



EXAScaler ZenPack

Installation Guide

Version 0.0.7 | 96-30076-001 | Rev. A0

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This document provides information about the DDN EXAScaler ZenPack. Installation instructions are given at the end of the document.

1. Overview

This ZenPack is developed by DDN to provide modeling and monitoring functionality for DDN's EXAScaler storage solution.

2. Releases

Version:	0.0.7
Summary of changes:	First release
Released on:	March 04, 2015
Compatible with:	Zenoss 4 and Zenoss 5

3. Prerequisites

- This ZenPack only works on EXAScaler version 1.6 and above, since it uses DDN EXAScaler apis for collecting metrics on each cluster node.
- This ZenPack has a dependency on custom script `get_lustre_config.py`. This should be placed in the path `/cm/shared/ddn/dm/exascaler/get_lustre_config.py` for ZenPack to model properly. The `get_lustre_config.py` file is available in the `src` folder.

4. Installed Items

Installing this ZenPack will add the following items to your Zenoss system.

4.1 Device Classes

The following device classes will be created once this ZenPack is installed:

- `/Storage`
- `/Storage/DDN`
- `/Storage/DDN/Exascaler`

4.2 Configuration Properties

The following configuration properties will be added which are required for this ZenPack:

- **zCommandUsername**
This is the name of the user through which Zenoss system communicates with the device (for example, root).
- **zCommandPassword**
The password of that particular user through which Zenoss system communicates with the device (for example, root).
- **zKeyPath**
If password-less SSH is configured, provide the full path for private key file (for example, `~/.ssh/id_rsa`).

5. Modeler Plug-ins

List of modeler plug-ins for EXAScaler:

- `ddn.ModelExaScaler`

6. Monitoring Templates

This defines the metrics, events, and thresholds for modeled components:

6.1 Component Level

1. `MetaDataServer`
 - ❖ `Close`
 - ❖ `Getattr`
 - ❖ `Link`
 - ❖ `MetaOps`
 - ❖ `Mkdir`
 - ❖ `Mknod`
 - ❖ `Open`
 - ❖ `Rename`
 - ❖ `ReqActive`
 - ❖ `ReqQdepth`
 - ❖ `ReqWaittime`
 - ❖ `Rmdir`
 - ❖ `Setattr`
 - ❖ `Statfs`
 - ❖ `Unlink`
2. `ObjectStorageServer`
 - ❖ `Create`
 - ❖ `Destroy`
 - ❖ `ReadBytes`
 - ❖ `Statfs`
 - ❖ `WriteBytes`

6.2 Graphs at Component Level

1. `MetaDataServer`
 - ❖ `MetaOps`
2. `ObjectStorageServer`
 - ❖ `IO`
 - ❖ `MetaOps`

6.3 Events at Component Level

1. MetaDataServer

- ❖ Events for metadata server will be triggered when the metadata server status is not in PASS state.

2. ObjectStorageServer

- ❖ Events for object storage server will be triggered when the object storage server status is not in PASS state.

6.4 Events Classes

- /Perf

6.5 Thresholds

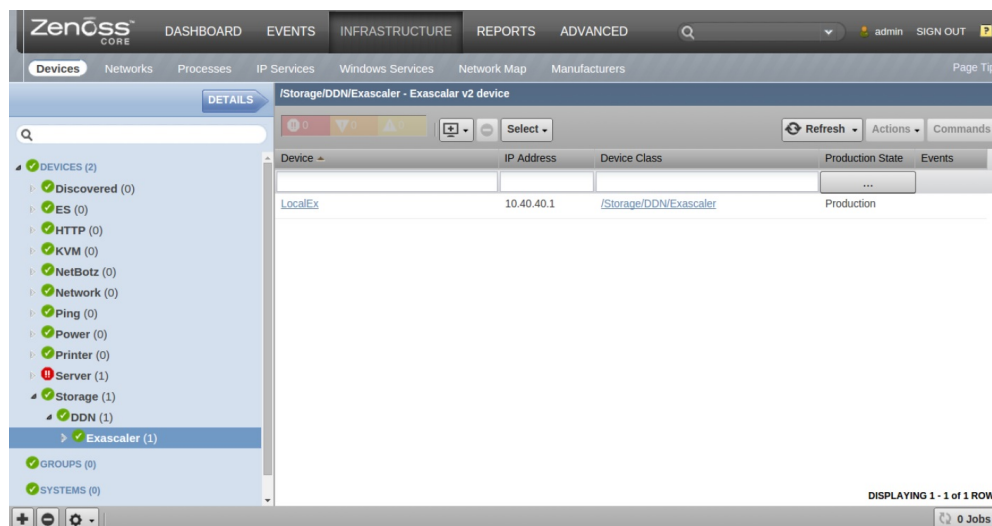
No Thresholds are defined.

7. Detailed Overview

7.1 Device Classes

Figure 1 shows the list of device classes that are available in this ZenPack.

Figure 1. List of Available Device Class

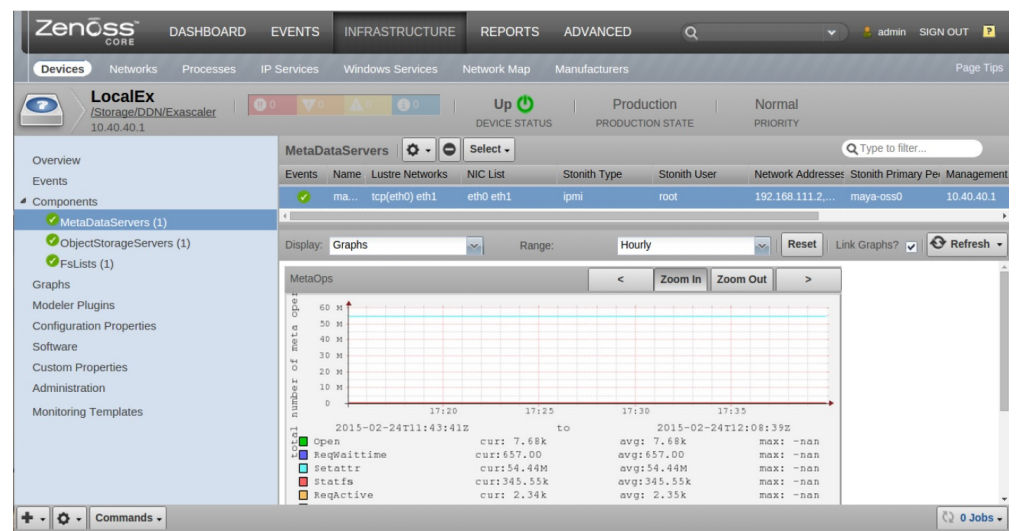


7.2 Device Components

7.2.1 Metadata Servers

Figure 2 shows the EXAScaler metadata server screen.

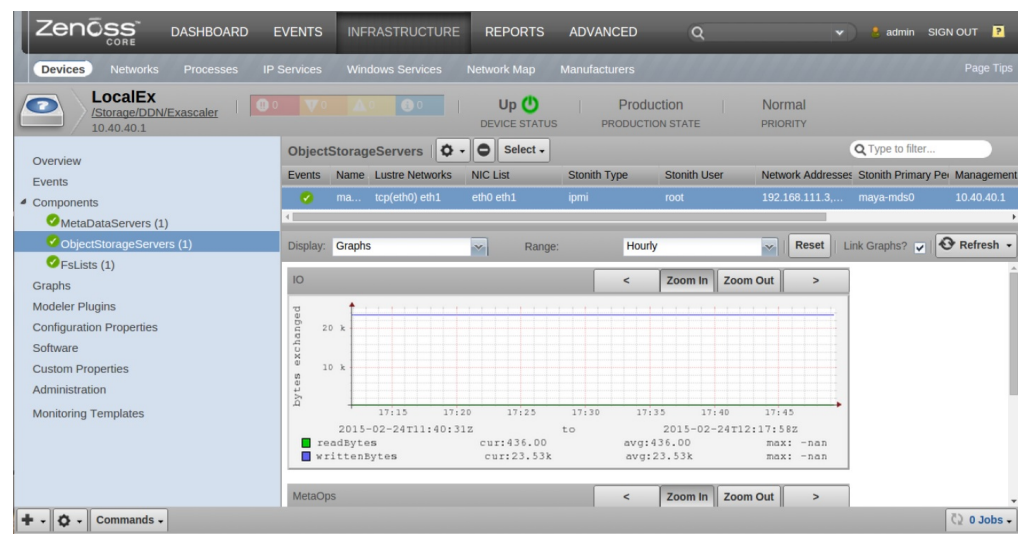
Figure 2. List of EXAScaler Metadata Server



7.2.2 ObjectStorage Servers

Figure 3 shows the EXAScaler object storage server screen.

Figure 3. List of EXAScaler ObjectStorage Server

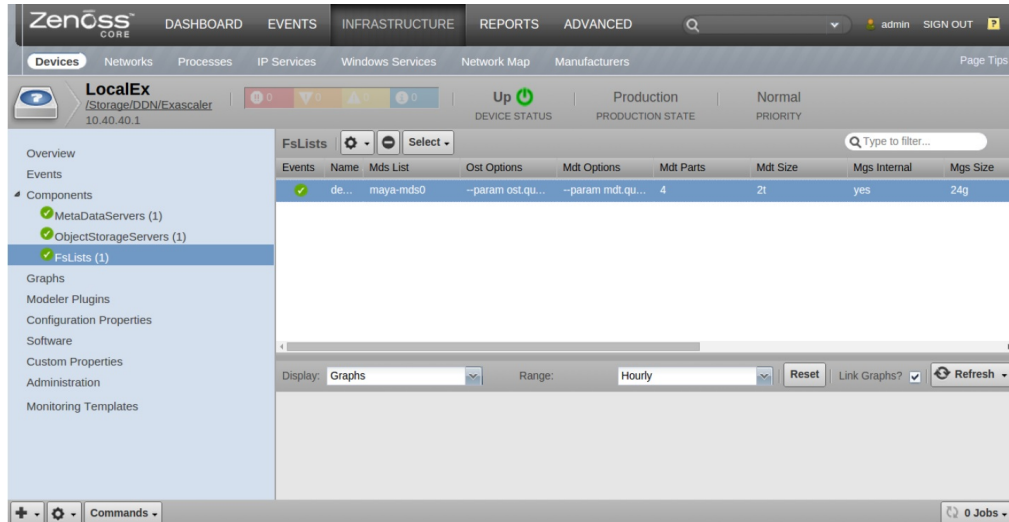


7.2.3

FsLists

Figure 4 shows the EXAScaler FsLists screen.

Figure 4. List of EXAScaler FsList



8. ZenPack Installation

Follow these steps to install DDN EXAScaler ZenPack:

1. Download the appropriate .egg file for the version of the Zenoss you are running.
2. Ensure that you are logged in as Zenoss user.
su zenoss
3. Install ZenPack:
 - ❖ Zenoss 4
zenpack --install ZenPacks.DDN.Exascaler-*-.egg
 - ❖ Zenoss 5
sudo serviced service run zenpack install ZenPacks.DDN.Exascaler-*-.egg
4. Restart Zenoss:
 - ❖ Zenoss 4
zenoss restart
 - ❖ Zenoss 5
sudo serviced service stop service-name
(Get the service name by running command “**sudo serviced service status**”)
sudo serviced service start service-name

8.1 Listing All Installed ZenPacks

Use the following commands to list all installed ZenPacks:

- Zenoss 4
`zenpack list`
- Zenoss 5
`sudo serviced service run zope zenpack list`

8.2 Steps to Uninstall ZenPacks

Use the following commands if you need to uninstall ZenPacks:

- Zenoss 4
`zenpack remove zenpack-name`
- Zenoss 5
`sudo serviced service run zope zenpack uninstall zenpack-name`

9. Modeling EXAScaler through Zenoss

Since an EXAScaler solution is a cluster of devices, it cannot be modeled and monitored directly like other devices. This ZenPack expects a pseudo network device to be created locally. This pseudo network device will be used to register the cluster. Two **zProperties** (**zESMdsNodes** and **zESOssNodes**) are defined to map the network address of MetaData Server and ObjectStorage Server in the cluster.

Follow these instructions to model an EXAScaler solution through Zenoss:

1. Create a pseudo network device. For example:

```
sudo ip link add link em1 address 44:44:44:44:44:44 em1:10 type macvlan
sudo ifconfig em1:10 10.1.1.4 netmask 255.255.224.0
```

NOTE: Change the IP and MAC addresses accordingly for your network environment.

2. Create a device using this newly created IP (10.1.1.4 in the above example).
3. Update the **zProperty** accordingly before modeling.

For example, if you have two MetaData Servers reachable at addresses IP1 and IP2 (management interfaces) and two ObjectStorage Servers reachable at addresses IP3 and IP4 (management interfaces), provide all those IP addresses on the **zProperty** (**zESMdsNodes** and **zESOssNodes**) that will be used for device modeling.

