

# Infront EMC Isilon

Management Pack Guide

MP Version: 2.0.0.53

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All management packs should be thoroughly tested before being introduced into a production Operations Manager environment. The authors of this management pack accept no responsibility or liability for negative impact as a result of use of this management pack in your Operations Manager environment.

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# **EMC Isilon Management Pack Features (Summary)**

**Infront EMC Isilon** Management Pack is featuring discovery and monitoring for EMC Isilon OneFS NAS cluster components:

#### Discoveries

- Isilon OneFS Cluster
- Isilon OneFS Cluster Node
- Memory (RAM and NVRAM)
- Processors
- InfiniBand Adapters
- Disk Controllers
- Power Supplies
- Disks
- Shares

#### Monitoring

- Disk Health
- Share Health
- Cluster Node Health
- Cluster Health
- Cluster Node Events (warning, critical, emergency)
- Cluster Node Jobs
- Web Interfaces Availability
- Cluster Node Capacity below threshold
- Cluster Node Performance Counters collection
  - o Processor Used (%)
  - o Capacity Available (%)
  - o Capacity Used (%)
  - o Capacity Total
  - o DiskIn (Ops/s)
  - o DiskOut (Ops/s)
  - o NetIn (Pkt/s)
  - NetOut (Pkt/s)
  - o File Share Protocol Total (Ops/s)
  - o File Share Protocol (SMB, HTTP, FTP, NFS, ISCSI, HDFS) (Ops/s)
- Disk Performance Counters collection
  - o Busy (%)
  - o BytesIn (B/s)
  - o BytesOut (B/s)
  - o Inodes
  - o OpsIn (N/s)
  - o OpsOut (N/s)
  - o Queued
  - o SizeIn (B)
  - SizeOut (B)
  - o Slow (N/s)
  - o TimeAvg (ms)
  - o TimeInQ (ms)
  - o Used (%)
- Tasks

- o List Events (using local DB) per Cluster Node V7
- o List Events (using master DB) per Cluster Node V7
- o List Events per Cluster Node V8
- o List Running Jobs per Cluster Node
- o List Failed Jobs per Cluster Node
- o Show All HW Monitored Items Status
- o View Storage Pools

#### **Document Version**

This guide was written based on version 2.0.0.53 of the Infront EMC Isilon Management Pack.

#### **Revision History**

Release Date	Changes
September 2017	MP Version 2.0.0.41
September 2018	MP Version 2.0.0.45
March 2018	MP Version 2.0.0.53
June 2018	Added New Pre-Requisites for MP Version 2.0.0.53

### Getting the Latest Management Pack and Documentation

You can find the **Infront EMC Isilon** Management Pack at <a href="http://www.infrontconsulting.com/software.php">http://www.infrontconsulting.com/software.php</a>.

#### Known Issues in this Release

There are no known issues with the **Infront EMC Isilon** Management Pack.

### **Supported Configurations**

The Infront EMC Isilon Management Pack is designed and tested to work with:

- System Center Operations Manager 2012 SP1 or R2;
- Isilon OneFS 7.0 or later;
- SNMP v1/2 and V3 for discovering Isilon OneFS Cluster Nodes

## Files in This Management Pack

The Infront EMC Isilon Management Pack consists of the following files:

File	Version	Description
EMCIsilonMP.msi	2.0.0.53	The downloadable installer
EMC.Isilon.mp	2.0.0.53	The sealed management pack file (installed by the msi)
EMCIsilonMP.pdf	2.0.0.53	Management Pack documentation (installed by the msi)

# Before importing the Management Pack

#### **Pre-Requisites**

You must update the following Modules and PowerShell Version:

PowerShell Version 5.1.14409.1012
 https://www.microsoft.com/en-us/download/details.aspx?id=54616
 Download the file: Win8.1AndW2K12R2-KB3191564-x64.msu

2. Install NuGet Minimum Version 2.8.5.210

Install-PackageProvider -Name NuGet -MinimumVersion 2.8.5.201 -Confirm:\$False
-Force -Scope AllUsers

3. Install Posh-SSH Minimum Version 2.0.2

Install-module Posh-SSH -Scope AllUsers -Confirm:\$False -Force

4. Install PowerShellGet 2.0.0

Install-Module -Name PowerShellGet -MinimumVersion 2.0.2 -Confirm: \$False -Force - Scope AllUsers

### Create a New Management Pack for Customizations

The Infront EMC Isilon Management Pack is sealed. None of the original settings in the management pack file can be changed. However, customizations, such as overrides or new monitoring objects, may be created by saving them to a different management pack (suggested MP name: Infront.EMC.Isilon.Overrides)

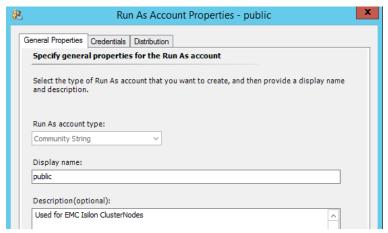
#### Import the Infront EMC Isilon Management Pack

Execute the Management Pack Installer and then follow the normal procedure to import the **Infront EMC Isilon** Management Pack.

# After importing the Management Pack

#### Add the SNMP Community String Account

- 1. In the SCOM Console, click on the Administration tab
- 2. Create a **Community String account** to be used by the Management Pack SNMP workflows (example below)

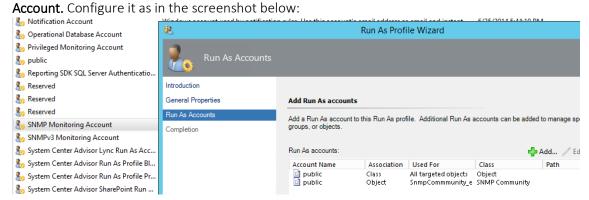


**Note.** Credentials must match the accepted community name in the SNMP configuration of the EMC Isilon ClusterNodes.

3. Make sure you distribute the account to the HealthService on the Management Servers.

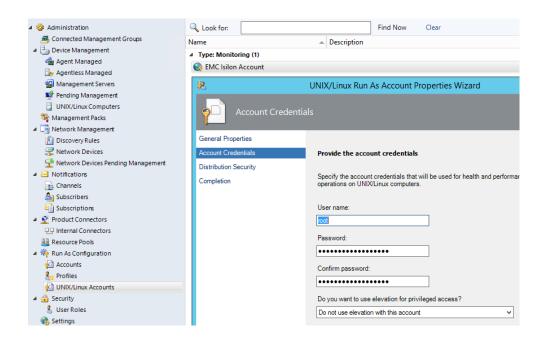


4. Add the account to the Run As Profile Click on "Profiles" under "Run As Configuration" and locate the **SNMP Monitoring** 

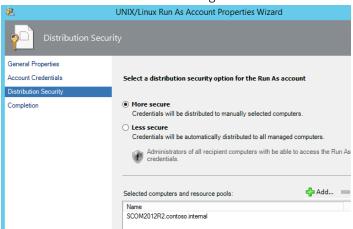


#### Add the EMC Isilon Account

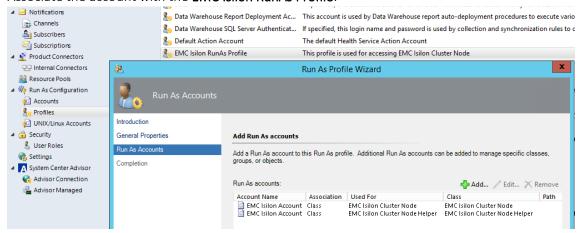
- 1. In the SCOM Console, click on the Administration tab
- 2. Under Run As Configuration, UNIX/Linux Accounts create a monitoring account that matches the credentials to access the OneFS CLI.



3. Distribute the account to the Management Servers.

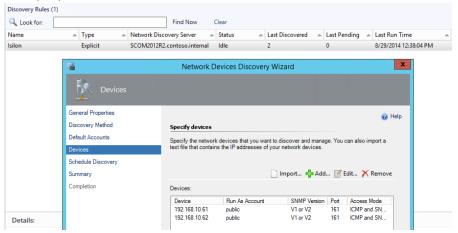


4. Associate the account with the EMC Isilon RunAs Profile.

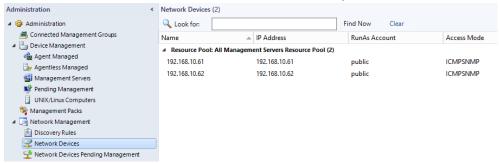


Discovering the Isilon Cluster Nodes

- In the SCOM OpsMgr Console, click on the Administration / Network Management / Discovery Rules
- 2. Enter a new or edit an existing discovery rule to discover the Isilon Cluster Nodes; example provided below:



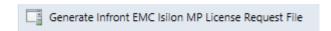
- 3. Save and run the discovery.
- 4. Check that the Isilon Cluster Nodes have been successfully discovered



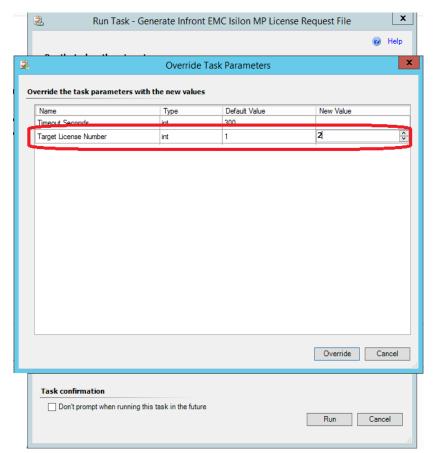
# Licensing the Management Pack

In this version of the Management Pack there is a new console task available from the Network Library Nodes entities, you can choose it going to the Discovery Inventory and changing the target type to "Node" from the Network Library MP, to be executed.

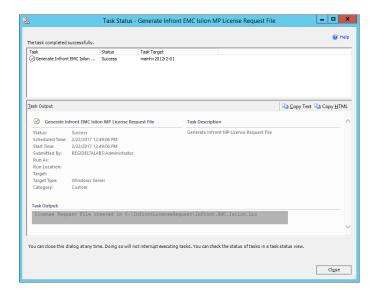
NOTE: If you already got the license key you don't need to run this task



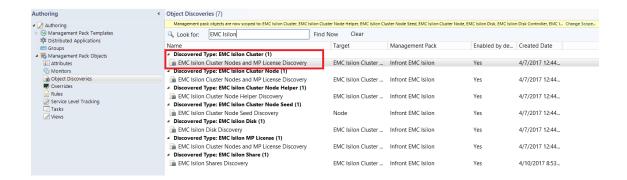
- Overwrite it with the number of target license to be used (Number of Clusters)



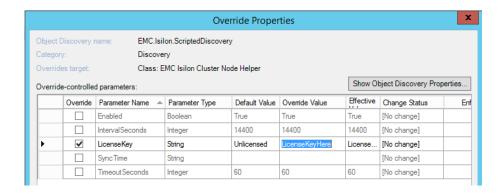
- The task output will show you the location of the request license file.



- Send us this file to provide the License Key to enter as follows:
- 1. In the SCOM OpsMgr Console, click on the Authoring / Object Discoveries
- 2. Select Scope and enter **EMC Isilon** in the "Look for:"



- 3. Select the EMC Isilon Cluster Nodes and MP License Discovery discovery
- 4. Override for all objects of class: EMC Isilon ClusterNode Helper
- 5. Enter the license key and save the override in EMC.Isilon.Overrides MP (suggested).



# **Understanding Management Pack Operations**

#### **Discoveries**

Here are the classes defined and discovered by Infront EMC Isilon MP.

	Select Items to
Select the class, group, or object the	at you want to target from the list
items easier to find.	
Look for:	
isilon	
O View common targets	
0	
View all targets	
Target	Management Pack
EMC Isilon Cluster	EMC.Isilon
EMC Isilon Cluster Node	EMC.Isilon
EMC Isilon Disk	EMC.Isilon
EMC Isilon Disk Controller	EMC.Isilon
EMC Isilon InfiniBand Adapter	EMC.Isilon
EMC Isilon Memory (NVRAM)	EMC.Isilon
EMC Isilon Memory (RAM)	EMC.Isilon
EMC Isilon Network Adapter	EMC.Isilon
EMC Isilon PowerSupply	EMC.Isilon
	EMC.Isilon

# Monitors

Here is the list of the monitors defined by the **Infront EMC Isilon** MP:

Monitor	Target	Description
EMC Isilon Disk Availability Monitor	EMC Isilon Disk	Checks the disk status for a state other than HEALTHY
EMC Isilon Power Supply Availability Monitor	EMC Isilon Power Supply	Checks the state of the power supplies
EMC Isilon Node Capacity Available Less Than Threshold Monitor	EMC Isilon Cluster Node	Checks the cluster node available capacity falling below configurable threshold (default 10%)
EMC Isilon Node Events Monitor	EMC Isilon Cluster Node	Checks for new events (warning, critical, emergency) that are raised in the last probing interval (10 min interval)
EMC Isilon V8 Disk Availability Monitor	EMC Isilon Disk	Checks the disk status for a state other than HEALTHY using V8 isi commands

EMC Isilon V8 Node Events Monitor	EMC Isilon Cluster Node	Checks for new events (warning, critical, emergency) that are not resolved using V8 isi commands
EMC Isilon V8 Cluster Health Monitor	EMC Isilon Cluster	Checks the cluster status using V8 commands
EMC Isilon Share Availability Monitor	EMC Isilon Share	Checks the share availability
EMC Isilon OneFS Web Administration Interface Monitor	EMC Isilon Cluster Node	This monitor checks the availability of the EMC Isilon OneFS Web Administration Interface by doing a simple http(s) ping of the Web Console

Rollup and Aggregate monitors are also defined to complete the distributed application health model.

# **Rules**

Here is the list of the rules defined by the **Infront EMC Isilon** MP (description is not included as it is self-explanatory):

Rule Name	Rule Type	Target
EMC Isilon Node CPU %Used Collection Rule	Performance	EMC Isilon Cluster Node
EMC Isilon Node SMB Ops Collection Rule	Performance	EMC Isilon Cluster Node
EMC Isilon Node FTP Ops Collection Rule	Performance	EMC Isilon Cluster Node
EMC Isilon Node HTTP Ops Collection Rule	Performance	EMC Isilon Cluster Node
EMC Isilon Node ISCSI Ops Collection Rule	Performance	EMC Isilon Cluster Node
EMC Isilon Node NFS Ops Collection Rule	Performance	EMC Isilon Cluster Node
EMC Isilon Node HDFS Ops Collection Rule	Performance	EMC Isilon Cluster Node
EMC Isilon Node Total Ops Collection Rule	Performance	EMC Isilon Cluster Node
EMC Isilon Node NetIn Pkt Collection Rule	Performance	EMC Isilon Cluster Node
EMC Isilon Node NetOut Pkt Collection Rule	Performance	EMC Isilon Cluster Node

EMC Isilon Node DiskIn Ops Collection Rule	Performance	EMC Isilon Cluster Node
EMC Isilon Node DiskOut Ops Collection Rule	Performance	EMC Isilon Cluster Node
EMC Isilon Node Capacity Total Size Collection Rule	Performance	EMC Isilon Cluster Node
EMC Isilon Node Capacity Available Collection Rule	Performance	EMC Isilon Cluster Node
EMC Isilon Node Capacity Used Collection Rule	Performance	EMC Isilon Cluster Node
EMC Isilon Disk OpsIn Collection Rule	Performance	EMC Isilon Disk
EMC Isilon Disk BytesIn Collection Rule	Performance	EMC Isilon Disk
EMC Isilon Disk SizeIn Collection Rule	Performance	EMC Isilon Disk
EMC Isilon Disk OpsOut Collection Rule	Performance	EMC Isilon Disk
EMC Isilon Disk BytesOut Collection Rule	Performance	EMC Isilon Disk
EMC Isilon Disk SizeOut Collection Rule	Performance	EMC Isilon Disk
EMC Isilon Disk TimeAvg Collection Rule	Performance	EMC Isilon Disk
EMC Isilon Disk Slow Collection Rule	Performance	EMC Isilon Disk
EMC Isilon Disk TimeInQ Collection Rule	Performance	EMC Isilon Disk
EMC Isilon Disk Queued Collection Rule	Performance	EMC Isilon Disk
EMC Isilon Disk Busy Collection Rule	Performance	EMC Isilon Disk
EMC Isilon Disk Used Collection Rule	Performance	EMC Isilon Disk
EMC Isilon Disk Inodes Collection Rule	Performance	EMC Isilon Disk
EMC Isilon New Critical Events Alert Rule	Alert	EMC Isilon Cluster Node
EMC Isilon New Warning Events Alert Rule	Alert	EMC Isilon Cluster Node
EMC Isilon V8 New Critical Events Alert Rule	Alert	EMC Isilon Cluster Node
EMC Isilon V8 New Warning Events Alert Rule	Alert	EMC Isilon Cluster Node
EMC Isilon V8 Node CPU %Used Collection Rule	Performance	EMC Isilon Cluster Node
EMC Isilon V8 Node SMB Ops Collection Rule	Performance	EMC Isilon Cluster Node
EMC Isilon V8 Node FTP Ops Collection Rule	Performance	EMC Isilon Cluster Node
EMC Isilon V8 Node HTTP Ops Collection Rule	Performance	EMC Isilon Cluster Node
EMC Isilon V8 Node ISCSI Ops Collection Rule	Performance	EMC Isilon Cluster Node

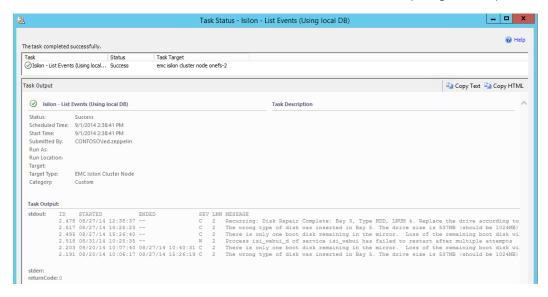
Performance	EMC Isilon Cluster Node
Performance	EMC Isilon Cluster Node
Performance	EMC Isilon Disk
	Performance

# Tasks

By selecting one of the **EMC Isilon Cluster Node** objects you have the option to execute the following tasks:



For example here is the task output if executing "Isilon - List Events (Using local DB)":

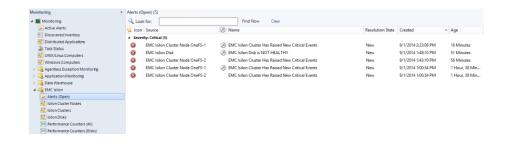


#### **Views**

The following views are made available by the Infront EMC Isilon MP:



#### **Alerts View**

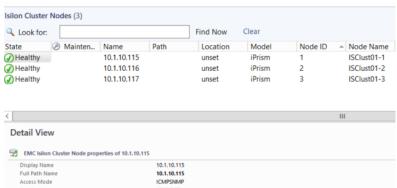


### Isilon Cluster(s) Status



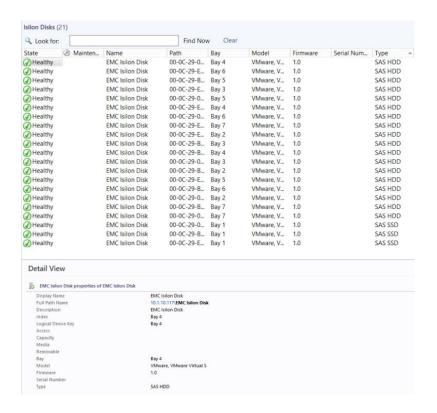


#### **Isilon Cluster Nodes Status**

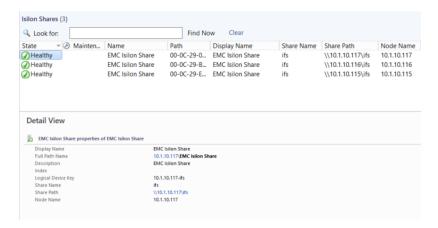




#### Isilon Disks Status

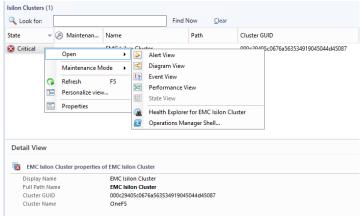


#### **Isilon Shares Status**

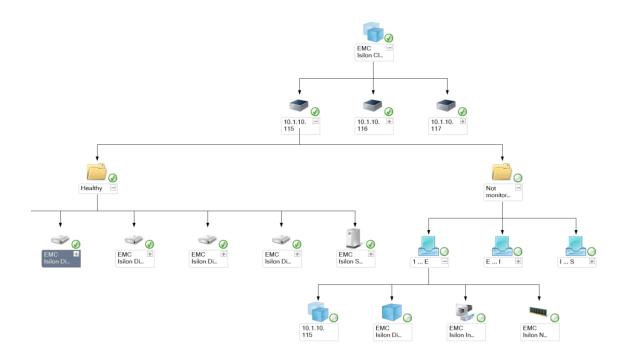


#### Isilon Cluster Diagram

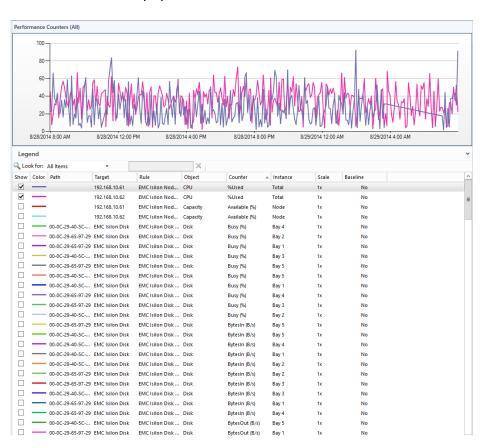
By selecting one of the Isilon Clusters and then Diagram View:

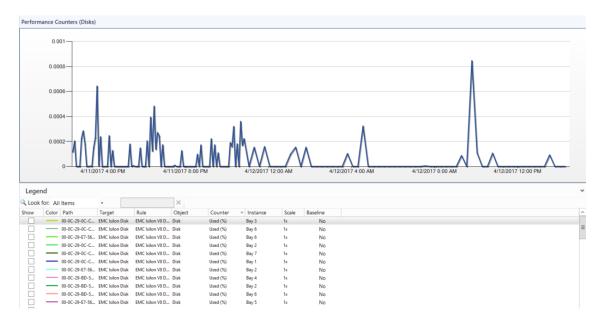


Isilon Cluster Diagram



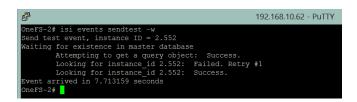
#### Performance Counters (All)





### **Quick Monitoring Test**

On a monitored Isilon Cluster Node issue the following command:



In the next few minutes, alert will be triggered:

