Dynamic Disk Partitioning

Exinda ExOS Version 6.3

Table of Contents

Part

1 Introduction

Dynamic Disk Partitioning

Exinda Firmware Version: 6.3

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 CLI Reference Guide (**storage** commands)

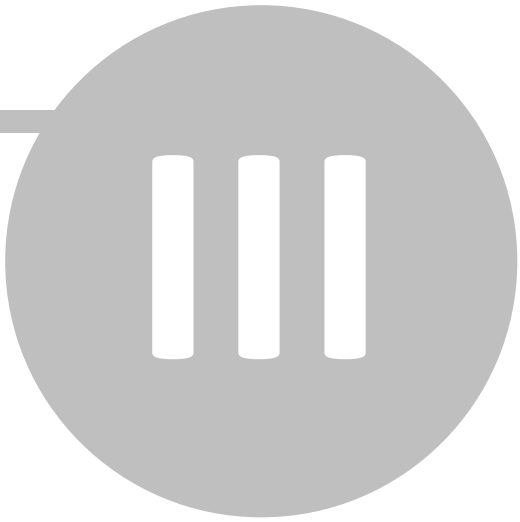
Please visit http://www.exinda.com for more information.

Part II

2 Overview

Starting with firmware version 6.1, the Exinda appliance has the capability to dynamically change the amount of storage allocated to system services. Users can resize and reallocate disk space as required.

Part



3 Configuring Storage with the CLI

The formula used to allocate a default storage size for each system service is shown in the table below, together with some examples for different platforms.

Formula: HDD size: M GB, X GiB[1] Base OS: 14GiB Data Storage: X – 14 By default, the data storage is divided up as follows: CIFS: 15% Monitor: 10GiB User DB: 1GiB Virt: 50GiB (not available on 2060) WM: 70% Edge Cache: 15%	**2060:** HDD size: 160GB (149GiB) Base OS: 14GiB Data Storage: 149 – 14 = 135GiB CIFS: 15% = 19GiB Monitor: 10GiB User DB: 1GiB Virt: 0GB (does not support virt) WM: 70% = 86GiB Edge Cache: 15% = 19GiB	**4061:** HDD size: 250GB (233GiB) Base OS: 14GiB Data Storage: 233 – 14 = 219GiB CIFS: 15% = 24GiB Monitor: 10GiB User DB: 1GiB Virt: 50GiB (supports virt) WM: 70% = 110GiB Edge Cache: 15% = 24GiB
6060: HDD size: 500GB (466GiB) Base OS: 14GiB Data Storage: 466 – 14 = 452GiB CIFS: 15% = 58GiB Monitor: 10GiB User DB: 1GiB Virt: 50GiB (supports virt) WM: 70% = 270GiB Edge Cache: 15% = 58GiB	**8060:** HDD size: 1500GB (1396GiB) Base OS: 14GiB Data Storage: 1396 – 14 = 1382GiB CIFS: 15% = 198GiB Monitor: 10GiB User DB: 1GiB Virt: 50GiB (supports virt) WM: 70% = 920GiB Edge Cache: 15% = 198GiB	**10060:** HDD size: 1500GB (1396GiB) Base OS: 14GiB Data Storage: 1396 – 14 = 1382GiB CIFS: 15% = 198GiB Monitor: 10GiB User DB: 1GiB Virt: 50GiB (supports virt) WM: 70% = 920GiB Edge Cache: 15% = 198GiB

Table 1: Default storage sizes

Fixed amounts (e.g. Monitor, User DB, Virt) are allocated first, then the percentages are used to distribute the remainder.

To change amount of storage allocated to system services, use the CLI 'storage' command.

Example: A 4061 is to be used for Control, Monitoring and Edge Cache only. Redistribute the default storage allocated for Virt, CIFS and WM to the Monitor and Edge Cache services.

To show the amount of storage allocated to each service, use the 'show storage' CLI command:

```
(config) # show storage
Services:
   cifs: available - 23.17G free of 23.71G total
   edge-cache: available - 23.16G free of 23.7G total
   monitor: available - 9898.96M free of 10G total
   users: available - 974.62M free of 1024M total
   virt: available - 49.04G free of 50G total
   wan-memory: available - 108.69G free of 110.61G total
```

```
Disks:

Total: 219.02G
Unallocated: 0
```

To redistribute the Virt, CIFS and WM storage, first shrink the amount of storage allocated to these services to the minimum. The minimum size for each service is shown in the table below:

Service	Minimum Size
cifs	1 GiB
edge-cache	1 GiB
monitor	5 GiB or current usage, whichever is larger.
users	500 MiB or current usage, whichever is larger
virt	500 MiB or current usage, whichever is larger
wan-memory	5 GiB

Table 2: Minimum service sizes

To resize a storage service, use the 'storage service <svc> size' command. Use the 'show storage tasks' command to check the commands progress:

```
(config) # storage service virt size 500M
(config) # show storage tasks
Storage tasks:
   Resize virt to 500M: executing
(config) # show storage tasks
No pending tasks
```

Similarly resize the storage for wan-memory and cifs services:

```
(config) # storage service cifs 1G
(config) # storage service wan-memory 5G

(config) # show storage
Services:
   cifs: available - 859.91M free of 1024M total
   edge-cache: available - 23.16G free of 23.7G total
   monitor: available - 9890.97M free of 10G total
   users: available - 974.62M free of 1024M total
   virt: available - 351.91M free of 500M total
   wan-memory: available - 4879.63M free of 5120M total

Disks:

Total:       219.02G
Unallocated: 177.83G
```

There is now 177.83G of storage which can be allocated to the edge-cache and monitor services. We will increase the monitor space by 40G to 50G and use the remaining space (approx. 137G) to increase edge-cache to 160G.

```
(config) # storage service monitor size 50G
(config) # show storage service monitor
Service: monitor
   Status: growing
   Free:   45.58G
   Size:   50G
```

Note: The status field is shown as 'growing' whilst the resize operation is in progress. When the operation is complete, the status will change to 'available'.

```
(config) # storage service edge-cache size 160G
```

Finally, use the 'show storage' command to see the redistributed storage sizes:

```
(config) # show storage
Services:
   cifs: available - 859.91M free of 1024M total
   edge-cache: available - 157.31G free of 160G total
   monitor: available - 49.02G free of 50G total
   users: available - 974.62M free of 1024M total
   virt: available - 351.91M free of 500M total
   wan-memory: available - 4879.63M free of 5120M total

Disks:

Total:       219.02G
Unallocated: 1564M
```

[1] HDD manufacturers label storage capacity using a base 10 convention, where 1GB = 1,000,000,000 bytes. On the Exinda appliance storage sizes are represented in GiB, where 1 GiB = 1,073,741,824 bytes. So the actual storage of a hard disk, when represented in GiB, is less than what is labelled.

Part IV

4 Configuring Storage with the WUI

To configure storage, navigate to 'System | Setup | Storage'.

Example: A 4061 is to be used for Control, Monitoring and Edge Cache only. Redistribute the default storage allocated for Virt, CIFS and WM to the Monitor and Edge Cache services.

Storage Configuration

Service	Status	Free		Size	Minimum	Operation	
cifs	available	10.81G	97%	11.13G	1024.00M	Resize	Format
edge-cache	available	10.79G	97%	11.13G	1024.00M	Resize	Format
monitor	available	9660.81M	94%	10.00G	5120.00M	Resize	Format
users	available	974.62M	95%	1024.00M	512.00M	Resize	Format
virt	available	49.04G	98%	50.00G	512.00M	Resize	Format
wan-memory	available	50.94G	98%	51.93G	5120.00M	Resize	Format
unallocated storage				0.00			
Total Available Storage:				**135.20G**			

Shrink the storage for virt to the minimum. Enter the minimum value for the service in the Size field and click 'Resize'. The status will change from 'available' to 'shrinking'. When the operation is complete the status will return to 'available'.

Similarly shrink the storage for wan-memory and cifs services.

Storage Configuration

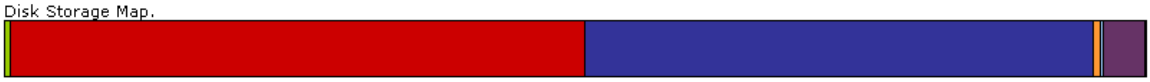
Service	Status	Free		Size	Minimum	Operation	
cifs	available	866.12M	85%	1024.00M	1024.00M	Resize	Format
edge-cache	available	10.79G	97%	11.13G	1024.00M	Resize	Format
monitor	available	9660.81M	94%	10.00G	5120.00M	Resize	Format
users	available	974.62M	95%	1024.00M	512.00M	Resize	Format
virt	available	363.91M	71%	512.00M	512.00M	Resize	Format
wan-memory	available	4879.61M	95%	5120.00M	5120.00M	Resize	Format
unallocated storage				106.57G			
Total Available Storage:				**135.20G**			

There is now 106.57G of unallocated space available. We will distribute 50G to the monitor service, and the remaining amount to edge-cache. Enter the new values into the 'Size' fields and click 'Resize'.

Note: you can enter Size values as a percentage of remaining space. In this example, after changing the monitor service, we can enter '100%' in the Size field for the edge-cache service.

The Status field will change from 'available' to 'growing'. When the operation is complete the Status will return to 'available'.

Disk Storage Map.



Storage Configuration

Service	Status	Free		Size	Minimum	Operation	
cifs	available	866.13M	85%	1024.00M	1024.00M	Resize	Format
edge-cache	available	66.47G	98%	67.70G	1024.00M	Resize	Format
monitor	available	58.64G	98%	60.00G	5120.00M	Resize	Format
users	available	974.62M	95%	1024.00M	512.00M	Resize	Format
virt	available	363.91M	71%	512.00M	512.00M	Resize	Format
wan-memory	available	4879.61M	95%	5120.00M	5120.00M	Resize	Format
unallocated storage				0.00			
Total Available Storage:				**135.20G**			