreme Networks service contract number and/or serial numbers for all involved Extreme Networks products
- A description of the failure
- A description of any action(s) 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

## Subscribing to Service Notifications

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

- 1 Go to [www.extremenetworks.com/support/service-notification-form](http://www.extremenetworks.com/support/service-notification-form).
- 2 Complete the form with your information (all fields are required).
- 3 Select the products for which you would like to receive notifications.



### Note

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

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- 4 Click **Submit**.

# 1 Welcome to Extreme Defender Application

## Installing Extreme Defender Application Getting Started Navigating the User Interface

Extreme Defender Application provides security management plus traffic and application visibility of connected end devices. Defender enables the centralized creation of policies that define network and security settings for groups of IT devices.

Extreme Defender Application is installed as a container application on the ExtremeCloud Appliance. The application runs and is upgraded independently from the appliance.

Extreme Defender Application employs a configuration wizard that handles the following tasks:

- AP3912 and SA201 device adoption
- Site and device group creation
- Adoption rule configuration
- Policy group creation and auto-generation and assignment of policy roles
- Statistical reporting for protected devices.

## Installing Extreme Defender Application




### Note

Before you can install Extreme Defender Application you must install ExtremeCloud Appliance. See the [ExtremeCloud Appliance Installation Video](#) for more information.

Download the docker file from the Extreme Networks support site. Then, use the following procedure to install Extreme Defender Application on the ExtremeCloud Appliance.

From the ExtremeCloud Appliance:

- 1 Go to **Admin > Applications**.
- 2 Click  to add Extreme Defender Application to ExtremeCloud Appliance.
- 3 Click **Upload**, select the Defender docker file, and click **Open**.
- 4 Click **OK**.

Extreme Defender Application is uploaded and installed on ExtremeCloud Appliance.

- 5 Click  to start Extreme Defender Application.

The Extreme Defender Application user interface can be accessed using the HTTPS protocol on the TCP port 5825. For example, if your ExtremeCloud Appliance has the IP address, 192.168.10.10, you can

manage Extreme Defender Application in a browser by typing `https://192.168.10.10:5825/defender` into the URL field.

**Note**

When installing Extreme Defender Application on an ExtremeCloud Appliance Availability Pair, the ExtremeCloud Appliance services are supported by High Availability, the Extreme Defender Application is not.

**Related Links**




[Upgrading Extreme Defender Application](#) on page 8

[Uninstalling Extreme Defender Application](#) on page 8

[Defender Application in an Availability Pair](#) on page 9

## Upgrading Extreme Defender Application

To upgrade Extreme Defender Application:

- 1 Go to **Admin > Applications**.
- 2 Click  to stop Extreme Defender Application.
- 3 Click **OK** to confirm that you want to stop the application.
- 4 Click  to begin the application upgrade.
- 5 Click **Upload** and select the docker file.
- 6 Click **Open** and click **OK**.
- 7 Click  to start Extreme Defender Application.


**Related Links**

[Installing Extreme Defender Application](#) on page 7

[Uninstalling Extreme Defender Application](#) on page 8

## Uninstalling Extreme Defender Application

To uninstall Extreme Defender Application:

- 1 Go to **Admin > Applications**.
- 2 Click .
- 3 Click **OK** to confirm that you want to uninstall the application.

**Note**

All application data will be lost when you uninstall Extreme Defender Application.

**Related Links**

[Installing Extreme Defender Application](#) on page 7

[Upgrading Extreme Defender Application](#) on page 8



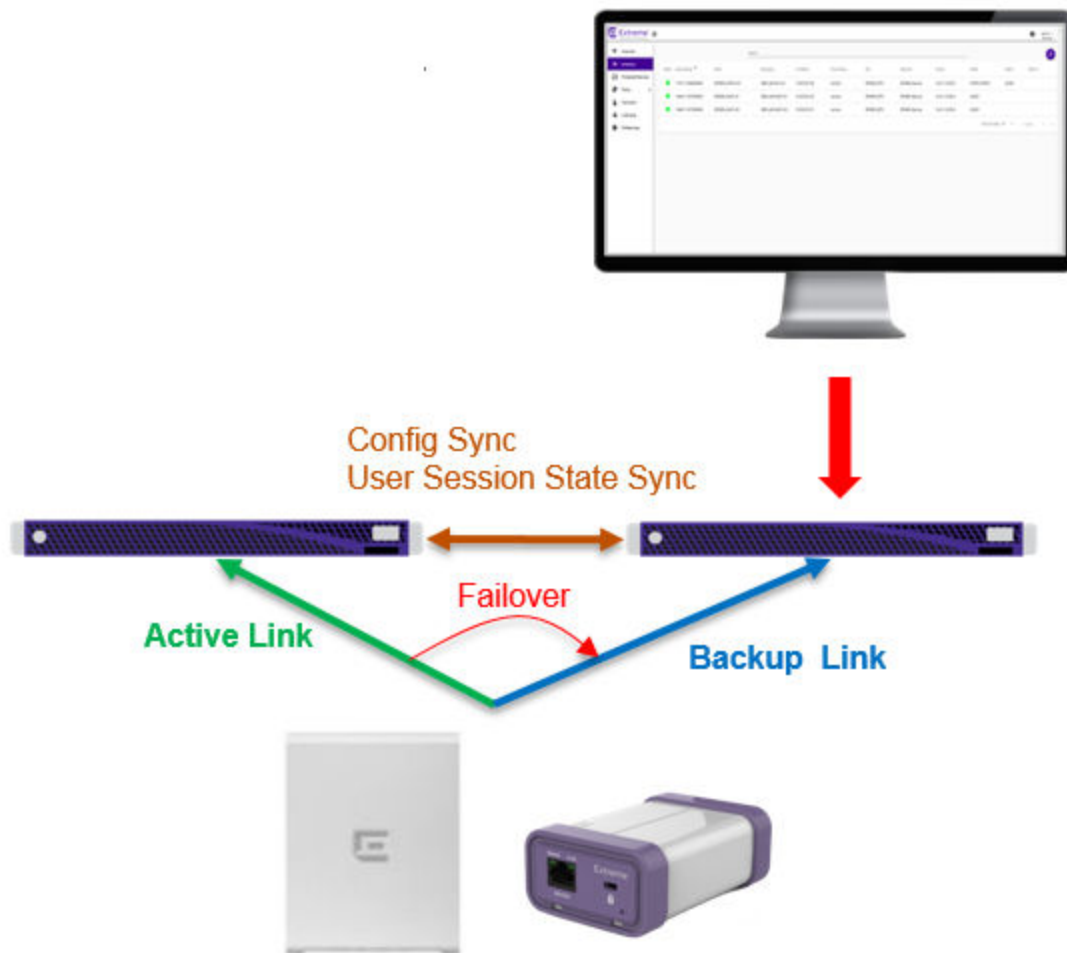
## Defender Application in an Availability Pair

Extreme Defender Application is a single installation for an Availability Pair. The underlying ExtremeCloud Appliance is HA capable, but access to the Extreme Defender Application instance may be interrupted.

The following is supported in an Availability Pair:

- Automatic Configuration Sync — Configuration modifications on one appliance are replicated to the peer appliance.
- Automatic User Session Sync — In the case of a failover, the surviving appliance resumes ownership of the session.
- Double Capacity of Pair — In the case of a failover, the surviving appliance can sustain full paired capacity.
- Automatic load balancing of devices.
- Centralized APs maintain active and backup links to each controller. — In case of a failover, the device *activates* the backup link.

For more information about Availability Pair for ExtremeCloud Appliance, refer to *ExtremeCloud Appliance User Guide* located in the documentation portal: <https://extremenetworks.com/documentation/extremecloud-appliance>.



**Figure 1: ExtremeCloud Appliance Availability Pair with Extreme Defender Application**

## Getting Started

When you log in to Extreme Defender Application for the first time, you are prompted with initial configuration options.

# WELCOME

Please select a Country and Time Zone

🌐 Country ▼

---

Time Zone

Select timezone ▼

---

Create auto-provisioning rules for new access-points

Enable Wireless Radios on 3912 Access-Points

Run Setup

## Figure 2: Defender Initial Configuration

Take the following steps:

- 1 Select a **Country** and **Time Zone** value from the drop-down lists.  
Specify the values that correspond to your AP licensing domain.
- 2 Check **Create auto-provisioning rules for new access points**.  
This option creates adoption rules for your access points so that your access points are automatically discovered by the appliance. If you do not enable this option, you will have to go to ExtremeCloud Appliance and manually select your access points for provisioning.
- 3 Check **Enable Wireless Radios on 3912 Access-Points**.  
Enable this option to allow wireless clients onto your network.
- 4 Click **Run Setup**.

## Navigating the User Interface

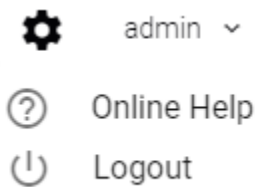
The Extreme Defender Application user interface is divided into workbenches that correspond to the network administration workflow. The **Overview** is the first workbench. Once the network is up and running, use the **Overview** dashboard to monitor your network activity and performance.

The Defender user interface can be accessed using the HTTPS protocol on the TCP port 5825. For example, if your ExtremeCloud Appliance has the IP address, 192.168.10.10, you can manage Defender in a browser by typing `https://192.168.10.10:5825/defender` into the URL field.

Extreme Defender Application offers the following workbenches:

- **Overview.** Create multiple dashboards to monitor your protected devices, access points, and adapters.
- **Inventory.** List your access points and adapters and view details about each network device.
- **Protected Devices.** List your protected devices and view details about each protected device.
- **Policy.** View policy groups and roles associated with your network.
- **Activation.** Activates managed devices and access points.
- **Licensing.** Manage product licenses.
- **Preferences.** Configure user interface preferences.

Defender offers a context-sensitive Online Help system. Click the drop-down **admin** menu on any page to access the topic-based Help System.



**Figure 3: Defender Admin Menu**

Additionally, click  on each dialog to display Help content for that dialog.

The Online Help file organization corresponds to the workbench structure of Extreme Defender Application. The Online Help file offers a Table of Contents, Search Facility, and Index so you can find the information that you need.

Also on the **admin** menu, you will find the **Logout** option.

Click  on any page to access the **Preferences** page.

## Search Facility

Each list page in Defender offers a search facility so you can easily find what you are looking for based on specific criteria. Regular expression search, including wild cards is not supported.

# 2 Overview

## Adding a New Dashboard Modifying a Dashboard Widgets

Monitor your network activity and performance on the **Overview** dashboard. The **Overview** dashboard displays widgets that can help you proactively monitor and troubleshoot your network. The dashboard provides a graphical representation of information related to devices, protected devices, and network traffic. Depending on the report, the widget represents historical data or a combination of historical and the latest data from shared memory.



### Note

Historical data is persistent after system restarts and software upgrades, but not if the system is restored to the factory defaults or from a backup.


Extreme Defender Application is installed with a default dashboard. You can customize the default dashboard and add additional dashboards a unique set of widgets. The maximum number of supported dashboards is 10. The **Overview** dashboard offers the following widgets:

- Device Vendors
- Devices by Throughput
- Throughput
- Usage
- AP Status
- Adapter Status

## Adding a New Dashboard

Create additional dashboards to organize data.

To add a new dashboard:

- 1 From the default dashboard, click the plus sign.  
The **Layout** tab displays.
- 2 In the **Name** field, enter a name for the dashboard.
- 3 Select the **Widgets** tab.  
The list of widgets by category is displayed.
- 4 Expand the list of widgets in each category.
- 5 Drag and drop a widget onto the dashboard.
- 6 Click  to save the dashboard.

### Related Links


[Modifying a Dashboard](#) on page 14

[Widgets](#) on page 14

## Modifying a Dashboard

You can customize the default dashboard views to fit your network's analytic requirements.

To modify a dashboard:

- 1 Go to **Overview** and select .
- 2 Select the **Widgets** tab to view the list of available widgets.
- 3 Drag and drop a widget on to the dashboard.

### Related Links

[Widgets](#) on page 14

[Adding a New Dashboard](#) on page 13

## Widgets

From the **Widgets** tab, expand the categories that you want to use. Drag and drop a widget onto the dashboard. The following widget categories are available:

<b>Device Vendors</b>	The number of protected devices by device vendor.
<b>Devices by Throughput</b>	The top protected devices by throughput (kilobits per second).
<b>Throughput</b>	Network throughput (kilobits per second) in 10-minute intervals.
<b>Usage</b>	Network usage (RxBytes and TxBytes) in 10-minute intervals.
<b>AP and Adapter Status</b>	<p>Graphs the number of APs or adapters by status. Valid status values are:</p> <ul style="list-style-type: none"> <li>• Green — In-Service. Device has discovered ExtremeCloud Appliance and is providing service.</li> <li>• Yellow — In-Service Trouble. Device has discovered ExtremeCloud Appliance but it is not a member of a device group.</li> <li>• Grey — Unknown. Device is added to ExtremeCloud Appliance but the device has never discovered ExtremeCloud Appliance .</li> <li>• Red — Critical. After being Active, Discovered, and On-boarded, associated device is no longer connected to ExtremeCloud Appliance.</li> </ul>

### Related Links

[Adding a New Dashboard](#) on page 13

[Modifying a Dashboard](#) on page 14


# 3 Inventory

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**Inventory Device Status**  
**Viewing Inventory Details**  
**Grouping Protected Devices from the Inventory List**  
**Throughput Tab**  
**Usage Tab**

The **Inventory** list allows you to view the inventory of mobile network devices, such as access points and Extreme Defender Adapter hardware (SA201). The **Inventory** list provides information on the status and the location of the devices. The following information is provided for each device on the **Inventory** list:

- Status
- Serial Number
- Name
- Description
- IP Address
- Site
- Networks
- Version
- Model

Click  to manually refresh the page.

Select **Items Per Page** to customize the number of records displayed per page. Valid values are:

- 5
- 10
- 25
- 100

## Related Links

[Search Facility](#) on page 12

[Inventory Device Status](#) on page 15





[Viewing Inventory Details](#) on page 16

## Inventory Device Status

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The following describes each device status on the **Inventory List**.


**Table 3: Device Status from the Inventory List**

Status	Description
	In-Service. Device has discovered ExtremeCloud Appliance and is providing service.
	In-Service Trouble. Device has discovered ExtremeCloud Appliance but it is not a member of a device group.
	Unknown. Device is added to ExtremeCloud Appliance but the device has never discovered ExtremeCloud Appliance .
	Critical. After being Active, Discovered, and On-boarded, associated device is no longer connected to ExtremeCloud Appliance.

## Viewing Inventory Details

Specific details about each device are available from the device **Details** tab. To access the details for each device:

- Go to **Inventory** and select a device from the list.  
The following information is provided:
  - Device Status
  - Serial Number
  - IP Address
  - Gateway Address
  - Hardware Type
  - Firmware Version
  - Assigned Site
  - Assigned Networks
  - Number of Wired Clients
  - Number of Protected Devices associated with the selected device:
    - Number of Wired Devices
    - Number of Wireless Devices
  - Assigned group for the protected device.
- Select the **Throughput** tab to display network throughput for the last 3 hours.
- Select the **Usage** tab to display the Rx and Tx Bytes transmitted in the last 3 hours.

Click  to manually refresh the page.

### Related Links

[Throughput Tab](#) on page 17

[Usage Tab](#) on page 18

[Grouping Protected Devices from the Inventory List](#) on page 17

[Inventory](#) on page 15



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## Grouping Protected Devices from the Inventory List

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Add Protected Devices to a policy group from the **Inventory > Device Details** page or from the **Protected Devices** list. To add devices to a policy group from the **Inventory > Device Details** take the following steps:

- 1 Go to **Inventory** and select a device.  
The device **Details** tab displays.
- 2 If the device has associated Protected Devices, the **Assigned Group** field is displayed.
- 3 Select a group name from the **Assigned Group** drop-down list.  
To remove a device from a group, select **None**.
- 4 Click **Save**.



### Note

To create a new policy group, go to **Policy > Groups > Add**.

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### Related Links

[Grouping Devices from the Protected Devices List](#) on page 22

[Managing Groups](#) on page 29


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## Throughput Tab

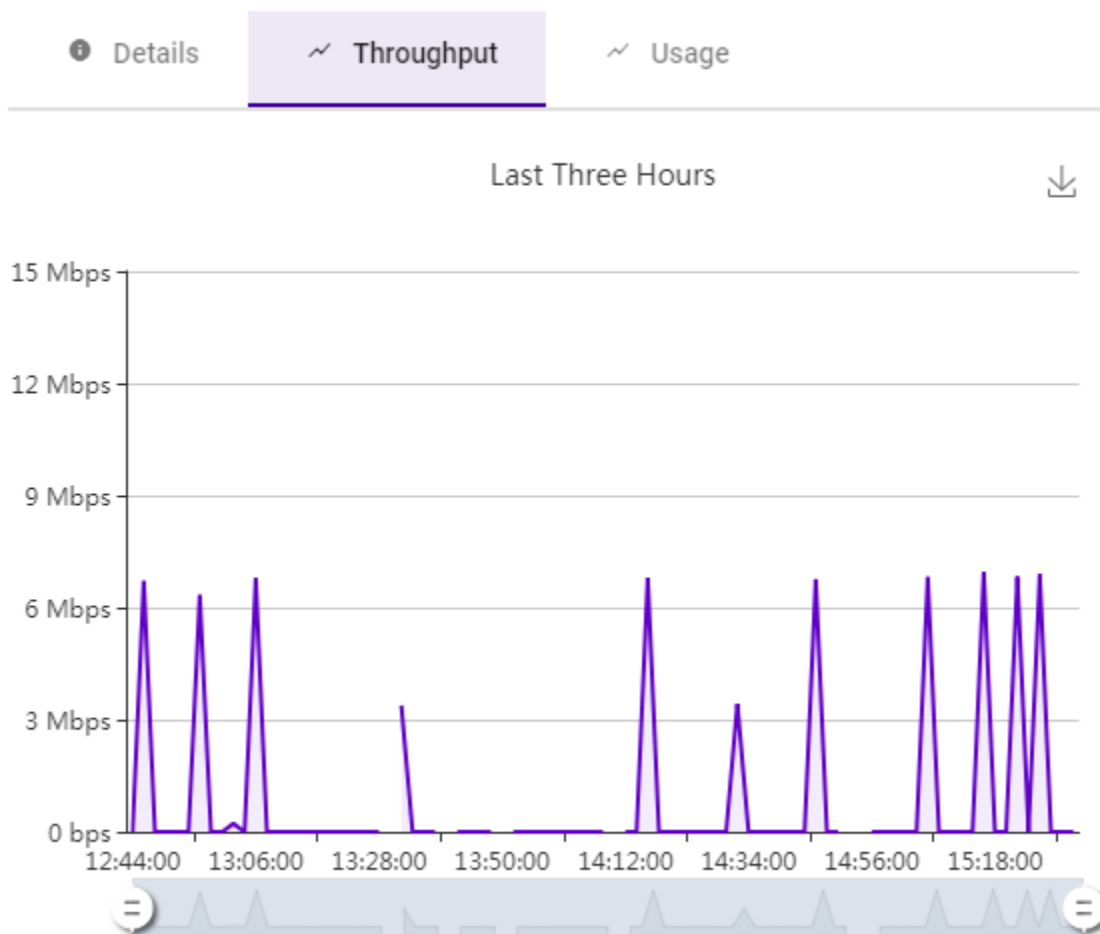
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Select the **Throughput** tab to display network throughput for the last 3 hours.

Network Throughput indicates the amount of data in Kilobits per second or Megabits per second that travels through the communication channel at a given time. This is one indication of network speed. The

Throughput chart displays data for the last 3 hours. Click  to refresh the chart on demand.


Select  to download the chart in .png format.




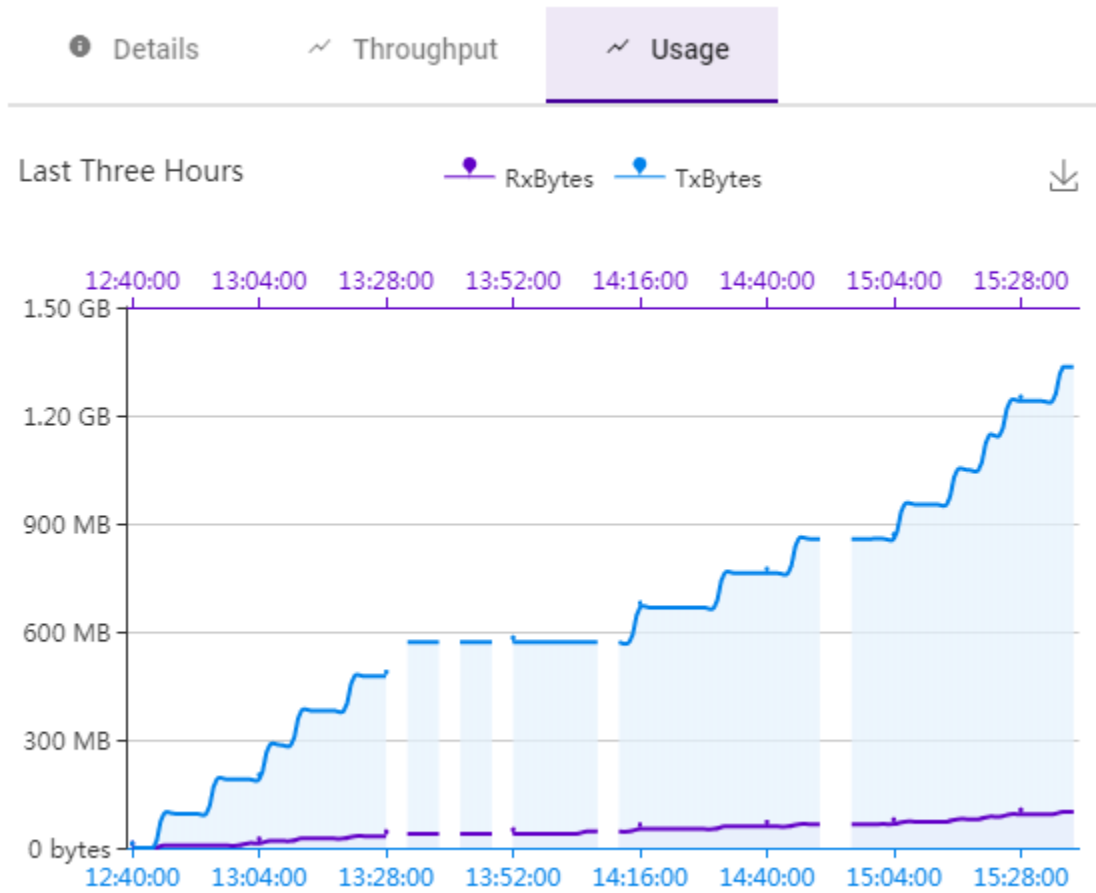
**Figure 4: AP Inventory Device Throughput (Mbps)**

## Usage Tab

Select the **Usage** tab to display the Rx and Tx Bytes transmitted in the last 3 hours.

Network Usage indicates the amount of data in Megabytes or Gigabytes that travels through the communication channel at a given time. Rx refers to bytes *received* by the device. Tx refers to bytes *transmitted* from the managed device (AP/SA201). This is one indication of network load. The Usage chart displays data for the last 3 hours. Click  to refresh the chart on demand.

Select  to download the chart in .png format.



**Figure 5: AP Inventory Managed Device Usage**

# 4 Protected Devices

## Protected Device Status

### Viewing Protected Device Details

### Grouping Devices from the Protected Devices List

### Movements Tab

### Policy Generator

The **Protected Devices** list allows you to manage attached devices that are protected by the Extreme Defender Application access points and adapter hardware (SA201) . The **Protected Devices** list provides information on the status and the location of the attached devices.

Display current devices or archived devices by selecting the appropriate option from the drop-down field at the top of the page.

The following information is provided for each device on the **Protected Devices** list:

- Status
- IP Address
- MAC Address
- Associated Site
- Assigned Group
- Assigned Role
- Service
- Host Name
- Last Seen
- Manufacturer
- AP/Adapter

Click  to manually refresh the page.

Select **Items Per Page** to customize the number of records displayed per page. Valid values are:

- 5
- 10
- 25
- 100

## Related Links

[Search Facility](#) on page 12








[Viewing Protected Device Details](#) on page 21

[Grouping Devices from the Protected Devices List](#) on page 22

## Protected Device Status

The following describes each device status on the **Protected Devices List**.

**Table 4: Protected Device Status**

Status	Description
	Active. Device has the following: <ul style="list-style-type: none"> <li>Discovered ExtremeCloud Appliance</li> <li>On-boarded with a policy role</li> <li>Actively sending data.</li> </ul>
	Not On-board. Device: <ul style="list-style-type: none"> <li>Discovered ExtremeCloud Appliance</li> <li>Actively sending data</li> <li>Not on-boarded. To on-board a Protected Device, add it to a group that has an assigned policy role.</li> </ul>
	Inactive. Device: <ul style="list-style-type: none"> <li>On-boarded with a policy role.</li> <li>Not actively sending data.</li> </ul>
	Critical. After being Active, Discovered, and On-boarded, associated AP or adapter is no longer connected to ExtremeCloud Appliance.
	Archived. Defender archives devices that are no longer present on ExtremeCloud Appliance. The device may have become inactive and aged out of ExtremeCloud Appliance reporting. If the device becomes active again on ExtremeCloud Appliance, the device will move from Archived to Active on Defender.
	Policy Generator runs on a device that is active and on-boarded.
	Policy Generator runs on an inactive device. No policy will be created while the device is inactive. When the device becomes active, the policy will automatically generate.

### Related Links

[Grouping Devices from the Protected Devices List](#) on page 22

## Viewing Protected Device Details

Specific details about each protected device are available from the **Protected Device Details** page. To access the details for each protected device:

- 1 Go to **Protected Devices** and select a device from the list.

The following information is provided:

- Licensed
- Status
- Last Seen
- Device Type

- Manufacturer
- Host Name
- MAC Address
- IP Address
- Associated Access Point
- Assigned Group
- Assigned Role
- Service
- Associated Site

The following tabs provide additional information.

<b>Throughput</b>	Select the <b>Throughput</b> tab to display network throughput for the last 3 hours.
<b>Usage</b>	Select the <b>Usage</b> tab to display the Rx and Tx Bytes transmitted in the last 3 hours.
<b>Movements</b>	Tracks the movement of protected devices, registering the following information: <ul style="list-style-type: none"> <li>• Time of movement</li> <li>• Event description</li> <li>• Serial number of source AP</li> <li>• Serial number of destination AP</li> <li>• Additional details</li> <li>• Network SSID</li> </ul>

**Policy Generator** The policy generator captures and analyzes client traffic, building an Allow policy role that correlates with the traffic pattern of the protected device. An auto-generated role can be modified by the Administrator and made available to the ExtremeCloud Appliance Rules Engine.

- 2 Select  to refresh the chart data.

#### Related Links

[Throughput Tab](#) on page 17

[Usage Tab](#) on page 18


[Movements Tab](#) on page 24

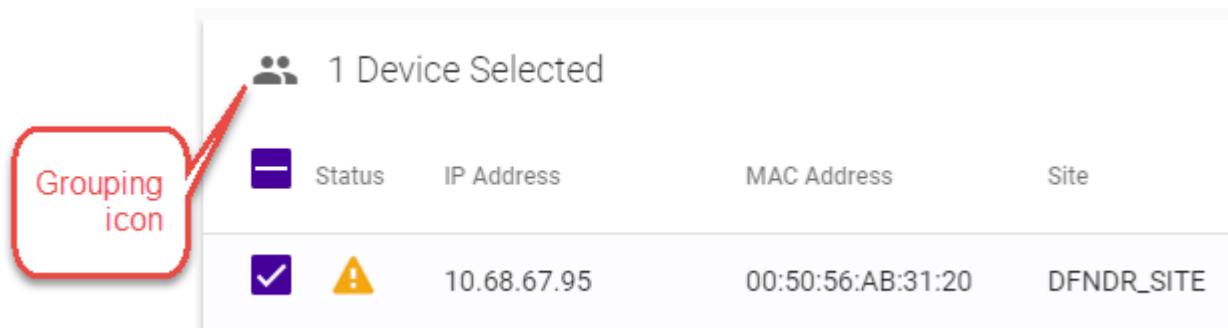
[Policy Generator](#) on page 24

## Grouping Devices from the Protected Devices List

Add Protected Devices to a policy group from the **Protected Devices** list or from the **Inventory > Device Details** page. To add devices to a policy group from the **Protected Devices** list, take the following steps:

- 1 Go to **Protected Devices**.
- 2 Select the check box for one or more devices.

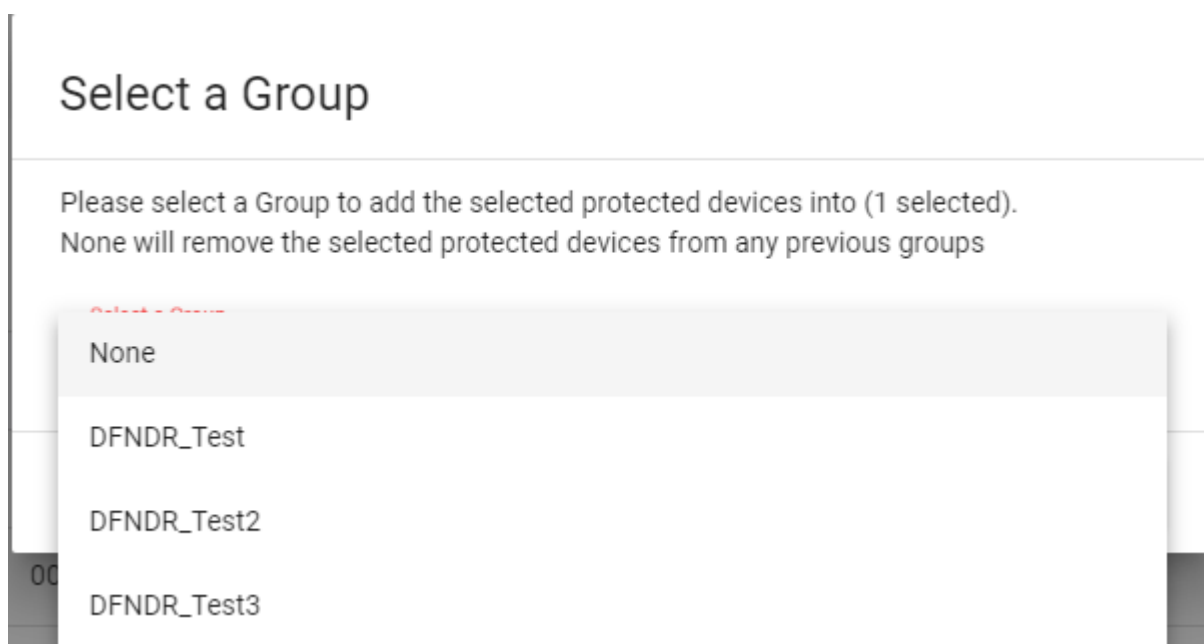
- 3 Click the group icon 



**Figure 6: Select a Policy Group for Protected Device**

The **Select a Group** dialog displays.

- 4 From the **Select a Group** drop-down, select the group name to which the devices will be added.



**Figure 7: Selecting a Group**

To remove a device from a group, select **None**.

- 5 Click **OK**.



**Note**

To create a new policy group, go to **Policy > Groups > Add**.

**Related Links**

[Grouping Protected Devices from the Inventory List](#) on page 17

[Managing Groups](#) on page 29

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## Movements Tab

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As protected devices get moved from one location to another, you can track and manage information about the specific device location. Go to **Protected Devices > Movements**. Then, specify a date range to display event information for a selected protected device. Each movement record displays the following information:

- Time of event
- Event description
- Serial number of source AP
- Serial number of destination AP
- Additional details
- Network SSID

Select **Items Per Page** to customize the number of records displayed per page. Valid values are:

- 5
- 10
- 25
- 100

### Related Links

[Search Facility](#) on page 12

[Policy Generator](#) on page 24

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## Policy Generator

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The policy generator captures and analyzes client traffic, building an Allow policy role that correlates with the traffic pattern of the protected device. An auto-generated role can be modified by the Administrator and made available to the ExtremeCloud Appliance Rules Engine.

Allow all traffic up to 7 days, capturing traffic in a .pcap file. The auto generator creates the policy role and policy group of MAC addresses called `DFNDR_PolicyGeneration` and configures policy rules based on the contents of the .pcap file. When you stop policy generation, the auto generator removes the MAC addresses from the `DFNDR_PolicyGeneration` group.

Although the Policy Generator engine is run from Extreme Defender Application, the corresponding policies are managed and enforced through the underlying ExtremeCloud Appliance. ExtremeCloud Appliance supports up to a maximum of 64 rules per policy/role definition. The number of policies/roles varies based on the appliance model.

Protected devices of the same type can be attached to a single role regardless of the network location and subnet, but multiple device types cannot share one policy role. Policy roles are enforced on the AP or on the SA201 device for B@AP and Fabric Attach topologies. They are enforced on ExtremeCloud Appliance for B@AC topologies.



### Note

Each protected device type must be associated with a different policy role. However, multiple devices of the *same* type can share a single policy role.

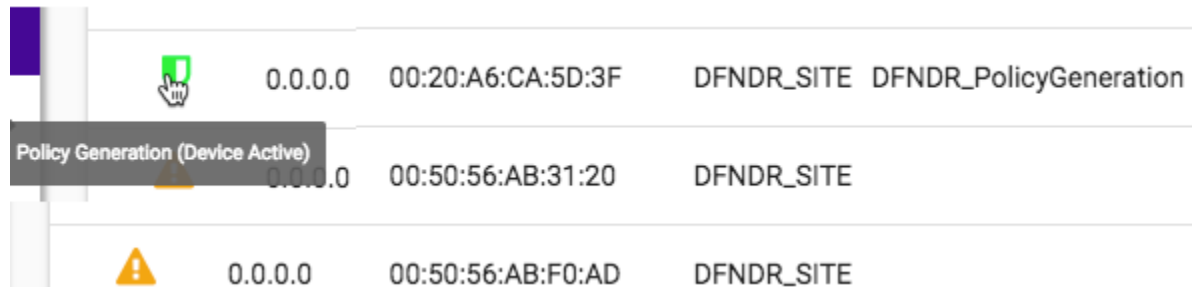
---





To initiate the auto-policy generation, take the following steps:

- 1 Specify a capture window in minutes and click **Next**.
- 2 Select a VLAN ID for the VLAN that the protected device belongs to, and click **Start**.
- 3 When the capture is complete, click **Open Generated Role for Editing** to view and edit the role.

The following is an example of a Protected Device in the device list that is in capture mode for policy generation:



	0.0.0.0	00:20:A6:CA:5D:3F	DFNDR_SITE	DFNDR_PolicyGeneration
	0.0.0.0	00:50:56:AB:31:20	DFNDR_SITE	
	0.0.0.0	00:50:56:AB:F0:AD	DFNDR_SITE	

**Figure 8: Protected Device in Capture Mode**

#### Related Links

[Configuring L2 Rules](#) on page 26

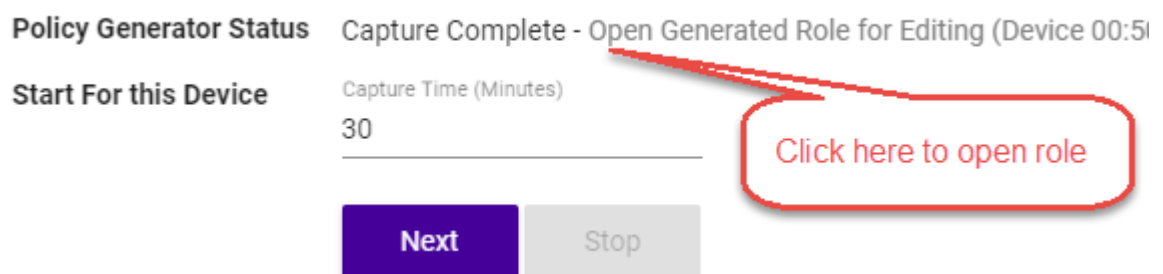
[Configuring L3 and L4 Rules](#) on page 26

## Modifying Policy Generator Roles

The policy generator captures and analyzes client traffic, building an Allow policy role that correlates with the traffic pattern of the protected device. An auto-generated role can be modified by the Administrator and made available to the ExtremeCloud Appliance Rules Engine.

To modify a generated role, take the following steps:

- 1 Click **Open Generated Role for Editing** to view and edit the role.



**Policy Generator Status** Capture Complete - Open Generated Role for Editing (Device 00:51)

**Start For this Device** Capture Time (Minutes)  
30

**Next** **Stop**

Click here to open role

**Figure 9: Open Generated Role**

- 2 Provide a name for the generated role. All generated roles start with the DFNDR\_ prefix.

- 3 Select the default action for the generated role.

Valid values are:

- Allow
- Deny
- Contain to VLAN
  - Provide a VLAN ID

- 4 Add additional rules to the generated role as required.

#### Related Links

[Configuring L2 Rules](#) on page 26

[Configuring L3 and L4 Rules](#) on page 26

#### Configuring L2 Rules

To configure an OSI Layer 2 rule, which filters on MAC Address:

- 1 Select **New**.
- 2 Enter a rule name and configure the following parameters:

**From User** A packet header includes both a destination IPv4 address and a source IPv4 address. Determine how to filter traffic that flows from the station to the network by defining the destination or the source address as the filter. Options include: Destination (dest), Source (src), and None.

**To User** A packet header includes both a destination IPv4 address and a source IPv4 address. Determine how to filter traffic that flows from the network to the station by defining the destination or the source address as the filter. Options include: Destination (dest), Source (src), and None.

**Action** Determines access control action for the rule. Valid values are:

- Allow - Packets contained to role's default action's VLAN/topology
- Deny - Any packet not matching a rule in the policy is dropped.
- Containment VLAN - A topology to use when a network is created using a role that does not specify a topology.

**MAC Address Type** Any MAC indicates no filtering on MAC Address. User Defined MAC displays a MAC Address field. Provide a specific MAC Address.

- 3 Select **Save**.

All rule types are applied to the policy in top to bottom order. Click the Up or Down arrows to move the rule up or down in the list. The policy is installed on the enforced APs.

#### Related Links

[Modifying Policy Generator Roles](#) on page 25

[Configuring L3 and L4 Rules](#) on page 26

#### Configuring L3 and L4 Rules

To configure an OSI Layer 3 and 4 rule, which filters on IP Address and Port number:

- 1 Select **New**.

A new row appears at the bottom of the list.

2 Enter a rule name and configure the following parameters:

<b>From User</b>	A packet header includes both a destination IPv4 address and a source IPv4 address. Determine how to filter traffic that flows from the station to the network by defining the destination or the source address as the filter. Options include: Destination (dest), Source (src), and None.
<b>To User</b>	A packet header includes both a destination IPv4 address and a source IPv4 address. Determine how to filter traffic that flows from the network to the station by defining the destination or the source address as the filter. Options include: Destination (dest), Source (src), and None.
<b>Action</b>	Determines access control action for the rule. Valid values are: <ul style="list-style-type: none"> <li>• Allow - Packets contained to role's default action's VLAN/topology</li> <li>• Deny - Any packet not matching a rule in the policy is dropped.</li> <li>• Containment VLAN - A topology to use when a network is created using a role that does not specify a topology.</li> </ul>
<b>Protocol</b>	The user defined protocol or protocol type associated with the defined rule. Traffic from this protocol is subject to the defined rule. Valid values are: <ul style="list-style-type: none"> <li>• User Defined, then specify a protocol that is not already in the list. Use this option to explicitly specify a protocol that is not listed.</li> <li>• A specific protocol from the list.</li> </ul>
<b>IP Subnet</b>	Specify the IP address or subnet address associated with the defined rule. Traffic from this address will be subject to the defined rule. Valid values are: <ul style="list-style-type: none"> <li>• User Defined. Specify the destination IP address and mask. Use this option to explicitly define the IP/subnet aspect of the rule.</li> <li>• Any IP - Maps the rule to the associated Topology IP address.</li> <li>• Select a specific subnet value - Select to map the rule to the associated topology segment definition (IP address/mask).</li> </ul>
<b>Port Type</b>	The port type associated with the defined rule. Traffic from this port is subject to the defined rule. Valid values are: <ul style="list-style-type: none"> <li>• User Defined, then type the port number. Use this option to explicitly specify the port number.</li> <li>• A specific port type.</li> </ul>
<b>Port Number/Range</b>	Specific port number or range of ports.

3 Select **Save**.

All rule types are applied to the policy in top to bottom order. Click the Up or Down arrows to move the rule up or down in the list. The policy is installed on the enforced APs.

#### Related Links

[Modifying Policy Generator Roles](#) on page 25

[Configuring L2 Rules](#) on page 26

# 5 Policy

## Roles Groups

Extreme Defender Application policy definition consists of roles, rules, and group management. You can use default roles and groups or create new ones.

### Related Links

[Roles](#) on page 28

[Groups](#) on page 29

## Roles

The Policy Roles list displays all roles available in your Extreme Defender Application network.

Network policies are a set of rules, defined in a specific order, that determine how connections are authorized or denied. If you do not define policy rules for a role, the role's default action is applied to all traffic subject to that role. However, if you require user-specific filter definitions, then the filter ID configuration identifies the specific role that is applied to the user.

Policy definition (Access Control List, Network assignment) are defined by the IT staff through the ExtremeCloud Appliance. Roles with a Prefix of "DFNDR\_" are available for policy assignment via the Extreme Defender Application.

By default, Extreme Defender Application creates two policy roles: DenyAll and PolicyGeneration. The DenyAll role denies all traffic by default action. There are no filter rules associated with this role. The PolicyGeneration role, has a Contain to VLAN default action and is associated with a B@AP untagged topology. The Contained to VLAN default action sends any packet not matching a rule to the defined VLAN.

ExtremeCloud Appliance supports up to 256 unique policy roles, depending on the specific appliance model user limitation. The Defender Policy Generator can generate a policy based on traffic patterns associated with a protected device. A user with Administrator access can modify an auto-generated role and make it available to the ExtremeCloud Appliance Rules Engine.

Select a role to view the associated rules in Extreme Defender Application. You can manually add and modify roles from ExtremeCloud Appliance.

### Related Links

[Policy Generator](#) on page 24

## Groups

An access control group is used to organize protected devices by MAC Address. Configure groups to be used with Access Control Rules. Defender provides the default system group PolicyGeneration with your installation to simplify the group set up process.

### Related Links

[Managing Groups](#) on page 29

[Policy Group Settings](#) on page 29

## Managing Groups


From the **Policy Groups** page you can create a new group and search for an existing group. You can also remove MAC addresses from a group or delete the group altogether.



### Note

Add Protected Device MAC addresses to a group, from the **Protected Devices** list or from the **Inventory** list.

To manage groups from the **Policy** workbench:

- Go to **Policy > Groups**.  
A list of configured groups displays. From here, you can search for a group or add a new group.
- To add a new group, click **Add** and configure the [Policy Group Settings](#).
- To remove one or more MAC addresses from the group, select the group and click  next to the MAC Address row you want to remove.
- To delete a group, select the group and click **Delete**.

### Related Links

[Policy Group Settings](#) on page 29

[Grouping Protected Devices from the Inventory List](#) on page 17

[Grouping Devices from the Protected Devices List](#) on page 22

## Policy Group Settings

Configure the following settings to create a new policy group:

**Table 5: Policy Group Settings**

Field	Description
Name	Name of the group. Defender groups include the DFNDR_ prefix.
Description	Description of the group.
Associated Role	Policy role that applies to this group. All protected devices that are members of the group are awarded the policy access defined in the associated policy role.

### Related Links

[Groups](#) on page 29

[Managing Groups](#) on page 29

[Roles](#) on page 28



# 6 Activation

## Scanning a QR Code Manual Onboarding Using a CSV File

From the **Activation** workbench, you can easily add access points and adapters to your network. The devices will be listed in an Unknown status until each device has discovered ExtremeCloud Appliance.



### Note

You must configure ExtremeCloud Appliance discovery for your devices before the devices will function in Extreme Defender Application. For information about Configuring DHCP, NPS, and DNS Services for ExtremeCloud Appliance discovery, refer to the *ExtremeCloud Appliance Deployment Guide* located in the documentation portal: <https://extremenetworks.com/documentation/extremecloud-appliance>.

Extreme Defender Application offers different ways to provision access points and adapters. If you have configured discovery and auto-provisioning, the provisioning process creates a device group for the device type within the DFNDR\_SITE. Configure auto-provisioning from the Extreme Defender Application **Welcome** screen.

### Related Links

- [Scanning a QR Code](#) on page 31
- [Manual Onboarding](#) on page 32
- [Using a CSV File](#) on page 32
- [Getting Started](#) on page 10

## Scanning a QR Code

You can provision an access point or adapter by QR Code.

- 1 Go to **Activation**.
- 2 From the Scan QR Code pane, click **Camera**.
- 3 Place the QR Code on the device up to the black box for scanning.

The information provided from the QR Code populates Defender and provisions the APs and adapters.

### Related Links

- [Activation](#) on page 31

## Manual Onboarding

To manually provision an access point or adapter:

- 1 Go to **Activation** and select **Manual Onboarding**.
- 2 Configure the following parameters:

**Table 6: Settings for Manual Provisioning**

Field	Description
Serial Number	The serial number of the AP or adapter.
Model	Select from the list of supported device models.
Name	Unique name for the AP or adapter.
Description	Text description of the AP or adapter.

- 3 Click **Add Device**.

### Related Links

[Activation](#) on page 31

## Using a CSV File

Drag and drop a .csv file to automatically provision an AP or adapter.

- 1 Go to **Activation** and do one of the following:
  - Click on the **Browse CSV** image and navigate to the .csv file.
  - Drag and Drop a .csv file onto the **Browse CSV** image.
- 2 Navigate to the .csv file and click **Open**.

The information provided in the .csv file populates Defender and provisions the APs and adapters.

### .csv file format

Provide the .csv file in the following format. When using a spreadsheet, the following are the column headings of the spreadsheet.

```
serialNumber,hardwaretype,apName,description
1701Y-1248300023,AP3912i-FCC,TestAp,"description1"
1701Y-1248300024,AP3912i-FCC,TestAp1,"description2"
```



#### Note

Column values are separated by commas. To use commas within the description, use quotes around the full description.

### Related Links

[Activation](#) on page 31



# 7 Licensing

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Extreme Defender Application allows a specific number of protected device licenses. The **Licensing** page displays the following information:

- Maximum number of supported devices for the appliance model
- Total number of licenses
- Number of licenses currently used
- Number of available licenses.



#### Note

Extreme Defender Application offers a Demo license that supports up to 5 access points for demonstration purposes.

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From the **Licensing** workbench, apply the Extreme Defender Application license key.

- 1 Go to **Licensing**.
- 2 Enter one or more license keys in the **License Key** field and click **Apply**.

# 8 Preferences

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Customize the Extreme Defender Application from the **Preferences** workbench.

Go to **Preferences** and configure the following settings:

**Table 7: Defender Preference Settings**

Field	Description
Web Session Timeout	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).

Click  on any page to access the **Preferences** page.

# Glossary

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## Chalet

Chalet is a web-based user interface for setting up and viewing information about a switch, removing the need to enter common commands individually in the CLI.

## CLI

Command Line Interface. The CLI provides an environment to issue commands to monitor and manage switches and wireless appliances.

## Data Center Connect

DCC, formerly known as DCM (Data Center Manager), is a data center fabric management and automation tool that improves the efficiency of managing a large virtual and physical network. DCC provides an integrated view of the server, storage, and networking operations, removing the need to use multiple tools and management systems. DCC automates VM assignment, allocates appropriate network resources, and applies individual policies to various data objects in the switching fabric (reducing VM sprawl). Learn more about DCC at <http://www.extremenetworks.com/product/data-center-connect/>.

## Extreme Application Analytics

EAA, formerly Purview™, is a network powered application analytics and optimization solution that captures and analyzes context-based application traffic to deliver meaningful intelligence about applications, users, locations, and devices. EAA provides data to show how applications are being used. This can be used to better understand customer behavior on the network, identify the level of user engagement, and assure business application delivery to optimize the user experience. The software also provides visibility into network and application performance allowing IT to pinpoint and resolve performance issues in the infrastructure whether they are caused by the network, application, or server. Learn more about EAA at <http://www.extremenetworks.com/product/extremeanalytics/>.

## Extreme Management Center

Extreme Management Center (Management Center), formerly Netsight™, is a web-based control interface that provides centralized visibility into your network. Management Center reaches beyond ports, VLANs, and SSIDs and provides detailed control of individual users, applications, and protocols. When coupled with wireless and Identity & Access Management products, Management Center becomes the central location for monitoring and managing all the components in the infrastructure. Learn more about Management Center at <http://www.extremenetworks.com/product/management-center/>.

## ExtremeCloud Appliance

The ExtremeCloud Appliance, the newest addition to the Smart OmniEdge portfolio, is a next generation orchestration application offering all the mobility services required for modern unified access deployments. The ExtremeCloud Appliance extends the simplified workflows of the ExtremeCloud public cloud application to on-prem/private cloud deployments.

The ExtremeCloud Appliance includes comprehensive critical network services for wireless and wired connectivity, wireless device secure onboarding, distributed and centralized data paths, role-based access control through the Application Layer, integrated location services, and IoT device onboarding through a single platform.

Built on architecture with the latest technology, the embedded operating system supports application containers that enable future expansion of value added applications for the unified access edge. Learn more about ExtremeCloud Appliance at <https://www.extremenetworks.com/product/extremecloud-appliance/>.

### **ExtremeCloud**

ExtremeCloud is a cloud-based network management Software as a Service (SaaS) tool. ExtremeCloud allows you to manage users, wired and wireless devices, and applications on corporate and guest networks. You can control the user experience with smarter edges – including managing QoS, call admission control, secure access policies, rate limiting, multicast, filtering, and traffic forwarding, all from an intuitive web interface. Learn more about ExtremeCloud at <http://www.extremenetworks.com/product/extremecloud/>.

### **ExtremeControl**

ExtremeControl, formerly Extreme Access Control™ (EAC), is a set of management software tools that use information gathered by a hardware engine to control policy to all devices on the network. The software allows you to automate and secure access for all devices on the network from a central dashboard, making it easier to roll out security and identity policies across the wired and wireless network. Learn more about ExtremeControl at <https://www.extremenetworks.com/product/extremecontrol/>.

### **ExtremeSwitching**

ExtremeSwitching is the family of products comprising different switch types: **Modular** (X8 and 8000 series [formerly BlackDiamond] and S and K series switches); **Stackable** (X-series and A, B, C, and 7100 series switches); **Standalone** (SSA, X430, and D, 200, 800, and ISW series); and **Mobile Backhaul** (E4G). Learn more about ExtremeSwitching at <http://www.extremenetworks.com/products/switching-routing/>.

### **ExtremeWireless**

ExtremeWireless products and solutions offer high-density WiFi access, connecting your organization with employees, partners, and customers everywhere they go. The family of wireless products and solutions includes APs, wireless appliances, and software. Learn more about ExtremeWireless at <http://www.extremenetworks.com/products/wireless/>.

### **ExtremeXOS**

ExtremeXOS, a modular switch operating system, is designed from the ground up to meet the needs of large cloud and private data centers, service providers, converged enterprise edge networks, and everything in between. Based on a resilient architecture and protocols, ExtremeXOS supports network virtualization and standards-based SDN capabilities like VXLAN gateway, OpenFlow, and OpenStack Cloud orchestration. ExtremeXOS also supports comprehensive role-based policy. Learn more about ExtremeXOS at <http://www.extremenetworks.com/product/extremexos-network-operating-system/>.

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