

Edge Cache

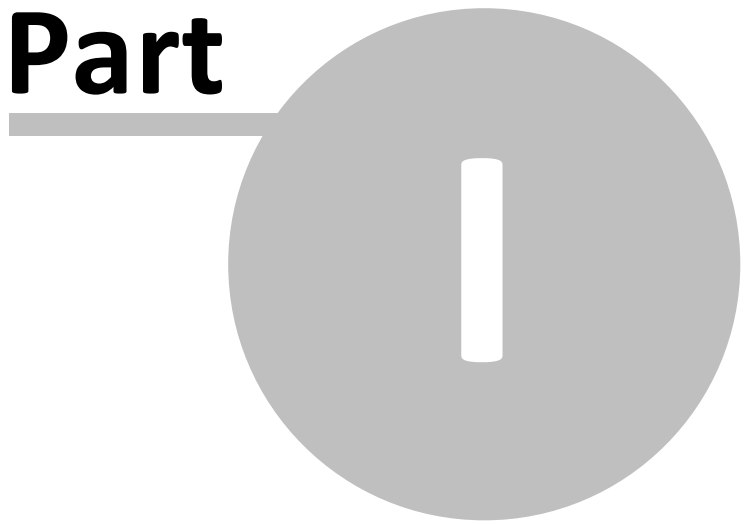
Exinda ExOS Version 6.3

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Part



1 Introduction

Edge Cache

Exinda Firmware Version: 6.3

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1.1 Using this Guide

Throughout the manual the following text styles are used to highlight important points:

- Useful features, hints and important issues are called "notes" and they are identified in a light blue background.

Note: This is a note.

- Practical examples are presented throughout the manual for deeper understanding of specific concepts. These are called "examples" and are identified with a light green background.

This is an example.

- Warnings that can cause damage to the device are included when necessary. These are indicated by the word "caution" and are highlighted in yellow.

Caution: This is a caution.

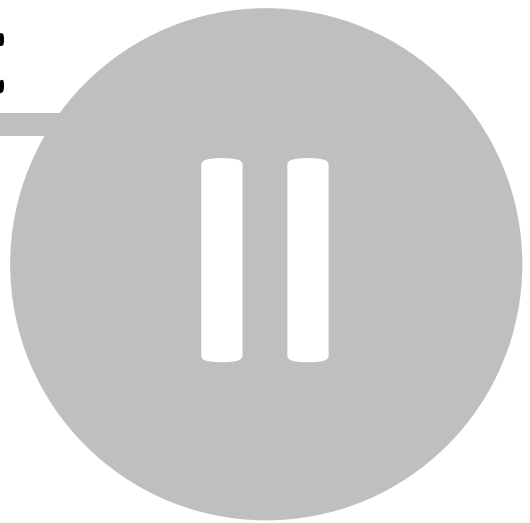
1.2 Further Reading

In addition to this How to Guide, the following relevant user documentation is available and should be read in conjunction with this guide:

- Exinda User Manual
- Exinda Topologies Guide

Please visit <http://www.exinda.com> for more information.

Part



2 Overview

Edge Cache provides acceleration of HTTP based applications by caching objects in memory and on disk. Edge Cache acceleration is single-sided - acceleration requires only one Exinda appliance.

There are 2 important requirements in order for Edge Cache to function correctly:

1. A gateway is required – this must be a gateway (firewall or internet router) on the WAN side of the Exinda appliance.
2. A valid DNS server is required.

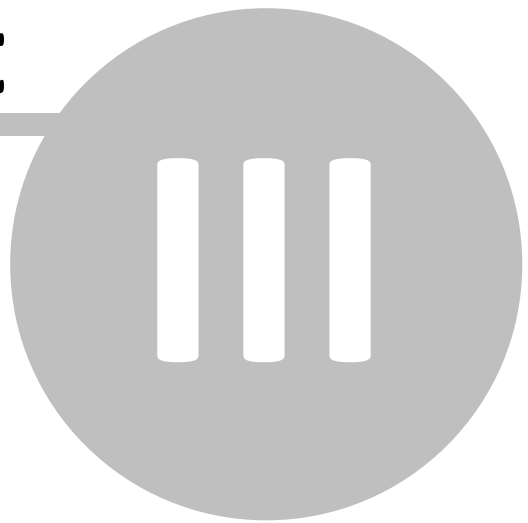
Edge Cache is a fully transparent solution, however, these requirements must be met in order for Edge Cache to function correctly.

Note: The Edge Cache Acceleration feature is a separately licensed component. You can check if your license supports this feature by navigating to System | Setup | License.

Licensed	Host ID	Model	SS Expiry
<input checked="" type="checkbox"/>	002219d48dc4	Exinda 4860 20Mbps	Jun 19, 2012
		Max Bandwidth: 20480 kbps	
		Optimizer: <input checked="" type="checkbox"/>	
		Max AA Bandwidth: 20480 kbps	
		Max Connections: 384000	
		Max Connection Rate: 300 / sec	
		Max AA Connections: 1500	
		Max PDF Reports: 12	
		Max SLA Objects: 120	
		Max APS Objects: 150	
		Max Policies: 384	
		SSL Acceleration: <input checked="" type="checkbox"/>	
		Virtualization: <input checked="" type="checkbox"/>	
		Edge Cache: <input checked="" type="checkbox"/>	

Figure 1: License with Edge Cache enabled.

Part



3 Configuration

[Optimizer and Policy](#) settings.

[Edge Cache Settings](#) settings.

3.1 Optimizer and Policy Settings

Edge Cache works on outbound, HTTP based conversations. To enable Edge Cache, create a policy with an application or application group that will capture the HTTP application traffic that you wish to cache.

Navigate to Optimizer | Policies. Set the required bandwidth parameters, enable Acceleration and choose Edge Cache from the Acceleration options dropdown. Select HTTP from the application dropdown or any other HTTP based custom application.

Policies define the traffic to match as well as the action to take on that traffic.

Policy Name:

Schedule:

Action:

Policy Enabled:

Edit Policy

Guaranteed Bandwidth: %

Burst (Max) Bandwidth: %

Burst Priority:

Acceleration:

Packet Marking

VLAN	Host	Direction	Host	ToS/DSCP	Application
<input type="button" value="ALL"/>	<input type="button" value="ALL"/>	<input type="button" value="< - >"/>	<input type="button" value="ALL"/>	<input type="button" value="ALL"/>	<input type="button" value="HTTP"/>
<input type="button" value="v"/>	<input type="button" value="v"/>	<input type="button" value="< - >"/>	<input type="button" value="v"/>	<input type="button" value="v"/>	<input type="button" value="v"/>
<input type="button" value="v"/>	<input type="button" value="v"/>	<input type="button" value="< - >"/>	<input type="button" value="v"/>	<input type="button" value="v"/>	<input type="button" value="v"/>
<input type="button" value="v"/>	<input type="button" value="v"/>	<input type="button" value="< - >"/>	<input type="button" value="v"/>	<input type="button" value="v"/>	<input type="button" value="v"/>
<input type="button" value="v"/>	<input type="button" value="v"/>	<input type="button" value="< - >"/>	<input type="button" value="v"/>	<input type="button" value="v"/>	<input type="button" value="v"/>

NOTE: Filters cannot be deleted from this page. Please go to the [Optimizer|Policies](#) to delete filters.

Figure 2: Edge Cache Policy

On the Optimizer page, add the policy created above to an **outbound** Virtual Circuit. In the example below, Web_Cache is an Edge Cache enabled policy added to a Virtual Circuit for Internet outbound traffic.

Virtual Circuit 25 - Internet outbound (2500 kbps to 'ALL')		
<input checked="" type="checkbox"/>	<input type="text" value="1"/>	Block-AP (Optimize 128 kbps - 2048 kbps, Priority 1)
<input checked="" type="checkbox"/>	<input type="text" value="2"/>	Ignore 240 (Ignore)
<input checked="" type="checkbox"/>	<input type="text" value="5"/>	Web_Cache (Optimize 5% - 100%, Priority 1, Edge Cache)
<input checked="" type="checkbox"/>	<input type="text" value="10"/>	P2P (Optimize 16 kbps - 32 kbps, Priority 10)
<input checked="" type="checkbox"/>	<input type="text" value="20"/>	Recreational - Limit Low 2%-100% (Optimize 2% - 100%, Priority 10)
<input checked="" type="checkbox"/>	<input type="text" value="30"/>	Software Updates - Limit Med 3%-50% (Optimize 3% - 50%, Priority 9)
<input checked="" type="checkbox"/>	<input type="text" value="40"/>	Voice - Guarantee Critical 15%-100% (Optimize 15% - 100%, Priority 1)
<input checked="" type="checkbox"/>	<input type="text" value="50"/>	Thin Client - Guarantee High 10%-100% (Optimize 10% - 100%, Priority 3)
<input checked="" type="checkbox"/>	<input type="text" value="60"/>	Files - Guarantee Med 8%-100% (Optimize 8% - 100%, Priority 5)
<input checked="" type="checkbox"/>	<input type="text" value="65"/>	Yousendit (Optimize 1% - 10%, Priority 8)
<input checked="" type="checkbox"/>	<input type="text" value="70"/>	Web - Guarantee High 10%-100% (Optimize 10% - 100%, Priority 3)
<input checked="" type="checkbox"/>	<input type="text" value="80"/>	Mail - Guarantee Med 8%-100% (Optimize 8% - 100%, Priority 5)
<input checked="" type="checkbox"/>	<input type="text" value="200"/>	ALL (Optimize)
Order:	<input type="text" value=""/>	Policy: <input type="text" value="ALL"/> <input type="button" value="Add To 'Internet outbound'"/>

Figure 3: Outbound Virtual Circuit including an Edge Cache enabled Policy

3.2 Edge Cache Settings

To configure Edge Cache settings, navigate to System | Acceleration | Edge Cache

Edge Cache will only store objects within configured limits. Use the form below to change the default minimum and maximum object sizes.

The connection timeout setting is the maximum time Edge Cache will wait for a response from the WAN when fetching objects. You may need to increase this if connection timeouts are occurring regularly. Browsers typically return a message similar to the following when this occurs:

```
(110) Connection timed out
```

Memory Object Options	
Min Object Size	<input type="text" value="0"/> kB
Max Object Size	<input type="text" value="51200"/> kB
Connection Timeout	<input type="text" value="20"/> seconds
<input type="button" value="Apply Changes"/>	

Figure 4: Edge Cache settings

The form below allows a blacklist of URL's or domains to be specified. Requests from these sites will never be cached.

URL	Delete
Add URL/Domain	
URL	<input type="text"/>
<input type="button" value="Add URL"/>	

Use the Clear button to remove all objects from the cache.

To see the current and maximum cache sizes, use the following CLI command:

```
show storage service edge-cache
```

3.2.1 Peering

Exinda appliances with Edge Cache can establish a community of peers in order to share objects between caches. Currently configured peers are shown in the table below. Click on the "Add New Peer Command" to add a new peer Exinda.

Host Name	Type	HTTP Port	ICP Port	Edit	Delete
exinda-hq	parent	80	3130	<input type="button" value="Edit"/>	<input type="button" value="Delete"/>

Figure 5: Edge Cache Peers

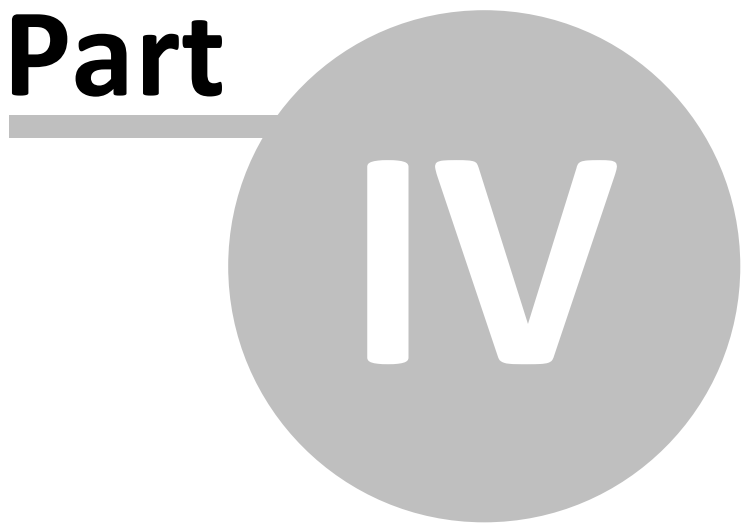
Use the form below to add a new peer or edit an existing peer

Add New Peer	
Host Name:	<input type="text"/>
Relationship:	<input type="text" value="parent"/>
HTTP Port:	<input type="text" value="80"/>
ICP Port:	<input type="text" value="3130"/>

Figure 6: Add new Edge Cache Peer

Host Name	The hostname of the peer
Relationship	Peer relationship. Only Parent is supported at present.
HTTP Port	The peer HTTP port
ICP Port	The peer ICP port

Part

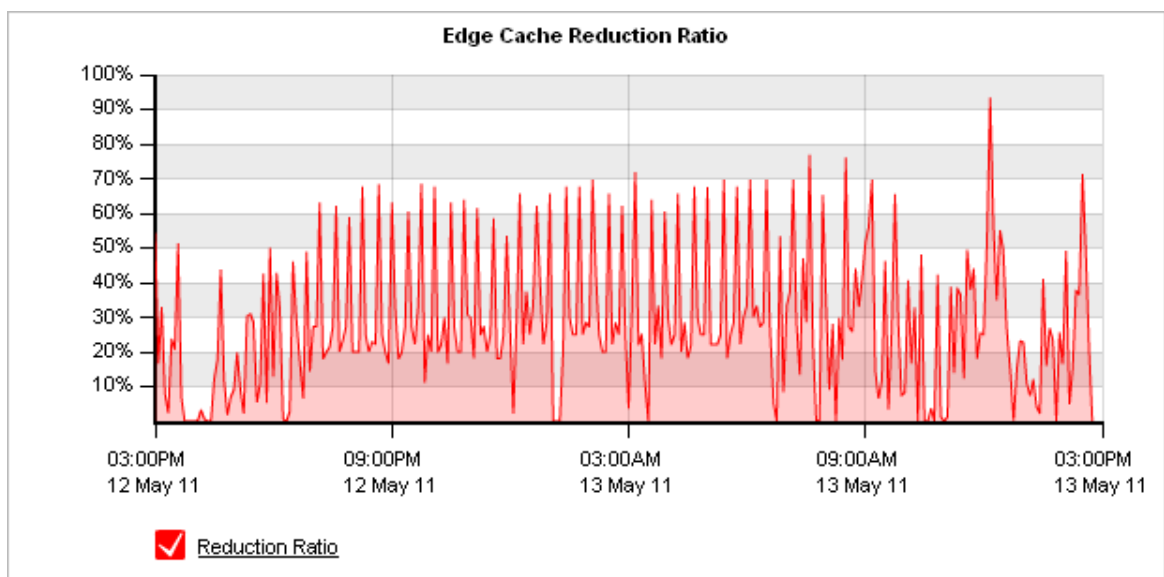
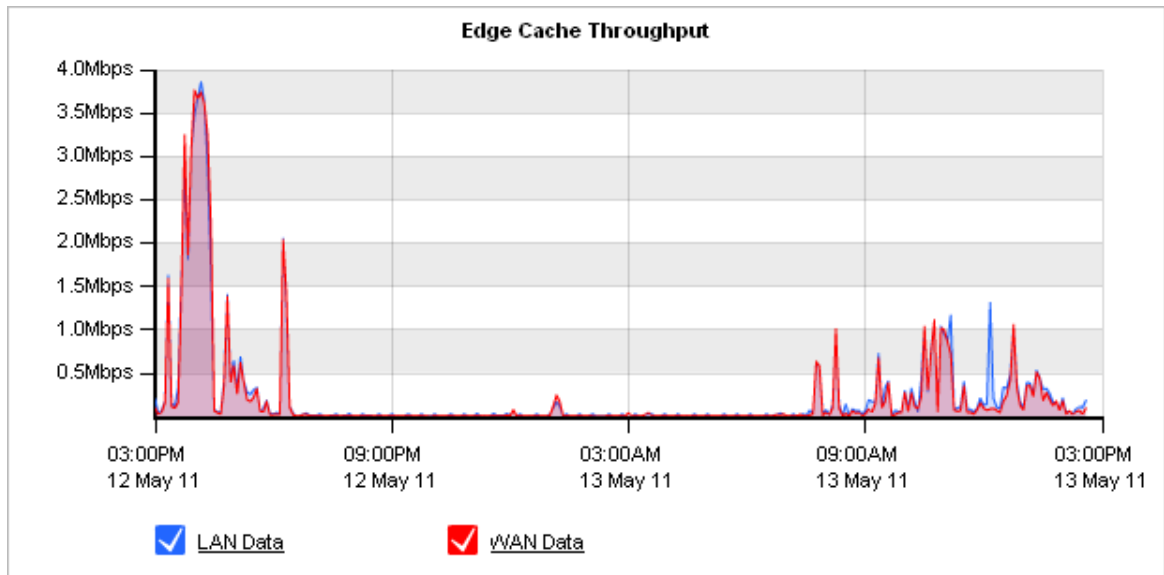


IV

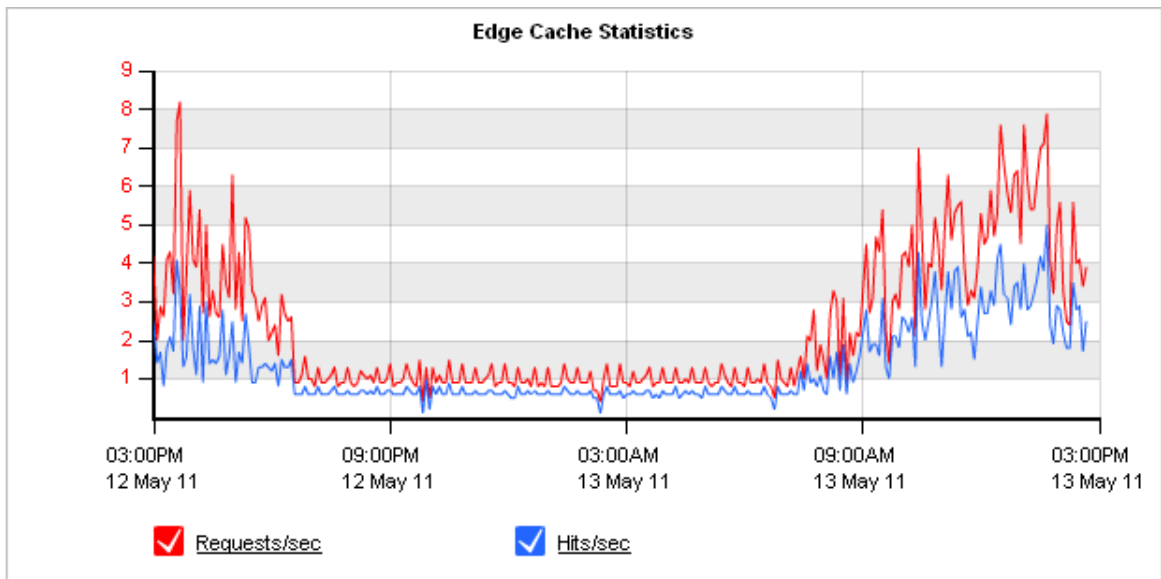
4 Viewing Statistics

To view Edge Cache statistics, navigate to Monitor | Acceleration | Edge Cache.

There are two graph types available for throughput. 1. LAN and WAN shown as separate series and 2. The ratio of WAN to LAN throughput as a percentage.



The graph below shows the number of requests per second and the number of "hits" per second. A hit occurs when a request is made for an object stored in the Edge cache memory.



The table below shows a summary of Edge Cache statistics for the selected time period.

LAN (MB)	WAN (MB)	Reduction Ratio (%)	Requests	Hits	Hit Ratio (%)
2520.97	2324.41	<div style="width: 7.80%; background-color: #808000; border: 1px solid black;"></div> 7.80	198840	113850	<div style="width: 57.26%; background-color: #008000; border: 1px solid black;"></div> 57.26