

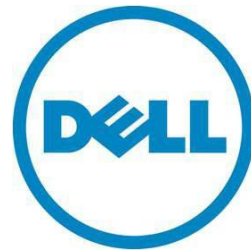
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# Dell OpenManage Essentials v2.0 - Device support

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*This Dell technical white paper provides complete details about support for the following Dell devices in OpenManage Essentials: EqualLogic Groups, PowerVault NX3500, SonicWALL Firewall, PowerConnect W-Series, Brocade Fibre Channel, Compellent, Dell Networking, KVM, PDU, and UPS.*

OME Engineering Team



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This document describes complete support of Dell devices in OpenManage Essentials. The following topics will be covered in this document:

1. Device Discovery/Inventory & Classification
2. Device Health
3. Application Launch
4. Monitoring these Devices (Alerts)
5. Troubleshooting

## **Introduction**

OpenManage Essentials enables users to manage and monitor the discovered Dell EqualLogic Groups, PowerVault NX3500, SonicWALL Firewall, PowerConnect W-Series, Brocade Fibre Channel, Compellent, Dell Networking, KVM, PDU, and UPS devices, in addition to the devices supported in the previous version, in a single centralized mode.

## **Scope**

With OpenManage Essentials users can perform discovery and inventory to manage devices present in their network. The scope of this document is limited to complete support of Dell EqualLogic Groups, PowerVault NX3500, SonicWALL Firewall, PowerConnect W-Series, Brocade Fibre Channel, Compellent, Dell Networking, KVM, PDU, and UPS devices in OpenManage Essentials.

## **Pre-requisites**

OpenManage Essentials can discover and receive alerts from Dell EqualLogic Groups, PowerVault NX3500, SonicWALL Firewall, PowerConnect W-Series, Brocade Fibre Channel, Compellent, Dell Networking, KVM, PDU, and UPS devices using SNMP protocol. SNMP protocol versions V1 and V2 are supported as of now. User has to configure the SNMP protocol on all the target devices and set the management station IP address to the system where OpenManage Essentials is installed. Also, the same IP address must be mentioned for SNMP trap receiver for that device. Although these settings are not required on all these devices, it is recommended to check for the SNMP configuration before performing discovery/inventory. The “Troubleshooting” section provides guidance on how to make sure that a target device is configured correctly to be managed by OpenManage Essentials.

## **Protocol Support**

OpenManage Essentials uses SNMP protocol for discovering Dell EqualLogic Groups, PowerVault NX3500, SonicWALL Firewall, PowerConnect W-Series, Brocade Fibre Channel, Compellent, Dell Networking, KVM, PDU, and UPS devices. Receipt of SNMP traps/alerts is also well supported for these devices in OpenManage Essentials.

## Dell OpenManage Essentials v2.0 - Device Support

### Device Discovery/Inventory & Classification

The process for discovering a Dell EqualLogic Groups, PowerVault NX3500, SonicWALL Firewall, PowerConnect W-Series, Brocade Fibre Channel, Compellent, Dell Networking, KVM, PDU, or UPS through OpenManage Essentials is as follows:

1. Launch Open Manage Essentials.
2. Navigate to Manage → Discovery and Inventory.
3. Click “Add Discovery Range” on the left pane.
4. Enter the IP address / Host name and subnet mask and click “Add”.

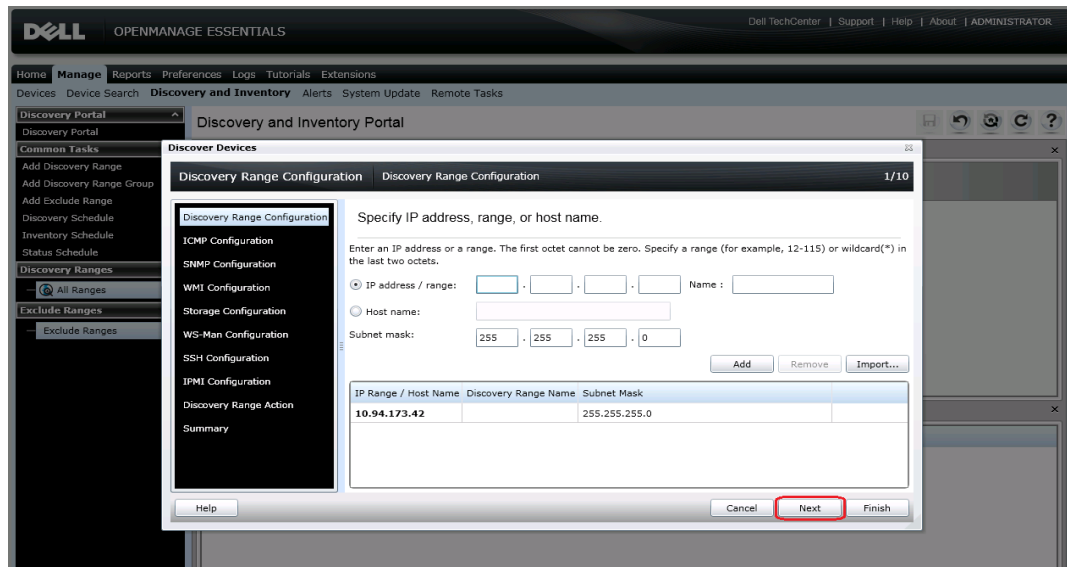


Figure 1: Discovery Range Configuration

5. Click “Next”.
6. ICMP Configuration: click “Next”.

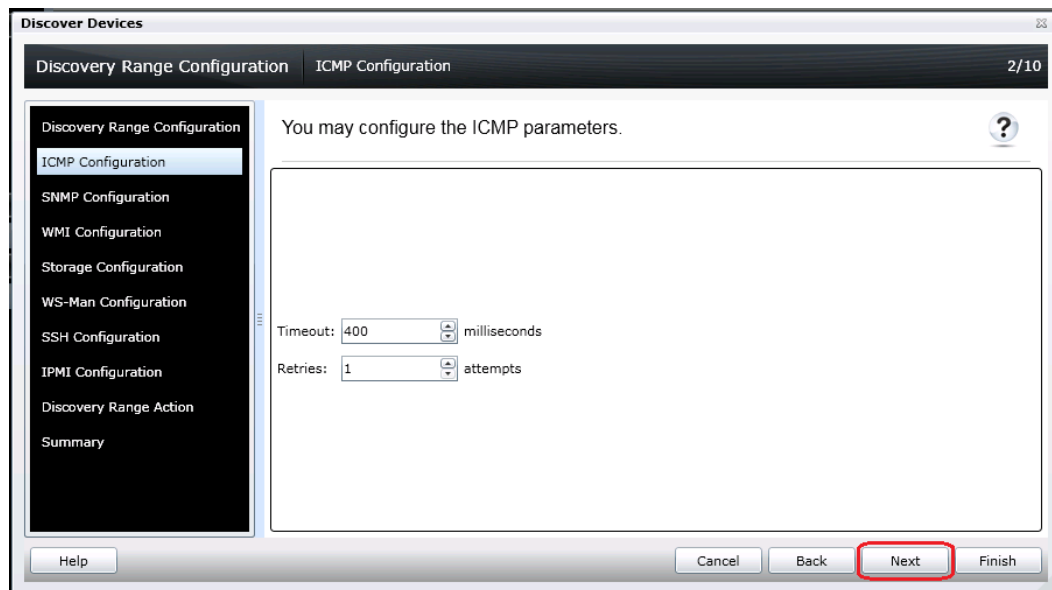


Figure 2: ICMP Configuration

7. SNMP Configuration: Modify “Get community” field if other than “public” and then click “Finish”.

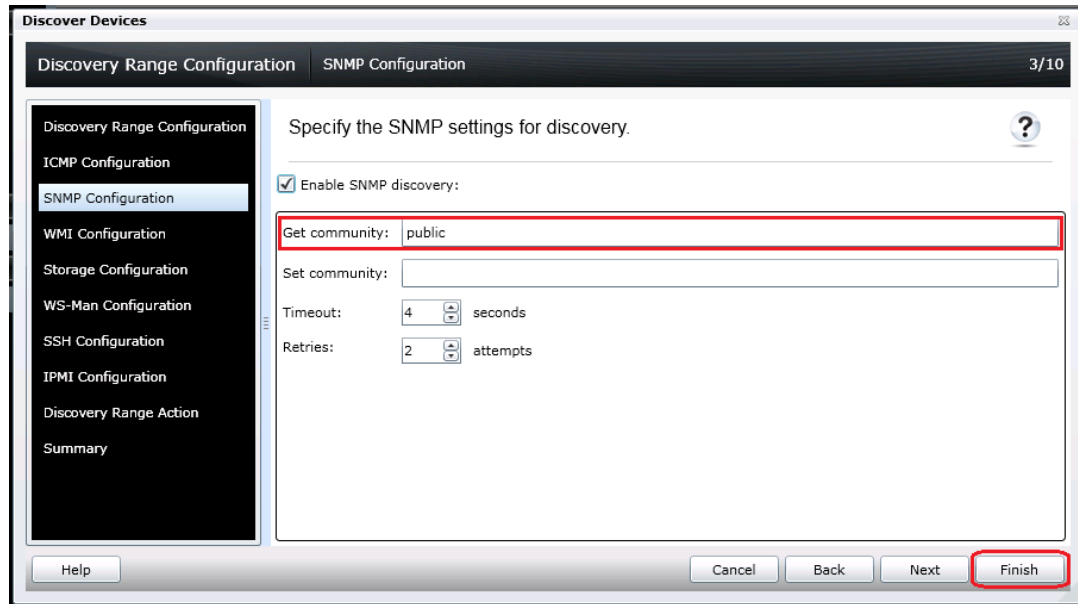


Figure 3: SNMP Configuration

## Classification

### Dell EqualLogic Groups

Dell EqualLogic groups are classified under All Devices → Storage Devices → Dell EqualLogic Groups in the tree on the left side. A discovered Dell EqualLogic Group will be represented as shown in the following figure.

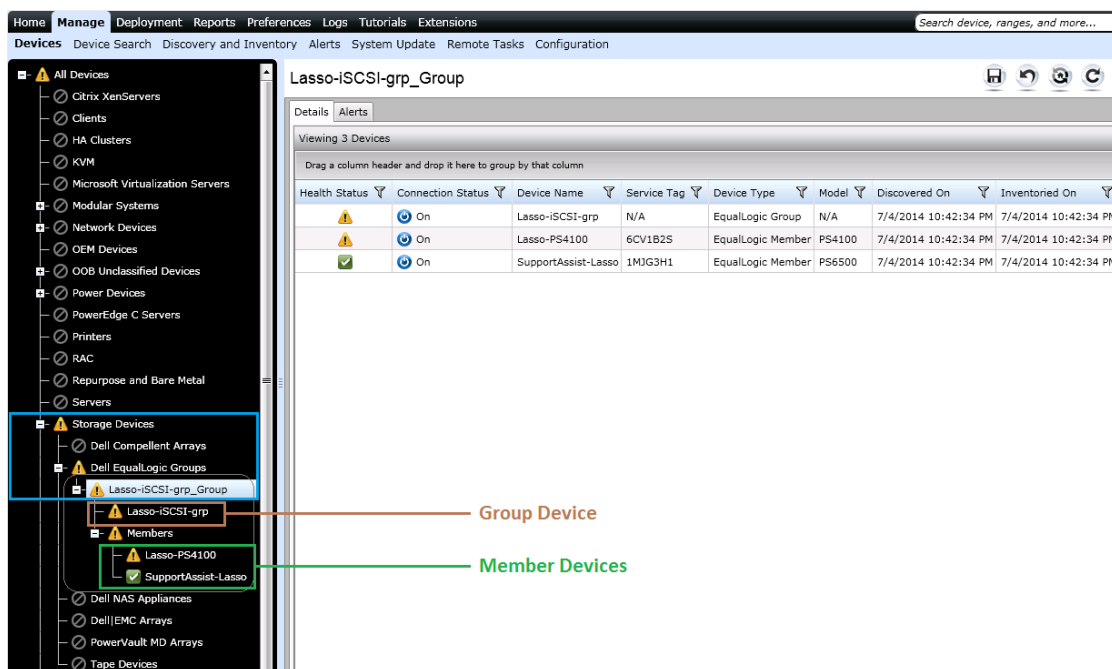


Figure 4: Dell EqualLogic Group Representation



## Dell OpenManage Essentials v2.0 - Device Support

Dell EqualLogic storage is no longer represented as a single device, instead, it is represented as a group, where:

- The **Group Device** holds group level data.
- The **Member Device** holds member specific data.

Dell EqualLogic groups are auto generated during the discovery process and get cleaned up automatically when either the Group Device or the corresponding Discovery Range is deleted. Every discovered Dell EqualLogic group will have one Group Device and multiple Member Devices depending on the number of enclosures added to the group.

### Group Device Tables and Data

The following tables will be shown as part of the inventory details page for the EqualLogic Group device:

- Device Summary - Model and Service Tag will be shown as N/A for the EqualLogic Group device.
- Data Sources - Shows group-level health status and other details.
- NIC Information - Lists only EqualLogic Management and Storage Group IP addresses.
- Storage Group Information - Information about the storage group.
- EqualLogic Volume Information - Lists the volumes created under the group.

The screenshot shows the Dell OpenManage Essentials v2.0 interface. The left sidebar contains a tree view of devices, with 'Lasso-iSCSI-grp' selected under 'Dell EqualLogic Groups'. The main panel displays the 'Lasso-iSCSI-grp' details, including 'Device Summary', 'Data Sources', 'NIC Information', and 'Storage Group Information'.

**Device Summary**

Health Status	Connection Status	Device Name	Device Type	Model	Service Tag	Asset Tag	Express Service Code	Location	Revision	Device
Warning	On	Lasso-iSCSI-grp	EqualLogic Group	N/A	N/A	N/A	N/A	N/A	N/A	7/4/20

**Data Sources**

Global Status	Name	Version	Description	Manufacturer
Warning	EqualLogic SNMP Agent	N/A	EqualLogic SNMP Agent	Dell Inc

**NIC Information**

IPv4 Address	IPv6 Address	MAC Address	Description	TOE Capability	TOE Enabled
10.94.101.236	N/A	N/A	EqualLogic Management	N/A	N/A
192.168.113.221	N/A	N/A	EqualLogic Storage Group	N/A	N/A

**Storage Group Information**

Name	Lun ID	Host Name
Lasso-iSCSI-grp	1	N/A

Figure 5: Dell EqualLogic Group Device Inventory I

### Member Device Tables and Data

The following tables will be shown as part of the inventory details page for the EqualLogic Member device:

- Device Summary - Shows the member-specific model and Service Tag.
- Data Sources - Shows the member-specific health status and other details.
- NIC Information - Lists only the member-specific IP addresses.

## Dell OpenManage Essentials v2.0 - Device Support

Home Manage Deployment Reports Preferences Logs Tutorials Extensions Search device, ranges, and more...

Devices Device Search Discovery and Inventory Alerts System Update Remote Tasks Configuration

**All Devices**

- Citrix XenServers
- Clients
- HA Clusters
- KVM
- Microsoft Virtualization Servers
- Modular Systems
- Network Devices
- OEM Devices
- OOB Unclassified Devices
- Power Devices
- PowerEdge C Servers
- Printers
- RAC
- Repurpose and Bare Metal
- Servers
- Storage Devices
  - Dell Compellent Arrays
  - Dell EqualLogic Groups
    - Lasso-iSCSI-grp\_Group
      - Lasso-iSCSI-grp
        - Members
          - Lasso-PS4100
            - SupportAssist-Lasso
    - Dell NAS Appliances
    - Dell EMC Arrays
    - PowerVault MD Arrays
    - Tape Devices

**Lasso-iSCSI-grp**

Details Alerts

**EqualLogic Volume Information**

Target ID	Lun ID	Name	Device Name	Size (GB)
iqn.2001-05.com.equallogic:8-cb2b76-b8d0f4350-ea7000000a528f7-v	1	vss-control	1849657978	0
iqn.2001-05.com.equallogic:8-cb2b76-dad0f4350-fd3d19e153552934-l	2	Lasso-Cluster-shared-Lun	1849657978	300
iqn.2001-05.com.equallogic:8-cb2b76-dd80f4350-ac1d19e153852934-l	3	Lasso-cluster-quorum	1849657978	5
iqn.2001-05.com.equallogic:8-cb2b76-dff0f4350-f96d19e153b52934-r	4	Rack4-RHEL59-lun	1849657978	10
iqn.2001-05.com.equallogic:0-8a0906-c0c77e804-acc0000002552996-e	5	ESXi-5-1-Lun	1101114969	500
iqn.2001-05.com.equallogic:0-8a0906-76277e804-18100000027529ac-o	6	Oracle-Linux-65-Lun	1101114969	10
iqn.2001-05.com.equallogic:0-8a0906-12277e804-fa30000002952b00-r	7	Rack3-OracleVMServer-Lun	1101114969	100
iqn.2001-05.com.equallogic:8-cb2b76-de10f4350-3e900495f9f52c27-5	8	57810-lun	1849657978	20
iqn.2001-05.com.equallogic:0-8a0906-d6f77e804-01bda0f22b752cd4-o	9	oracle-linux-lun2	1101114969	5
iqn.2001-05.com.equallogic:0-8a0906-f9077e804-412d4195ba252e60-p	10	PER520-Lun	1101114969	50
iqn.2001-05.com.equallogic:0-8a0906-fff77e804-104d4195ba452e60-p	11	PER320-Lun	1101114969	50
iqn.2001-05.com.equallogic:0-8a0906-87477e804-1d6d4195d4352fdf-s	12	scvmm-host-lun	1101114969	20
iqn.2001-05.com.equallogic:0-8a0906-a8f77e804-ad5001ca8035304a-h	13	heman-test	1101114969	50
iqn.2001-05.com.equallogic:0-8a0906-a5877e804-654001ca8795305c-r	14	R720-W2K12R2-115	1101114969	500
iqn.2001-05.com.equallogic:0-8a0906-5e977e804-15d001ca87b5305d-r	15	R905-Node1Cluster-2008	1101114969	10
iqn.2001-05.com.equallogic:0-8a0906-cfb77e804-b95001ca9bb530f3-w	16	Windows2012R2-Quorum	1101114969	10
iqn.2001-05.com.equallogic:0-8a0906-df077e804-be2001ca9bd530f3-w	17	Windows2012R2-Clusterpool	1101114969	100
iqn.2001-05.com.equallogic:0-8a0906-0ed77e804-58b001cabd153298-t	23	Test1	1101114969	1

Figure 6: Dell EqualLogic Group Device Inventory II

- Controller Information - Lists the controllers associated to the selected member.
- Enclosure Information - Lists more details about the selected member.
- Physical Disk Information - Lists the disks residing in the selected member enclosure.

Home Manage Deployment Reports Preferences Logs Tutorials Extensions Search device, ranges, and more...

Devices Device Search Discovery and Inventory Alerts System Update Remote Tasks Configuration

**All Devices**

- Citrix XenServers
- Clients
- HA Clusters
- KVM
- Microsoft Virtualization Servers
- Modular Systems
- Network Devices
- OEM Devices
- OOB Unclassified Devices
- Power Devices
- PowerEdge C Servers
- Printers
- RAC
- Repurpose and Bare Metal
- Servers
- Storage Devices
  - Dell Compellent Arrays
  - Dell EqualLogic Groups
    - Lasso-iSCSI-grp\_Group
      - Lasso-iSCSI-grp
        - Members
          - Lasso-PS4100
            - SupportAssist-Lasso

**Lasso-PS4100**

Details Alerts

**Device Summary**

Health Status	Connection Status	Device Name	Device Type	Model	Service Tag	Asset Tag	Express Service Code	Location	Revision	Devic
Warning	On	Lasso-PS4100	EqualLogic Member	PS4100	6CV1B2S	N/A	N/A	N/A	N/A	7/4/2

**Data Sources**

Global Status	Name	Version	Description	Manufacturer
Warning	EqualLogic SNMP Agent	N/A	EqualLogic SNMP Agent	Dell Inc

**NIC Information**

IPv4 Address	IPv6 Address	MAC Address	Description	TOE Capability	TOE Enabled
192.168.113.220	N/A	N/A	eth0	N/A	N/A
10.94.101.220	N/A	N/A	eth2	N/A	N/A

**Controller Information**

Number	Name	Type	Firmware Version
2	CN-007JN6	70-0476	Storage Array Firmware V6.0.10 (R390548)

Figure 7: Dell EqualLogic Member Device Inventory I

## Dell OpenManage Essentials v2.0 - Device Support

Home Manage Deployment Reports Preferences Logs Tutorials Extensions Search device, ranges, and more...

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**All Devices**

- ⊗ Citrix XenServers
- ⊗ Clients
- ⊗ HA Clusters
- ⊗ KVM
- ⊗ Microsoft Virtualization Servers
- ⊗ Modular Systems
- ⊗ Network Devices
- ⊗ OEM Devices
- ⊗ OOB Unclassified Devices
- ⊗ Power Devices
- ⊗ PowerEdge C Servers
- ⊗ Printers
- ⊗ RAC
- ⊗ Repurpose and Bare Metal
- ⊗ Servers
- ⊗ Storage Devices
  - ⊗ Dell Compellent Arrays
  - ⊗ Dell EqualLogic Groups
    - ⊗ Lasso-iSCSI-grp\_Group
      - ⊗ Lasso-iSCSI-grp
        - ⊗ Members
          - ⊗ Lasso-PS4100
          - ⊗ SupportAssist-Lasso
    - ⊗ Dell NAS Appliances
    - ⊗ Dell EMC Arrays
    - ⊗ PowerVault MD Arrays
    - ⊗ Tape Devices

**Lasso-PS4100**

Details Alerts

Enclosure ID	Service Tag	Name	Product ID	Type	Serial Number	Vendor	Number Of Controllers
1849657978	6CV1B2S	Lasso-PS4100	70-0476	tdELLSB82u1235	CN-01N9TR-70821-17F-0062-A00	EqualLogic	1

**Enclosure Information**

Enclosure ID	Service Tag	Name	Product ID	Type	Serial Number	Vendor	Number Of Controllers
1849657978	6CV1B2S	Lasso-PS4100	70-0476	tdELLSB82u1235	CN-01N9TR-70821-17F-0062-A00	EqualLogic	1

**Physical Disk Information**

Enclosure ID	LUN ID	Size (GB)	Bus Type	Serial Number	Model Number	Revision
1849657978	0	558	sas	6SL22B4G	ST3600057SS	EN03
1849657978	1	558	sas	6SL212GG	ST3600057SS	EN03
1849657978	2	558	sas	6SL1HJLD	ST3600057SS	EN03
1849657978	3	558	sas	6SL22F1H	ST3600057SS	EN03
1849657978	4	558	sas	6SL1Z6F6	ST3600057SS	EN03
1849657978	5	558	sas	6SL1F9PP	ST3600057SS	EN03
1849657978	6	558	sas	6SL218WG	ST3600057SS	EN03
1849657978	7	558	sas	6SL1LL73	ST3600057SS	EN03
1849657978	8	558	sas	6SL22B97	ST3600057SS	EN03
1849657978	9	558	sas	6SL1KEPS	ST3600057SS	EN03
1849657978	10	558	sas	6SL1B96N	ST3600057SS	EN03
1849657978	11	558	sas	6SL22CTS	ST3600057SS	EN03

Figure 8: Dell EqualLogic Member Device Inventory II

### Supported Actions For Dell EqualLogic Group

Below table lists the supported actions and their behavior for Dell EqualLogic Groups.

Table 1: Dell EqualLogic Group - Supported actions

Action	Group Device	Member Device
Application Launch	Dell EqualLogic Console	View and renew warranty Dell EqualLogic Console
Refresh Inventory	Updates inventory for the entire group. Re-creates any deleted members.	Updates inventory for the entire group. Re-creates any deleted members.
Refresh Status	Updates status for the entire group including all members.	Updates status for the entire group including all members.
Add to New Group	Supported.	Supported.
Ignore All Alerts from Device	Ignores all alerts coming from the EqualLogic Group device only.	Ignores all alerts coming from the selected member only.
Exclude	Supported.	Not Supported.
Delete	Deletes the entire group including all members.	Deletes only the selected member.

## Dell OpenManage Essentials v2.0 - Device Support

### *Event Association For Dell EqualLogic Group*

Dell EqualLogic member SNMP alerts are associated at member device level and not at the group device level. Alerts tab for EqualLogic Member device will list all the alerts received from the selected member as shown in the following figures.

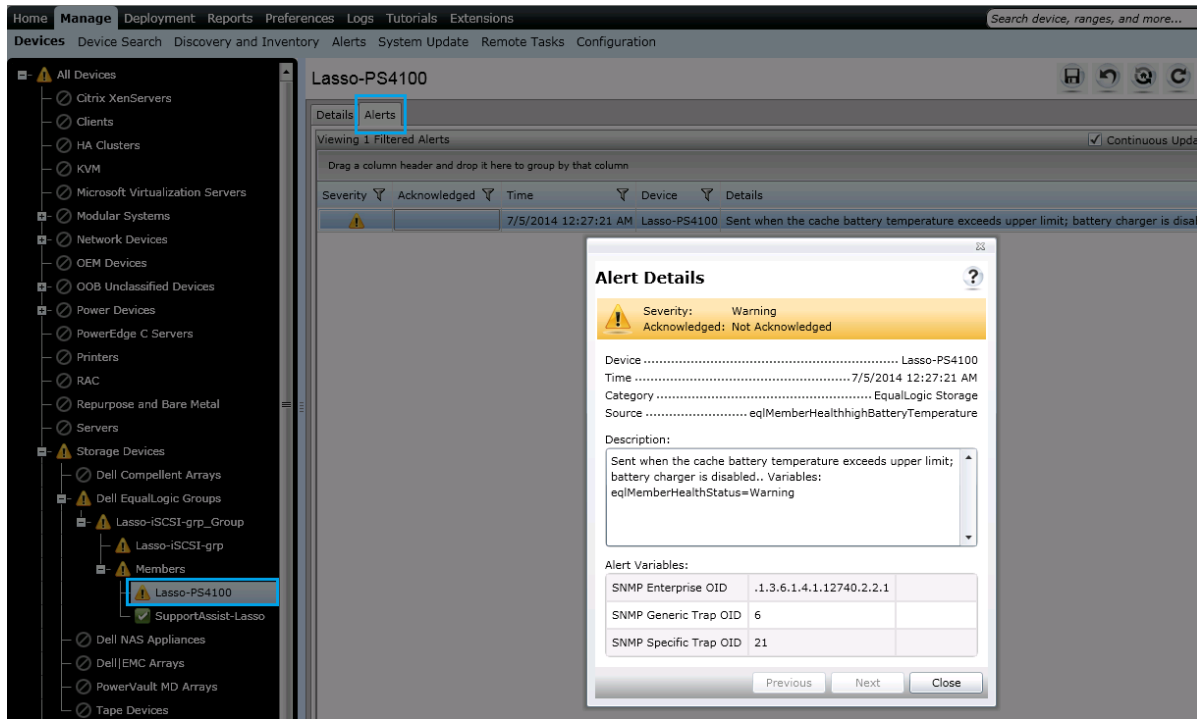


Figure 9: Dell EqualLogic Member Event Association I

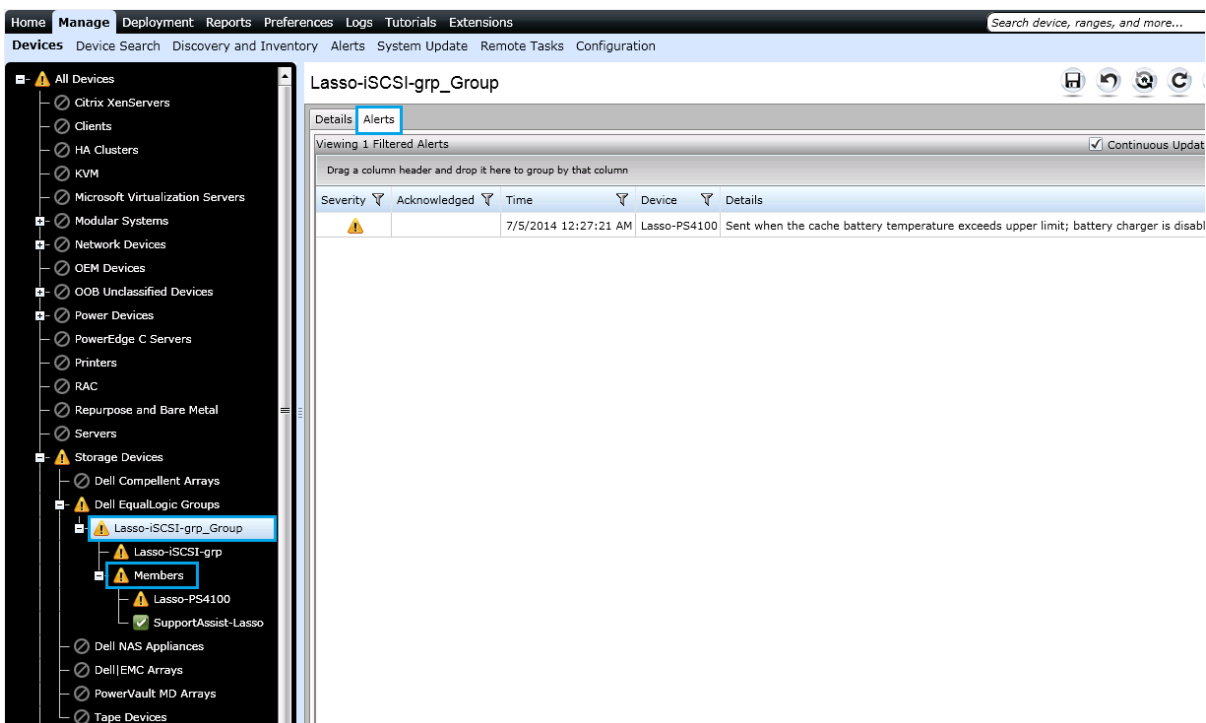


Figure 10: Dell EqualLogic Member Event Association II

## Dell OpenManage Essentials v2.0 - Device Support

### *Recommendations For Dell EqualLogic Group discovery*

The following are highly recommended for proper support of Dell EqualLogic Groups in OpenManage Essentials:

- After upgrade from previous versions of OpenManage Essentials, it is mandatory to perform re-discovery of all the discovered Dell EqualLogic devices to have proper functionality.
- It is recommended to discover Dell EqualLogic storage arrays using the Group Management IP or Storage Group IP only, and not include any of the member IPs in the discovery range configuration.

**Note:** The back-end Dell EqualLogic storage of a FS7500/FS7600/FS7610 NAS setup will be classified as Dell EqualLogic Groups instead of Dell NAS Appliances in OpenManage Essentials.

### Dell PowerVault NX3500

Dell PowerVault NX3500 devices are classified under All Devices → Storage Devices → Dell NAS Appliances in the tree on the left side. User can click the discovered device to see all the inventoried tables as shown in the following figure.

The screenshot displays the Dell OpenManage Essentials web interface. On the left, a navigation tree under 'All Devices' shows the path: Storage Devices → Dell NAS Appliances → NASGrp. The main panel shows the 'NASGrp' details page with the following sections:

- Device Summary:** A table with columns: Health Status, Connection Status, Device Name, Device Type, Model, Service Tag, Asset Tag, Express Service Code, Location, Revision, and Device. The row shows a green checkmark for health, 'On' for connection, 'NASGrp' for name, 'NAS Appliance' for type, 'PowerVault NX3500' for model, 'ABC1234' for service tag, 'N/A' for asset tag, '36823797568' for express service code, 'LAB' for location, 'N/A' for revision, and '2/5/20' for device.
- Data Sources:** A table with columns: Global Status, Name, Version, Description, and Manufacturer. It lists four sources: 'Server Administrator' (7.2.0, Dell Inc.), 'Server Administrator (Storage Management)' (4.2.0, Dell Inc.), 'Inventory Collector Agent' (7.2.0, Dell Inc.), and 'Exanet SNMP Agent' (1.0, Dell).
- NIC Information:** A table with columns: IPv4 Address, IPv6 Address, MAC Address, Description, TOE Capability, and TOE Enabled. It lists two network interfaces: 'Broadcom BCM5708C NetXtreme II GigE' (10.94.145.19, N/A, 00:1c:23:db:a9:96, Yes, False) and 'Broadcom BCM5708C NetXtreme II GigE #2' (N/A, N/A, 00:1c:23:db:a9:98, Yes, False).
- RAC Device Information:** A table with columns: RAC IP Address, RAC Type, RAC DNS Name, and RAC Connection Status. It shows '169.254.0.2' as the IP, 'Remote Access Controller' as the type, 'N/A' as the DNS name, and 'Off' as the connection status.

Figure 11: Dell PowerVault NX3500 Classification and Inventory

### Supported Models

OpenManage Essentials currently supports Dell PowerVault NX3500 device.

#### Note:

For Dell PowerVault NX3500 NAS appliance, discovery/inventory and alerts/traps support is provided only for the solutions with Dell Fluid File System (FluidFS) V1 with OpenManage Server Administrator (OMSA) services running on the nodes. This is the default setting for any node with FluidFS V1. The Appliance Node Information table will list out the applicable details regarding the nodes present in the NAS solution. Rest of the inventory details will match the standard Dell PowerEdge Server inventory in OpenManage Essentials.



## Dell OpenManage Essentials v2.0 - Device Support

### Dell SonicWALL Firewall

Dell SonicWALL Firewall devices are classified under All Devices → Network Devices → Network Appliances in the tree on the left side. User can click the discovered device to see all the inventoried tables as shown in the following figure.

The screenshot displays the Dell OpenManage Essentials v2.0 interface. On the left, a navigation tree shows the hierarchy: All Devices → Network Devices → Network Appliances → sonicwall. The main panel shows the 'sonicwall' device details, including a 'Device Summary' table, 'Data Sources', 'NIC Information', 'Firmware Information', and 'Contact Information'.

**Device Summary**

Health Status	Connection Status	Device Name	Device Type	Model	Service Tag	Asset Tag	Express Service Code	Location	Revision	Device Disc
Unknown	On	sonicwall	Network Appliance	NSA 250 M	N/A	123456	N/A	bdc	5.0.5.6	2/5/2014 3

**Data Sources**

Global Status	Name	Version	Description	Manufacturer
Unknown	SonicWALL SNMP Agent	SonicOS Enhanced 5.9.0.1-100o	SNMP Agent to discover Dell SonicWALL Firewall Appliance	Dell

**NIC Information**

IPv4 Address	IPv6 Address	MAC Address	Description	TOE Capability	TOE Enabled
192.168.168.168	N/A	c0:ea:e4:0a:d8:b0	X0 (LAN)	N/A	N/A
10.94.173.131	N/A	c0:ea:e4:0a:d8:b1	X1 (WAN)	N/A	N/A

**Firmware Information**

Name	Version	Enclosure ID	Type
SonicOS	SonicOS Enhanced 5.9.0.1-100o	0	Firmware

**Contact Information**

Name	Description	Contact Information
dell.com	SonicWALL NSA 250 M (SonicOS Enhanced 5.9.0.1-100o)	bdc

Figure 12: Dell SonicWALL Firewall Classification and Inventory

### Supported Models

OpenManage Essentials currently supports Dell SonicWALL NSA 250M Firewall device.

#### Note:

Global health status for SonicWALL Firewall devices will always be shown as 'Unknown' in OpenManage Essentials. This is because the SonicWALL SNMP agent does not report device health through its Management Information Base (MIB). SonicWALL SNMP agent runs on SonicOS, which is also available on following platforms:

- TZ 100/100W, TZ 105/105W, TZ 200/200W, TZ 210/210W, and TZ 215/215W
- NSA 220/220W, NSA 240, and NSA 250M/250MW
- NSA 2400/2400MX, NSA 3500, NSA 4500, and NSA 5000
- E-Class NSA E5500, E6500, E7500, E8500, and E8510

Since the above listed models run the same firmware, they may also be classified in OpenManage Essentials similar to NSA 250M.

## Dell OpenManage Essentials v2.0 - Device Support

### Dell PowerConnect W-Series

Dell PowerConnect W-Series devices are classified under All Devices → Network Devices → Dell Networking Switches in the tree on the left side. User can click the discovered device to see all the inventoried tables as shown in the following figure.

The screenshot displays the Dell OpenManage Essentials v2.0 interface. On the left, a navigation tree shows the hierarchy: All Devices → Network Devices → Dell Networking Switches → Dell-W-3600. The main panel shows the 'Dell-W-3600' device details, including a 'Device Summary' table, 'Data Sources' table, 'NIC Information' table, 'Firmware Information' table, and 'Switch Device Information' table.

Health Status	Connection Status	Device Name	Device Type	Model	Service Tag	Asset Tag	Express Service Code	Location	Revision	Device Discovery Time
✓	On	Dell-W-3600	Switch	W-3600-US	N/A	N/A	N/A	bdc	A1.0	2/5/2014 3:51:51 I

Global Status	Name	Version	Description	Manufacturer
✓	PowerConnect W	6.3.0.1	Wireless Access Point	Dell, Inc.

IPv4 Address	IPv6 Address	MAC Address	Description	TOE Capability	TOE Enabled
10.94.173.132	N/A	c0:ea:e4:0a:d8:b1	802.1Q VLAN	N/A	N/A

Name	Version	Enclosure ID	Type
PowerConnect W	6.3.0.1	0	Firmware

Index	Service Tag	Serial Number	Asset Tag	Switch Role
1	N/A	DK0000425	N/A	Management Unit

Figure 13: Dell PowerConnect W-Series Classification and Inventory

### Supported Models

OpenManage Essentials currently supports following Dell PowerConnect W-Series devices: W-3200, W-3600, W-6000 M3, W-650, W-7210, W-7220, and W-7240.

#### Note:

PowerConnect W-Series devices will report only Normal or Critical (for active or inactive controllers) global health status in OpenManage Essentials. It is recommended to have ArubaOS version 6.3 or later installed on the mobility controllers for proper discovery and classification in OpenManage Essentials.

### Brocade Fibre Channel

Brocade Fibre Channel devices are classified under All Devices → Network Devices → Fibre Channel Switches in the tree on the left side. User can click the discovered device to see all the inventoried tables as shown in Figure 14.



## Dell OpenManage Essentials v2.0 - Device Support

The screenshot shows the Dell OpenManage Essentials v2.0 interface. On the left, a tree view under 'All Devices' has 'Fibre Channel Switches' expanded, with '10.94.101.203' selected. The main panel displays the details for this device. The 'Device Summary' table shows the device is a Brocade FC Switch with IP 10.94.101.203. The 'Data Sources' section lists 'FC SNMP Agent'. The 'NIC Information' table shows three network interfaces (eth0, FC port 0/14, FC port 0/15). The 'Firmware Information' table shows two entries: 'Fabric-OS' version 76.7 and 'Fabric-OS' version v7.0.2. The 'Contact Information' section shows 'Field Support' as 'Fibre Channel Switch' and 'End User Premise'. The 'Switch Device Information' table shows one entry with 'Service Tag' B07ZJN1 and 'Switch Role' N/A.

Figure 14: Brocade Fibre Channel Classification and Inventory

### Supported Models

OpenManage Essentials currently supports following Brocade Fibre Channel devices: 200E, 300, 4424, 5100, 5300, 6505, 6520, 8000, 8424-K, M5424, and M6505.

### Dell Compellent


Dell Compellent devices are classified under All Devices → Storage Devices → Dell Compellent Arrays in the tree on the left side. User can click the discovered device to see all the inventoried tables as shown in the following figures.



The screenshot shows the Dell OpenManage Essentials v2.0 interface. On the left, a tree view under 'All Devices' has 'Storage Devices' expanded, with 'Dell Compellent Arrays' selected, and 'SC8000-SSV' selected. The main panel displays the details for this device. The 'Device Summary' table shows the device is a Compellent SC8000-SSV with IP 10.94.168.21. The 'Data Sources' section lists 'Dell-Compellent Storage Center'. The 'NIC Information' table shows three network interfaces (eth0, eth0, eth1). The 'Controller Information' table shows one entry with 'SN' 60758 and 'Service Tag' 2D77F25.


Figure 15: Dell Compellent Classification


## Dell OpenManage Essentials v2.0 - Device Support


Details
Alerts


**Device Summary**


Health Status	Connection Status	Device Name	Device Type	Model	Service Tag	Asset Tag	Express Service Code	Location	Revision	Device Discovery Time
	 On	SC8000-SSV	Compellent	N/A	2D77F2S	N/A	N/A	N/A	6.4.3.9	2/5/2014 5:14:20 PM


**Data Sources**


Global Status	Name	Version	Description
	Dell-Compellent Storage Center	6.4.3	The Dell Compellent Storage Center storage area network provides a highly efficient and flexible virtualized storage environment.


**NIC Information**


IPv4 Address	IPv6 Address	MAC Address	Description	TOE Capability	TOE Enabled
10.94.168.21	N/A	00:30:5b:f2:0d:dc	eth0	N/A	N/A
10.94.168.20	N/A	00:30:5b:f2:0d:dc	eth0	N/A	N/A
11.0.10.220	N/A	00:30:5b:f2:0d:d8	eth1	N/A	N/A


**Controller Information**

Number	Name	Model	Service Tag	Asset Tag
1	SN 60758	CT_SC8000	2D77F2S	N/A
2	SN 60759	CT_SC8000	1D77F2S	N/A


**Enclosure Information**

Channel Number	Enclosure ID	Name	Product ID	Type	SCSI ID	Asset Name	Asset Tag	Service Tag	Serial Number	Part Number	Barcode
N/A	1	Enclosure - 1	N/A	SAS_EBOD_6G	N/A	N/A	N/A	N/A	N/A	EN-SASX6X24	N/A


**Physical Disk Information**

Enclosure ID	Disk Number	Name	Size (GB)	Serial Number	Model Number	Revision	Vendor
1	1	01-03	146	6XM0N50Z0000B24591U8	SEAGATE ST9146853SS	XRY2	SEAGATE
1	2	01-12	146	6XM0N6S00000B244D3KZ	SEAGATE ST9146853SS	XRY2	SEAGATE
1	3	01-04	146	6XM0N67C0000B245AK5F	SEAGATE ST9146853SS	XRY2	SEAGATE
1	4	01-02	146	6XM0N6QV0000B245AS49	SEAGATE ST9146853SS	XRY2	SEAGATE
1	5	01-08	146	6XM0N6B10000B245AMLX	SEAGATE ST9146853SS	XRY2	SEAGATE
1	6	01-01	146	6XM0N6JX0000B245AQC3	SEAGATE ST9146853SS	XRY2	SEAGATE
1	7	01-07	146	6XM0N6EA0000B245AJH3	SEAGATE ST9146853SS	XRY2	SEAGATE
1	8	01-11	146	6XM0N6TF0000B244CGGA	SEAGATE ST9146853SS	XRY2	SEAGATE
1	9	01-06	146	6XM0N6AK0000B245AM85	SEAGATE ST9146853SS	XRY2	SEAGATE
1	10	01-09	146	6XM0N6AR0000B245AM8Y	SEAGATE ST9146853SS	XRY2	SEAGATE
1	11	01-05	146	6XM0N6BB0000B245AMML	SEAGATE ST9146853SS	XRY2	SEAGATE
1	12	01-10	146	6XM0LSG70000M2448B1H	SEAGATE ST9146853SS	XRY2	SEAGATE

Figure 16: Dell Compellent Inventory Details

### Supported Models

OpenManage Essentials currently supports Dell Compellent SC8000 device.

#### Note:

The “Device summary” and “Enclosure Information” tables will show the service tag in the “Service Tag” column only if the Dell Compellent device is running with firmware version 6.4.1 or later. If the firmware version is earlier than 6.4.1, the “Service Tag” column will show “N/A”. The firmware version can be located under the “Agent Version” column of the “Data Sources” table as highlighted in Figure 16. Users are suggested to update all their target devices with the latest firmware available.

## Dell OpenManage Essentials v2.0 - Device Support

### Dell Networking

Dell Networking devices are classified under All Devices → Network Devices → Dell Networking Switches in the tree on the left side. User can click the discovered device to see all the inventoried tables as shown in the following figure.

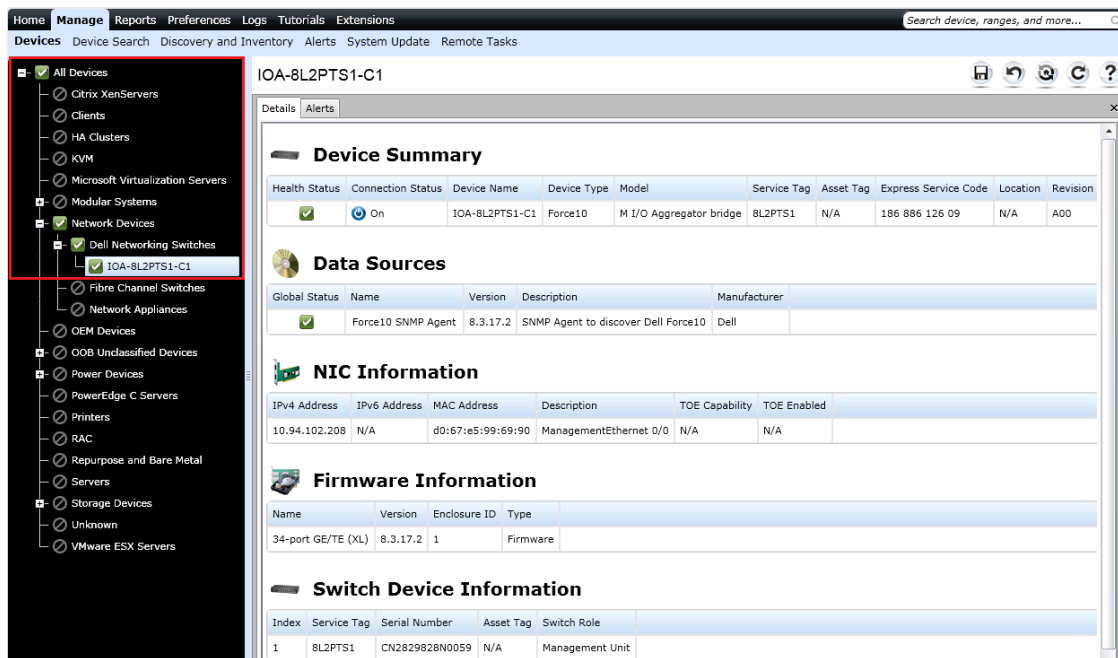


Figure 17: Dell Networking Classification and Inventory

### Supported Models

OpenManage Essentials currently supports following Dell Networking Switches:

Table 2: Minimum firmware version that supports the display of Service Tag of Dell Networking devices

Dell Networking Model	Minimum Firmware Version
C-Series	8.4.2.7
E-Series (ExaScale)	8.4.1.5
E-Series (TeraScale)	8.4.2.7
S25, S50	8.4.2.7
S55	8.3.5.3
S60	8.3.3.8
S4810	8.3.12.0
S4820T	8.3.19.0
S5000	9.0.1.3
S6000	9.0.2.0
M-Series	8.3.16.1
Z-Series	9.0.0.0

**Note:**

Device type for the entire portfolio of Dell switches will be shown as Dell Networking (this does not include Brocade Fiber Channel switches). This behavior is irrespective of whether the firmware on the switch device has been upgraded to the rebranded one or not.

**Note:**

The “Device summary” and “Switch Device Information” tables will show the service tag in the “Service Tag” column only if the Dell Networking device is running with the supported firmware versions or later. Refer Table 2 for firmware versions supporting service tag for corresponding Dell Networking models. If the firmware version is earlier than those listed in Table 2, the “Service Tag” column will show “N/A.” The firmware version can be located under the “Version” column of the “Firmware Information” table.

## Dell KVM

Dell KVM devices are classified under All Devices → KVM in the tree on the left side. User can click the discovered device to see all the inventoried tables as shown in the following figure.

The screenshot displays the Dell OpenManage Essentials interface. On the left, a navigation tree under 'All Devices' shows 'KVM' selected, with '2161DS-02-F3-3A' highlighted. The main panel shows the details for this device, including a 'Device Summary' table, 'Software Agent Information', 'NIC Information', 'Firmware Information', and 'Contact Information'.

Health Status	Connection Status	Device Name	Device Type	Model	Service Tag	Asset Tag	Express Service Code	Location	Revision
✓	On	2161DS 02-F3-3A	KVM	2161DS KVM/IP Switch	N/A	N/A	N/A	N/A	N/A

Agent Global Status	Agent Name	Agent Version	Agent Description	Agent Manufacturer
✓	2161DS KVM/IP Switch	03.01.00	Enables Keyboard / Video / Mouse redirection over a network connection.	Dell

IPv4 Address	IPv6 Address	MAC Address	Description	TOE Capability	TOE Enabled
10.35.155.112	N/A	00:e0:86:02:f3:3a	eth0	N/A	N/A

Name	Version	Enclosure ID	Type
2161DS KVM/IP Switch	03.01.00	0	Firmware

Name	Description	Contact Information
Dell Computer Corporation	2161DS 03.01.00	N/A

Figure 18: Dell KVM Classification and Inventory

## Supported Models

OpenManage Essentials currently supports the following Dell KVM devices: 4161DS, 1082DS, 2161DS, 2161DS-2, 2162DS, 2321DS, and 4332DS.

**Note:**

It is recommended to have latest firmware (version 1.16) installed on the KVM device to properly discover and classify it in OpenManage Essentials.

## Dell PDU

Dell PDU devices are classified under All Devices → Power Devices → PDU in the tree on the left side. User can click the discovered device to see all the inventoried tables as shown in Figure 19.

The screenshot shows the Dell OpenManage Essentials interface. On the left, a navigation tree is visible with the following structure:

- [-] All Devices
  - [-] Citrix XenServers
  - [-] Clients
  - [-] HA Clusters
  - [-] KVM
  - [-] Microsoft Virtualization
  - [-] Modular Systems
  - [-] Network Devices
  - [-] OEM Devices
  - [-] OOB Unclassified Device
  - [-] Power Devices
    - [-] PDU
      - [-] DELL DPI
    - [-] UPS
  - [-] PowerEdge C Servers
  - [-] Printers
  - [-] RAC
  - [-] Repurpose and Bare Mt
  - [-] Servers
  - [-] Storage Devices
  - [-] Unknown
  - [-] VMware ESX Servers

The right pane displays the details for the selected device, 'DELL DPI'. The interface includes tabs for 'Details' and 'Alerts'. The 'Details' tab is active, showing the following sections:

### Device Summary

Health Status	Connection Status	Device Name	Device Type	Model	Service Tag	Asset Tag	Express Service Code	Location	Revision	Devio
On	On	DELL DPI	PDU	431C2	N/A	N/A	N/A	N/A	CN-0431C2-75166-06S-0001-X02	10/11

### Software Agent Information

Agent Global Status	Agent Name	Agent Version	Agent Description	Agent Manufacturer
On	Dell PDU SNMP Agent	N/A	SNMP Agent to discover Dell PDU	Dell

### NIC Information

IPv4 Address	IPv6 Address	MAC Address	Description	TOE Capability	TOE Enabled
10.94.169.171	N/A	N/A	Host NIC adapter	N/A	N/A
1	N/A	b8:ac:6f:fc:ef:5c	UM9008	N/A	N/A

### Contact Information

Name	Description	Contact Information
Technical Support Team	DELL DPI 01.04.0041	N/A

### Device Properties

Display Name	Hardware Revision	Firmware Revision	No. of Outlets	Outlet Layout
DELL PDU 415V 11KW 3PH 21C13 6C19	X02	00.01.0008	27	Phase to Neutral Grouped

Figure 19: Dell PDU Classification and Inventory

## Supported Models

OpenManage Essentials currently supports following Dell PDU devices:

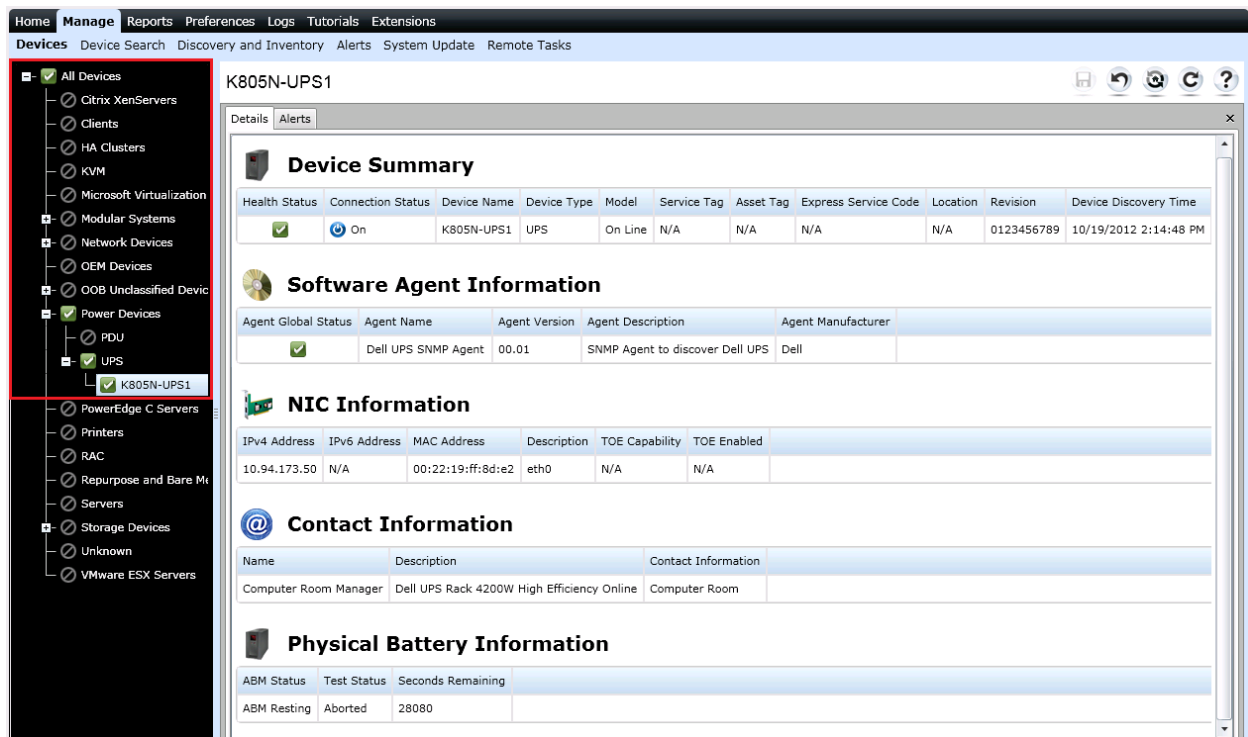
- Managed Rack PDU: K538N, G756N, H544N, J523N, and K539N.
- Metered Rack PDU: 1X98J, 7P35N, 09FG8, 4J1C2, XX5T6, RXKCH, K5YYY, 2CM2K, C0G4D, G728N, J519N, K535N, G740N, H534N, J520N, K536N, G744N, J521N, and 6809.

## Dell UPS

Dell UPS devices are classified under All Devices → Power Devices → UPS in the tree on the left side. User can click the discovered device to see all the inventoried tables as shown in the following figure.

## Supported Models

OpenManage Essentials currently supports the following Dell UPS devices: 1000T HV, 4200R HV, 1920T LV, 1920T HV, 500T LV, 500T HV, 1000R LV, 1000R HV, 1920R LV, 1920R HV, 2700R/T LV, 2700R/T HV, 2700R/T HV-US, 2700R Telco LV, 2700R Telco HV-US, 2700R Telco HV, 3750R HV-US, 3750R HV, 4200R HV-US, 4200R HV, 5600 LI HV-US, 5600 LI HV, 5600R OL HV-US, and 5600R OL HV.







The screenshot shows the Dell OpenManage Essentials v2.0 interface. On the left, a sidebar lists various device categories, with 'UPS' and 'K805N-UPS1' highlighted. The main panel displays the details for 'K805N-UPS1'. The 'Device Summary' section shows a health status of 'On' and a connection status of 'On'. The 'Software Agent Information' section shows the agent name 'Dell UPS SNMP Agent' and version '00.01'. The 'NIC Information' section shows the IP address '10.94.173.50' and MAC address '00:22:19:ff:8d:e2'. The 'Contact Information' section shows the name 'Computer Room Manager' and description 'Dell UPS Rack 4200W High Efficiency Online'. The 'Physical Battery Information' section shows the ABM status 'Resting' and seconds remaining '28080'.

Figure 20: Dell UPS Classification and Inventory

## Device Health

Health status reflects the overall health of the device contributed by their SNMP agent. The health status can be Critical, Warning, Normal or Unknown. Please refer to the Table 3 for more details:

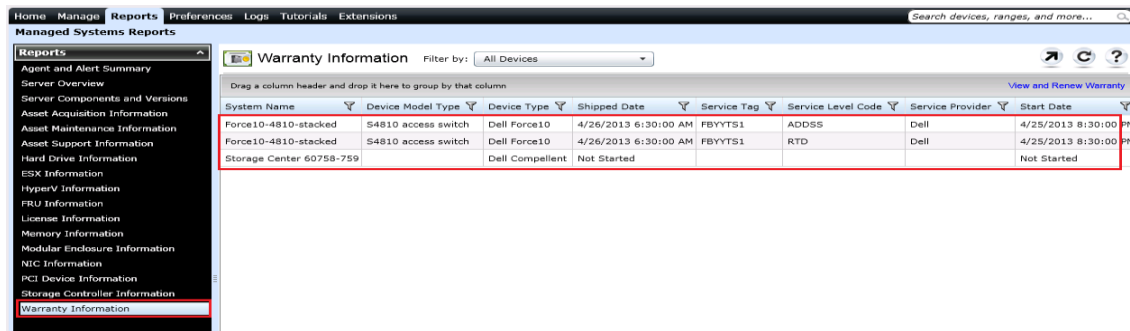
Table 3: Device Health Symbols

Symbol	Description
	Indicates that a device is critical and requires attention. This information is rolled up to the parent device type. For example if a PDU is in critical state and requires attention the same symbol is assigned to the parent device type, i.e. Power Devices. Critical health state is given the highest priority. That is, in a group, if different devices are in different states, and if one device is in critical state, then the state of the parent device type is set to critical.
	Indicates that there is a deviation from the expected behavior, but the device is still manageable.
	Indicates that the device is working as expected.
	Indicates the device does not have proper instrumentation or proper protocol was not used to discover the device.

## Warranty Information support

OpenManage Essentials v2.0 supports device warranty information through the Warranty Information report. Users can also view and renew warranty on the Warranty Information report page. This warranty information is collected at run time from Dell Support site by providing corresponding service tag of the hardware.

Warranty information is based on the service tag and is available for Dell EqualLogic Groups, Dell PowerVault NX3500, Brocade Fibre Channel, Dell Compellent, and Dell Networking devices. Warranty information is not available for Dell SonicWALL Firewall, PowerConnect W-Series, KVM, PDU, and UPS devices. The warranty report can be viewed by navigating to Reports → Warranty Information as shown in Figure 16.



System Name	Device Model Type	Device Type	Shipped Date	Service Tag	Service Level Code	Service Provider	Start Date
Force10-4810-stacked	S4810 access switch	Dell Force10	4/26/2013 6:30:00 AM	PBYTTS1	ADDSS	Dell	4/25/2013 8:30:00 PM
Force10-4810-stacked	S4810 access switch	Dell Force10	4/26/2013 6:30:00 AM	PBYTTS1	RTD	Dell	4/25/2013 8:30:00 PM
Storage Center 60758-759		Dell Compellent	Not Started				Not Started

Figure 21: Warranty Information

## Application Launch

Application launch provides a right-click action menu item on the discovered device to launch 1×1 console or application. OpenManage Essentials provides the capability to launch and navigate to the device-specific console for Dell EqualLogic Groups, PowerVault NX3500, SonicWALL Firewall, PowerConnect W-Series, Brocade Fibre Channel, Compellent, KVM, PDU, and UPS. Application launch action can be performed as shown in the following figure.

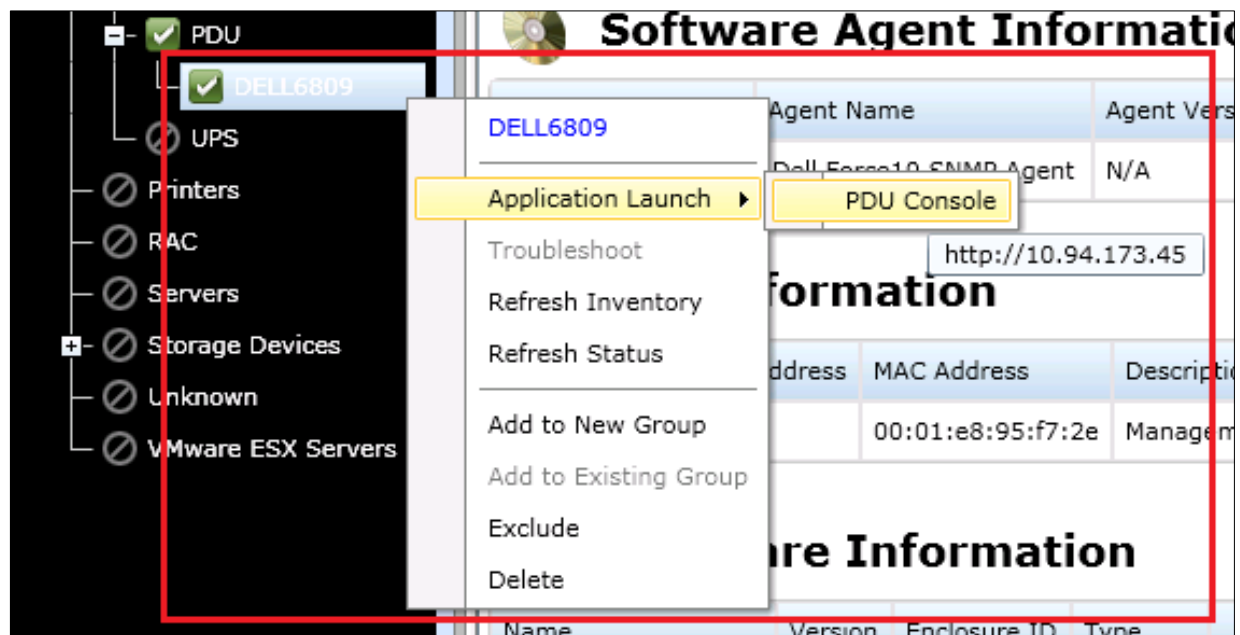


Figure 22: Application Launch for Dell PDU


## Dell OpenManage Essentials v2.0 - Device Support

### Configuring Custom URLs

OpenManage Essentials supports creation and launch of custom URLs on all device groups. This feature comes handy when user wants to visit same URL for a group of devices. Once created, any device falling under the group gets added with the custom URL launch.

### Creating a Custom URL

Steps to create a custom are as follows:

1. Click Preferences → Custom URL Settings.
2. Click  icon on right side.
3. Enter the Name, URL, Description and select the device type from the drop-down list. After entering the URL, you can also test the URL launch by clicking the “Test URL” button.
4. Click “Ok.”

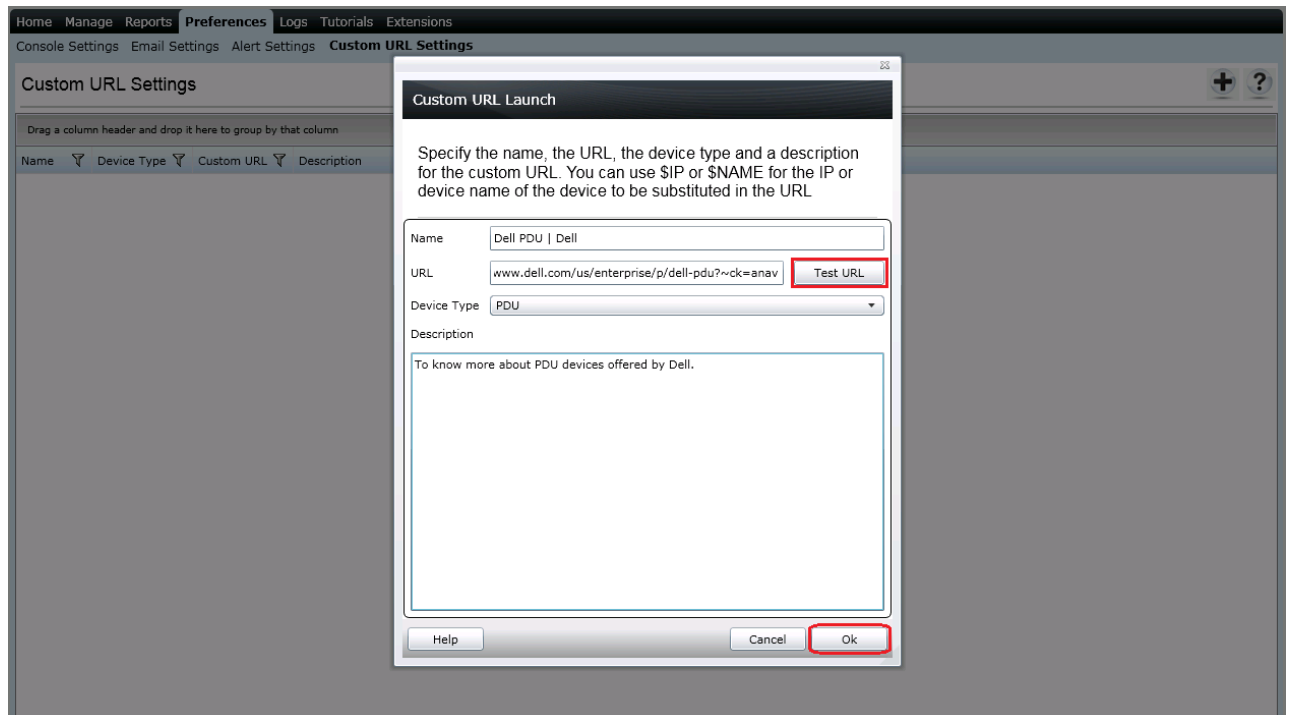


Figure 23: Creating a Custom URL

### Launching the Custom URL

Procedure for launching the custom URL is as follows:

1. Click Manage → Devices and select the device from the tree.
2. Right-click the device and select “Application Launch.”



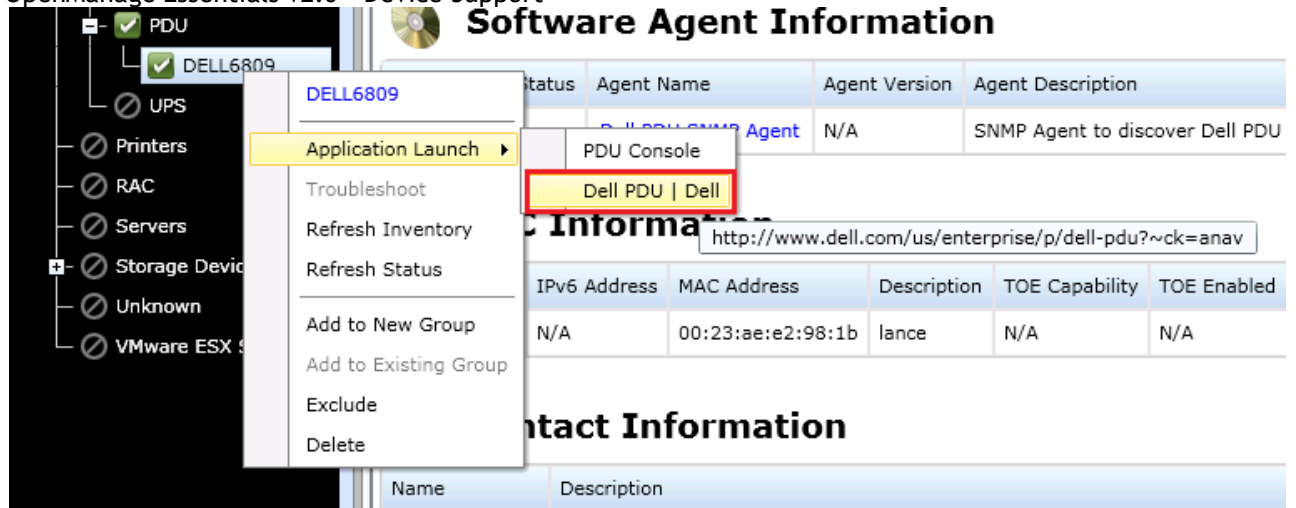


Figure 24: Launching the Custom URL

## Alerts (SNMP Traps)

The SNMP alerts received from discovered Dell devices will be shown under the alerts tab of the respective device. OpenManage Essentials supports SNMP V1/V2 alerts only (as of now). The status of the device is polled every time an SNMP trap is received from that device. For example, if a trap with critical severity is received from a device, status of that device is set to critical.

## Understanding the Alert types

The following alert log types are displayed:

Table 4: Alert Types

Icon	Alert	Description
	Normal Alerts	An event from a device that describes the successful operation of a unit, such as a power supply turning on.
	Warning Alerts	An event that is not necessarily significant, but may indicate a possible future problem, such as crossing a warning threshold.
	Critical Alerts	A significant event that indicates actual or imminent loss of data or loss of function, such as crossing a failure threshold or a hardware failure.
	Unknown Alerts	An event has occurred but there is insufficient information to classify it.
	Information Alerts	Provides information only.

## Dell OpenManage Essentials v2.0 - Device Support

### Viewing Alerts from a Device

Click on the device in the device tree then navigate to the “Alerts” tab as shown below:

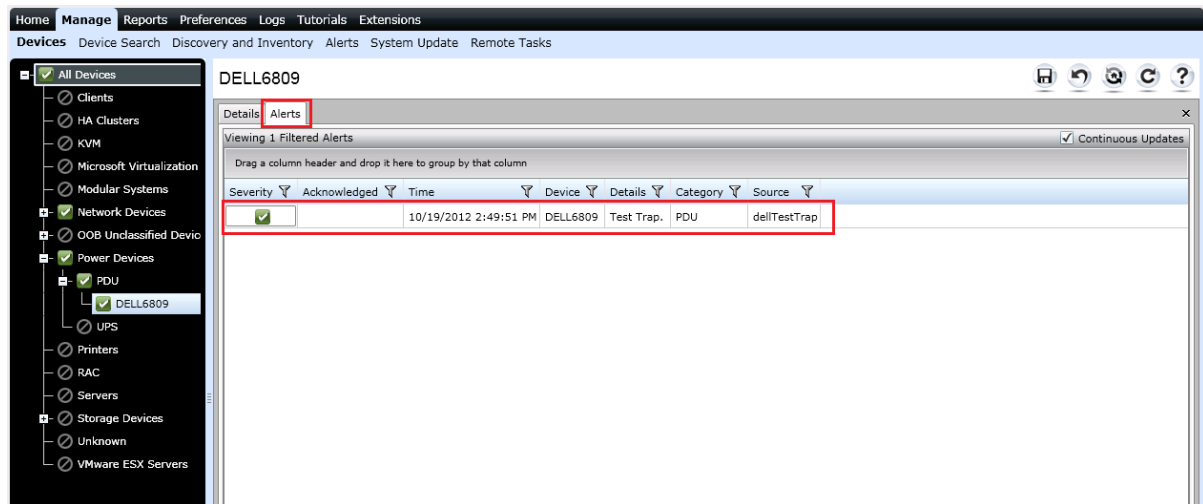


Figure 25: SNMP Alert from a Dell PDU

### Viewing Alert Categories

Predefined alerts for Dell PowerVault NX3500, SonicWALL Firewall, PowerConnect W-Series, Brocade Fibre Channel, Compellent, Dell Networking, KVM, PDU, and UPS devices can be seen under the Alert Categories section in OpenManage Essentials. Navigate to Manage → Alerts → Alert Categories, and then click the appropriate alert category.

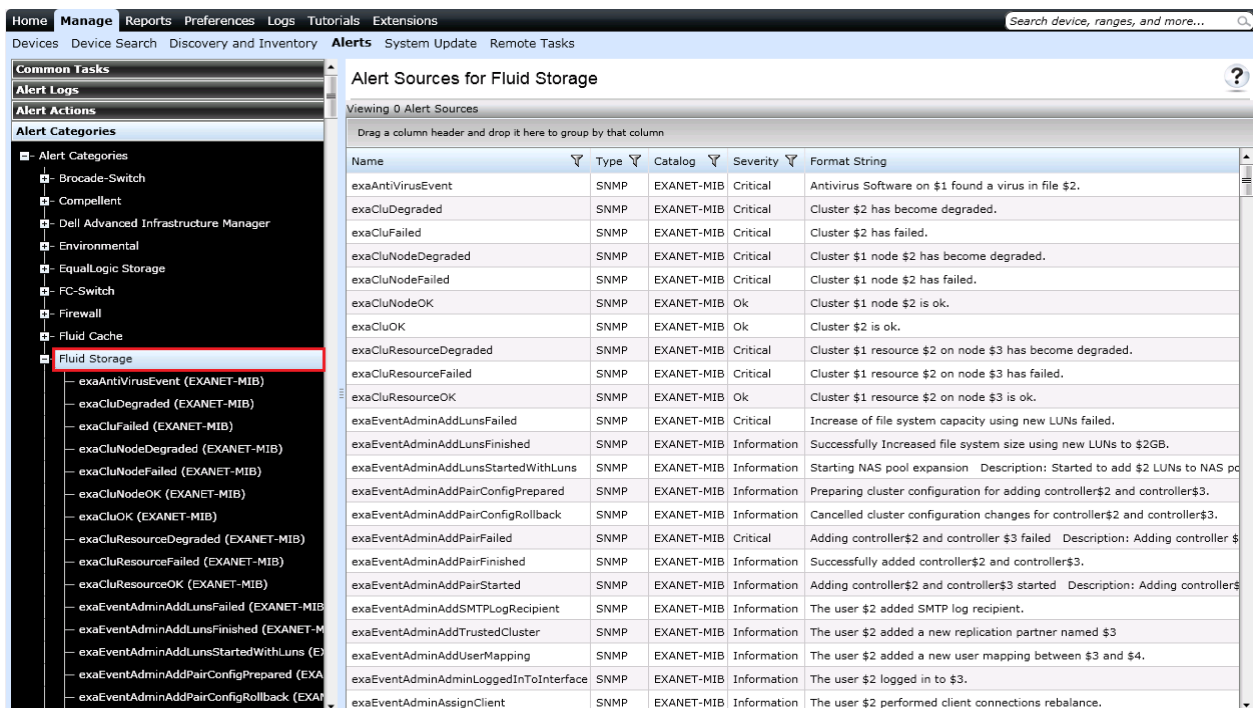


Figure 26: Alert Sources for Dell NAS Appliances

## Dell OpenManage Essentials v2.0 - Device Support

**Alert Sources for Compellent**

Viewing 25 Alert Sources

Drag a column header and drop it here to group by that column

Name	Type	Catalog	Severity	Format String
scCacheStatusChange	SNMP	COMPELLENT-MIB	By Value	\$8. Serial Number: \$1, Alert Definition ID: \$2, Cache Number: \$3, Cache Status: \$4
scCtrlCompStatusChange	SNMP	COMPELLENT-MIB	By Value	\$10. Serial Number: \$1, Alert Definition ID: \$2, Controller Number: \$3, Controller N
scCtrlStatusChange	SNMP	COMPELLENT-MIB	By Value	\$6. Serial Number: \$1, Alert Definition ID: \$2, Controller Number: \$3, Controller St
scDiskFolderStatusChange	SNMP	COMPELLENT-MIB	By Value	\$8. Serial Number: \$1, Alert Definition ID: \$2, Disk Folder Number: \$3, Disk Folder
scDiskStatusChange	SNMP	COMPELLENT-MIB	By Value	\$9. Serial Number: \$1, Alert Definition ID: \$2, Disk Number: \$3, Disk Status: \$4, D
scEndCompStatusChange	SNMP	COMPELLENT-MIB	By Value	\$10. Serial Number: \$1, Alert Definition ID: \$2, Enclosure Number: \$3, Enclosure N
scEndStatusChange	SNMP	COMPELLENT-MIB	By Value	\$9. Serial Number: \$1, Alert Definition ID: \$2, Enclosure Number: \$3, Enclosure Na
scLocalPortCondStatusChange	SNMP	COMPELLENT-MIB	Warning	\$4. Serial Number: \$1, Alert Definition ID: \$2, Ports Balanced: \$3, Trap Action: \$5,
scMiscAlert	SNMP	COMPELLENT-MIB	Ok	\$2. Serial Number: \$1, Trap Normalized: \$3
scMonitoredUPSStatusChange	SNMP	COMPELLENT-MIB	By Value	\$8. Serial Number: \$1, Alert Definition ID: \$2, UPS Number: \$3, UPS Status: \$4, UP
scServerStatusChange	SNMP	COMPELLENT-MIB	By Value	\$8. Serial Number: \$1, Alert Definition ID: \$2, Server Number: \$3, Server Status: \$
scSIDeviceStatusChange	SNMP	COMPELLENT-MIB	By Value	\$9. Serial Number: \$1, Alert Definition ID: \$2, SI Device Type: \$3, SI Device Status
scTestTrap	SNMP	COMPELLENT-MIB	Ok	\$3. Serial Number: \$1, Alert Definition ID: \$2
scVolumeStatusChange	SNMP	COMPELLENT-MIB	By Value	\$6. Serial Number: \$1, Alert Definition ID: \$2, Volume Number: \$3, Volume Status:
trapStatusComplete	SNMP	COMPELLENT-MIB	Ok	Compellent Trap in Complete state.. Variables: sysName=\$1,
trapStatusCritical	SNMP	COMPELLENT-MIB	Critical	Compellent Trap in Critical state.. Variables: sysName=\$1,
trapStatusDegraded	SNMP	COMPELLENT-MIB	Warning	Compellent Trap in Degraded state.. Variables: sysName=\$1,
trapStatusDown	SNMP	COMPELLENT-MIB	Warning	Compellent Trap in Down state.. Variables: sysName=\$1,
trapStatusEmergency	SNMP	COMPELLENT-MIB	Critical	Compellent Trap in Emergency state.. Variables: sysName=\$1,
trapStatusInform	SNMP	COMPELLENT-MIB	Ok	Compellent Trap in Inform state.. Variables: sysName=\$1,
trapStatusOkay	SNMP	COMPELLENT-MIB	Ok	Compellent Trap in Okay state.. Variables: sysName=\$1,
trapStatusOkay	SNMP	COMPELLENT-MIB	Ok	Compellent Trap in Okay state.. Variables: sysName=\$1,
trapStatusTest	SNMP	COMPELLENT-MIB	Ok	Compellent Trap in Test state.. Variables: sysName=\$1,
trapStatusTestSpecific	SNMP	COMPELLENT-MIB	Ok	Compellent Trap in Test Specific state.. Variables: sysName=\$1,

Figure 27: Alert Sources for Dell Compellent

**Alert Sources for Firewall**

Viewing 77 Alert Sources

Drag a column header and drop it here to group by that column

Name	Type	Catalog	Severity	Format String
swFwTrapAttack	SNMP	SONICWALL-FIREWALL-TRAP-MIB	By Value	Description: \$2
swFwTrapBlkWebSite	SNMP	SONICWALL-FIREWALL-TRAP-MIB	By Value	Description: \$2
swFwTrapEnhAntispam	SNMP	SONICWALL-FIREWALL-TRAP-MIB	By Value	Description: \$2
swFwTrapEnhApplicationControl	SNMP	SONICWALL-FIREWALL-TRAP-MIB	By Value	Description: \$2
swFwTrapEnhApplicationFirewall	SNMP	SONICWALL-FIREWALL-TRAP-MIB	By Value	Description: \$2
swFwTrapEnhARS	SNMP	SONICWALL-FIREWALL-TRAP-MIB	By Value	Description: \$2
swFwTrapEnhAuthAccess	SNMP	SONICWALL-FIREWALL-TRAP-MIB	By Value	Description: \$2
swFwTrapEnhBootp	SNMP	SONICWALL-FIREWALL-TRAP-MIB	By Value	Description: \$2
swFwTrapEnhCia	SNMP	SONICWALL-FIREWALL-TRAP-MIB	By Value	Description: \$2
swFwTrapEnhCrypt	SNMP	SONICWALL-FIREWALL-TRAP-MIB	By Value	Description: \$2
swFwTrapEnhDdns	SNMP	SONICWALL-FIREWALL-TRAP-MIB	By Value	Description: \$2
swFwTrapEnhDhcp	SNMP	SONICWALL-FIREWALL-TRAP-MIB	By Value	Description: \$2
swFwTrapEnhDhcpServer	SNMP	SONICWALL-FIREWALL-TRAP-MIB	By Value	Description: \$2
swFwTrapEnhDPISSL	SNMP	SONICWALL-FIREWALL-TRAP-MIB	Information	Description: \$2
swFwTrapEnhDynAddrObjs	SNMP	SONICWALL-FIREWALL-TRAP-MIB	Information	Description: \$2
swFwTrapEnhFtp	SNMP	SONICWALL-FIREWALL-TRAP-MIB	Information	Description: \$2
swFwTrapEnhFwEvent	SNMP	SONICWALL-FIREWALL-TRAP-MIB	By Value	Description: \$2
swFwTrapEnhFwHardware	SNMP	SONICWALL-FIREWALL-TRAP-MIB	By Value	Description: \$2
swFwTrapEnhFwLogging	SNMP	SONICWALL-FIREWALL-TRAP-MIB	By Value	Description: \$2
swFwTrapEnhFwRule	SNMP	SONICWALL-FIREWALL-TRAP-MIB	By Value	Description: \$2
swFwTrapEnhGms	SNMP	SONICWALL-FIREWALL-TRAP-MIB	By Value	Description: \$2
swFwTrapEnhHtp	SNMP	SONICWALL-FIREWALL-TRAP-MIB	By Value	Description: \$2

Figure 28: Alert Sources for Dell SonicWALL Firewall

## Dell OpenManage Essentials v2.0 - Device Support

**Alert Sources for Network**

Viewing 107 Alert Sources

Drag a column header and drop it here to group by that column

Name	Type	Catalog	Severity	Format String
bpLinkBundleImbalance	SNMP	F10-BPSTATS-MIB	Warning	Trap generated when traffic imbalance observe
bpLinkBundleImbalanceClear	SNMP	F10-BPSTATS-MIB	Ok	Trap generated when traffic imbalance is no longer
camAuditError	SNMP	FORCE10-SYSTEM-COMPONENT-MIB	Critical	sysCompAlarmVarString: \$2, sysCompAlarmLe
camIsFull	SNMP	FORCE10-SYSTEM-COMPONENT-MIB	Warning	sysCompAlarmVarString: \$2, sysCompAlarmLe
camUsageThresholdExceed	SNMP	FORCE10-SYSTEM-COMPONENT-MIB	Critical	sysCompAlarmVarString: \$2, sysCompAlarmLe
chAlarmAcDcMixedPowerSupplyDetect	SNMP	F10-CHASSIS-MIB	Ok	chAlarmVarString: \$2, chAlarmVarInteger: \$1,
chAlarmBgpEstb	SNMP	F10-CHASSIS-MIB	Ok	chAlarmVarString: \$2, chAlarmVarInteger: \$1,
chAlarmBgpXsition	SNMP	F10-CHASSIS-MIB	Ok	chAlarmVarString: \$2, chAlarmVarInteger: \$1,
chAlarmCardDown	SNMP	F10-CHASSIS-MIB	Critical	chAlarmVarString: \$2, chAlarmVarInteger: \$1,
chAlarmCardMismatch	SNMP	F10-CHASSIS-MIB	Warning	chAlarmVarString: \$2, chAlarmVarInteger: \$1,
chAlarmCardOffline	SNMP	F10-CHASSIS-MIB	Warning	chAlarmVarString: \$2, chAlarmVarInteger: \$1,
chAlarmCardProblem	SNMP	F10-CHASSIS-MIB	Critical	chAlarmVarString: \$2, chAlarmVarInteger: \$1,
chAlarmCardRemove	SNMP	F10-CHASSIS-MIB	Critical	chAlarmVarString: \$2, chAlarmVarInteger: \$1,
chAlarmCardReset	SNMP	F10-CHASSIS-MIB	Warning	chAlarmVarString: \$2, chAlarmVarInteger: \$1,
chAlarmCardUp	SNMP	F10-CHASSIS-MIB	Information	chAlarmVarString: \$2, chAlarmVarInteger: \$1,
chAlarmCardVersionMismatch	SNMP	F10-CHASSIS-MIB	Warning	chAlarmVarString: \$2, chAlarmVarInteger: \$1,
chAlarmClrCpuThreshold	SNMP	F10-CHASSIS-MIB	Ok	chAlarmVarString: \$2, chAlarmVarInteger: \$1,
chAlarmClrMemThreshold	SNMP	F10-CHASSIS-MIB	Ok	chAlarmVarString: \$2, chAlarmVarInteger: \$1,
chAlarmCutoff	SNMP	F10-CHASSIS-MIB	Warning	chAlarmVarString: \$2, chAlarmVarInteger: \$1,
chAlarmExdCpuThreshold	SNMP	F10-CHASSIS-MIB	Critical	chAlarmVarString: \$2, chAlarmVarInteger: \$1,
chAlarmExdMemThreshold	SNMP	F10-CHASSIS-MIB	Critical	chAlarmVarString: \$2, chAlarmVarInteger: \$1,
chAlarmFanTrayClear	SNMP	F10-CHASSIS-MIB	Ok	chAlarmVarString: \$2, chAlarmVarInteger: \$1,
chAlarmFanTrayDown	SNMP	F10-CHASSIS-MIB	Critical	chAlarmVarString: \$2, chAlarmVarInteger: \$1,

Figure 29: Alert Sources for Dell Networking

**Alert Sources for Brocade-Switch**

Viewing 183 Alert Sources

Drag a column header and drop it here to group by that column

Name	Type	Catalog	Severity	Format String
connUnitDeletedTrap (Brocade MIB)	SNMP	Brocade MIB	Warning	Varbind values are: connUnitId=\$1
connUnitEventTrap (Brocade MIB)	SNMP	Brocade MIB	Information	Varbind values are: connUnitEventId=\$1 connUnitEventType=\$2 connUnitEventObject=\$3
connUnitPortStatusChange (Brocade MIB)	SNMP	Brocade MIB	Information	Varbind values are: connUnitPortStatus=\$1 connUnitPortState=\$2
connUnitSensorStatusChange (Brocade MIB)	SNMP	Brocade MIB	Information	Varbind values are: connUnitSensorStatus=\$1
connUnitStatusChange (Brocade MIB)	SNMP	Brocade MIB	Information	Varbind values are: connUnitStatus=\$1 connUnitState=\$2
cpStatusChanged (Brocade MIB)	SNMP	Brocade MIB	By Value	This trap is sent when status of any CP object is changed. CPStatus: \$1, LastEvent: \$2, SV
fallingAlarm (Brocade MIB)	SNMP	Brocade MIB	Warning	The SNMP trap that is generated when an alarm entry crosses its falling threshold. Alarm V
fcEosFruActive (Brocade MIB)	SNMP	Brocade MIB	Ok	Varbind values are: fcEosFruCode=\$1 fcEosFruPosition=\$2 fcEosSysSwitchName=\$3 fcEos
fcEosFruBackup (Brocade MIB)	SNMP	Brocade MIB	Ok	Varbind values are: fcEosFruCode=\$1 fcEosFruPosition=\$2 fcEosSysSwitchName=\$3 fcEos
fcEosFruFailed (Brocade MIB)	SNMP	Brocade MIB	Critical	Varbind values are: fcEosFruCode=\$1 fcEosFruPosition=\$2 fcEosSysSwitchName=\$3 fcEos
fcEosFruRemoved (Brocade MIB)	SNMP	Brocade MIB	Critical	Varbind values are: fcEosFruCode=\$1 fcEosFruPosition=\$2 fcEosSysSwitchName=\$3 fcEos
fcEosFruScn (Brocade MIB)	SNMP	Brocade MIB	Critical	Varbind values are: fcEosFruStatus=\$1
fcEosFruUpdate (Brocade MIB)	SNMP	Brocade MIB	Information	Varbind values are: fcEosFruCode=\$1 fcEosFruPosition=\$2 fcEosSysSwitchName=\$3 fcEos
fcEosLinkAddedEvent (Brocade MIB)	SNMP	Brocade MIB	Information	Varbind values are: fcEosPortIndex=\$1 fcEosPortName=\$2 fcEosPortWWN=\$3 fcEosSysSv
fcEosLinkBitErrorEvent (Brocade MIB)	SNMP	Brocade MIB	Critical	Varbind values are: fcEosPortIndex=\$1 fcEosPortName=\$2 fcEosPortWWN=\$3 fcEosSysSv

Figure 30: Alert Sources for Brocade Fibre Channel

## Dell OpenManage Essentials v2.0 - Device Support

Home **Manage** Reports Preferences Logs Tutorials Extensions Search devices, ranges, and more...

Devices Device Search Discovery and Inventory **Alerts** System Update Remote Tasks

### Alert Sources for Keyboard-Video-Mouse (KVM)

Viewing 0 Alert Sources

Drag a column header and drop it here to group by that column

Name	Type	Catalog	Severity	Format String
dellrcsg2AggregatedTargetDeviceStatusChangedTrap	SNMP	DELLRCSG2-TRAP-MIB	Ok	Aggregate server status changed.
dellrcsg2CaCertificateLoaded	SNMP	DELLRCSG2-TRAP-MIB	Ok	CA Certificate has been updated, by User: \$1.
dellrcsg2ConfigurationFileLoadedTrap	SNMP	DELLRCSG2-TRAP-MIB	Ok	Configuration file loaded in the RCS. Command issued by user: \$1.
dellrcsg2FactoryDefaultsSetTrap	SNMP	DELLRCSG2-TRAP-MIB	Ok	The RCS was commanded to set itself to factory defaults.
dellrcsg2FanFailureTrap	SNMP	DELLRCSG2-TRAP-MIB	Critical	Fan failure has been detected.
dellrcsg2ImageFileUpgradeResultsTrap	SNMP	DELLRCSG2-TRAP-MIB	Ok	Image upgrade result: \$1
dellrcsg2ImageFileUpgradeStarted	SNMP	DELLRCSG2-TRAP-MIB	Ok	Image upgrade started. Command issued by user: \$1.
dellrcsg2LocalPortSessionStartedTrap	SNMP	DELLRCSG2-TRAP-MIB	Ok	Local port target session started. Target device: \$1.
dellrcsg2LocalPortSessionStoppedTrap	SNMP	DELLRCSG2-TRAP-MIB	Ok	Local port target session stopped. Target device: \$1.
dellrcsg2LocalPortSessionTerminatedTrap	SNMP	DELLRCSG2-TRAP-MIB	Critical	Local Port Target session terminated. Command issued by user: \$1.
dellrcsg2LocalPortVirtualMediaDriveMapped	SNMP	DELLRCSG2-TRAP-MIB	Ok	Virtual Media Drive Mapped on the local port. Target device: \$1.
dellrcsg2LocalPortVirtualMediaDriveUnmapped	SNMP	DELLRCSG2-TRAP-MIB	Warning	Virtual Media Drive Unmapped on the local port. Target device: \$1.
dellrcsg2LocalPortVirtualMediaSessionReservedTrap	SNMP	DELLRCSG2-TRAP-MIB	Ok	Local Port virtual media session has been reserved. Target device: \$1.
dellrcsg2LocalPortVirtualMediaSessionStartedTrap	SNMP	DELLRCSG2-TRAP-MIB	Ok	Local virtual media session started. User: \$1. Target device: \$1.
dellrcsg2LocalPortVirtualMediaSessionStoppedTrap	SNMP	DELLRCSG2-TRAP-MIB	Warning	Local virtual media session stopped. User: \$1. Target device: \$1.
dellrcsg2LocalPortVirtualMediaSessionTerminatedTrap	SNMP	DELLRCSG2-TRAP-MIB	Critical	Local Port Virtual Media session terminated. Command issued by user: \$1.
dellrcsg2LocalPortVirtualMediaSessionUnreservedTrap	SNMP	DELLRCSG2-TRAP-MIB	Warning	Local Port virtual media session has been unreserved. Target device: \$1.

Figure 31: Alert Sources for Dell KVM

Home **Manage** Reports Preferences Logs Tutorials Extensions Search devices, ranges, and more...

Devices Device Search Discovery and Inventory **Alerts** System Update Remote Tasks

### Alert Sources for PDU

Viewing 64 Alert Sources

Drag a column header and drop it here to group by that column

Name	Type	Catalog	Severity	Format String
accessViolationConsole	SNMP	PDU	Warning	Three unsuccessful logins were attempted via console.
accessViolationHTTP	SNMP	PDU	Warning	An unsuccessful attempt to login via HTTP.
actionCancelled	SNMP	PDU	Ok	\$2 outlet \$3 action has been cancelled.
actionDeleted	SNMP	PDU	Ok	\$2 outlet \$3 action has been deleted.
actionFailed	SNMP	PDU	Warning	\$2 outlet \$3 action has failed to complete.
actionInit	SNMP	PDU	Ok	\$2 outlet \$3 action has been initialized.
cANBusOffCleared	SNMP	PDU	Ok	\$2 CAN bus off was cleared.
canBusOffSet	SNMP	PDU	Warning	\$2 CAN bus off was set.
componentCommLostCleared	SNMP	PDU	Ok	\$2 comm with on board component was re-established.
componentCommLostSet	SNMP	PDU	Critical	\$2 lost communication with an on board component.
configChangeSNMP	SNMP	PDU	Warning	The SNMP configuration has been changed.
dellTestTrap	SNMP	PDU	Ok	Test Trap.
deviceCommunicationLostCleared	SNMP	PDU	Ok	\$2 lost communication with device has been re-established.
deviceCommunicationLostSet	SNMP	PDU	Critical	\$2 lost communication with device.
deviceConfigurationChange	SNMP	PDU	Ok	\$2 device configuration has been changed.
deviceLowLoadCleared	SNMP	PDU	Ok	\$2 device is no longer below the 'Low Load' threshold.

Figure 32: Alert Sources for Dell PDU

Home **Manage** Reports Preferences Logs Tutorials Extensions Search devices, ranges, and more...

Devices Device Search Discovery and Inventory **Alerts** System Update Remote Tasks

### Alert Sources for UPS

Viewing 108 Alert Sources

Drag a column header and drop it here to group by that column

Name	Type	Catalog	Severity	Format String
trapABMOff	SNMP	UPS	Warning	ABM state is Powered Off.
trapABMOn	SNMP	UPS	Warning	ABM state is Powered On.
trapBatteryConnected	SNMP	UPS	Information	Batteries have been connected to UPS.
trapBatteryDisconnected	SNMP	UPS	Critical	Batteries have been disconnected from the UPS.
trapBatteryLow	SNMP	UPS	Critical	UPS is running on Low Battery.
trapBatteryNeedReplacement	SNMP	UPS	Critical	Battery test failed, battery needs to be replaced.
trapBatteryOk	SNMP	UPS	Information	Battery is functioning normally.
trapBatteryOverVoltage	SNMP	UPS	Critical	Battery DC Voltage has exceeded the "Over Voltage" threshold.
trapBatteryOverVoltageOk	SNMP	UPS	Information	Battery DC over voltage ok.
trapBatteryReplacementDone	SNMP	UPS	Information	Battery replacement is done.
trapBatteryTestDone	SNMP	UPS	Information	Battery test done.
trapBatteryTestInProgress	SNMP	UPS	Information	Battery manual or automatic test in progress.
trapBypassFrequencyOutOfRange	SNMP	UPS	Warning	UPS Bypass Frequency is out of Range.
trapBypassFrequencyOutOfRangeOk	SNMP	UPS	Information	UPS Bypass Frequency is no longer out of Range.
trapBypassNotAvailable	SNMP	UPS	Warning	Bypass not available.
trapBypassNotAvailableOk	SNMP	UPS	Information	Bypass not available ok.

Figure 33: Alert Sources for Dell UPS

## Configuring Alert Actions

Alert actions occur on all alerts received in the OpenManage Essentials console. The alert is received and processed to take appropriate action depending upon the user configuration for that alert. To configure an alert action, navigate to Manage → Alerts → Alert Actions and then right-click on the appropriate category as shown in Figure 34.

The following alert actions are supported in OpenManage Essentials:

- Application Launch
- E-mail Notification
- Ignoring Alerts
- Forwarding Alerts

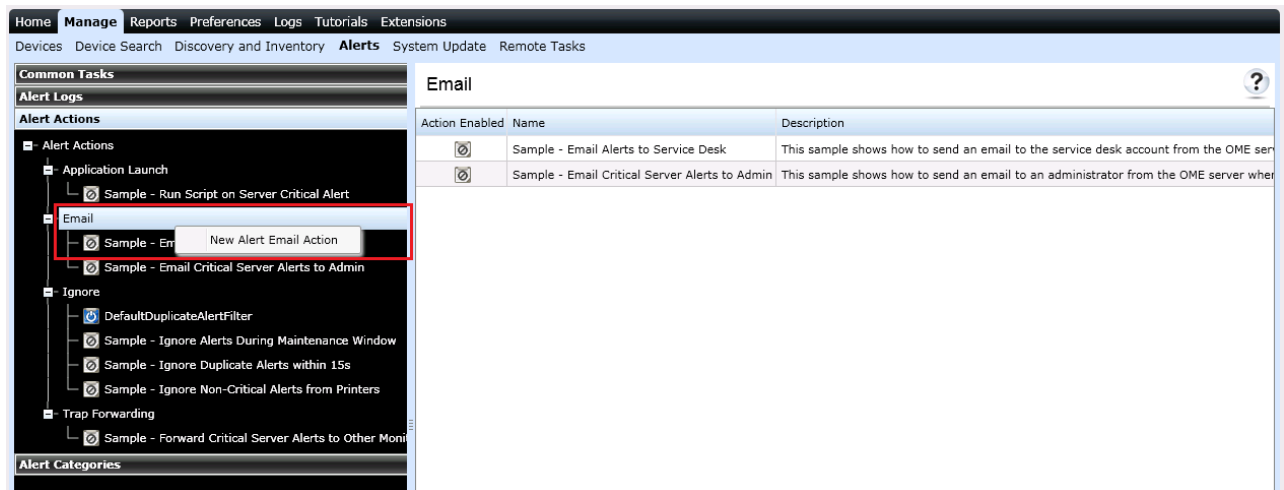


Figure 34: Configuring Email Alert Action

## Configuring Warranty Email Notifications

You can configure OpenManage Essentials to send a warranty notification of your devices at periodic intervals through email based on the configuration done by you. The warranty notification email provides a list of devices and appropriate links that you can click to renew the warranty of the devices. Follow these steps to configure Warranty Email Notifications:

1. Click Preferences → Warranty Notification Settings.
2. Under Warranty Email Notifications, select “Enable Warranty Email Notifications.”
3. In the “To” field, type the email addresses of the recipients (semicolon separated).
4. In the “From” field, type the email address from which the warranty notification email is to be sent.
5. Set the criteria for the devices to be included in the warranty notification email.
6. Set the frequency at which you want to receive the warranty notification email.
7. To include devices with expired warranty or no warranty information in the warranty notification email, select “Include Devices with Expired Warranties.”



8. In the “Next Email will Send On” field, select the date and time at which you want to receive the next warranty notification e-mail.
9. If you want to configure the SMTP email server, click “Email Settings.”
10. Click “Apply.”

The screenshot shows the 'Warranty Notification Settings' page. The top navigation bar includes 'Home', 'Manage', 'Reports', 'Preferences' (selected), 'Logs', 'Tutorials', and 'Extensions'. Below this, a sub-navigation bar includes 'Console Settings', 'Email Settings', 'Alert Settings', 'Custom URL Settings', 'Warranty Notification Settings' (selected), and 'Device Group Permissions'.

The main section is titled 'Warranty Notification Settings'. It contains two sub-sections:

- Warranty Email Notifications:**
  - ☒ Enable Warranty Email Notifications
  - To: a@dell.com; b@dell.com; c@dell.com (3 Recipients)
  - From: abc@dell.com
  - All Devices with 90 Days or less of warranty
  - ☒ Include Devices with Expired Warranties
  - Send email every 7 Days
  - Next Email Will Send On 6/27/2013 11:30 AM (UTC+05:30)
  - Email Settings (button)
- Warranty Scoreboard Notifications:**
  - ☒ Enable Warranty Scoreboard Notifications
  - All Devices with 90 Days or less of warranty
  - ☐ Include Devices with Expired Warranties

At the bottom, there are 'Cancel' and 'Apply' buttons. The 'Apply' button is highlighted with a red box.

Figure 35: Warranty Email Notification Settings

## Configuring Warranty Scoreboard Notifications

You can configure OpenManage Essentials to display a warranty scoreboard notification icon in the heading banner. If any device meets the set criteria, the OpenManage Essentials heading banner displays the warranty scoreboard notification icon including the number of devices. Follow these steps to configure Warranty Scoreboard Notifications:

1. Click Preferences → Warranty Notification Settings.
2. Under Warranty Scoreboard Notifications, select “Enable Warranty Scoreboard Notifications.”
3. Set the criteria for the devices to be included in the warranty notification scoreboard.
4. To include devices with expired warranty or no warranty information in the warranty notifications scoreboard, select “Include Devices with Expired Warranties.”
5. Click “Apply.”

**Warranty Notification Settings**

**Warranty Email Notifications**

☐ Enable Warranty Email Notifications

To: a@dell.com; b@dell.com; c@dell.com 3 Recipients

From: abc@dell.com

All Devices with 90 Days or less of warranty

☐ Include Devices with Expired Warranties

Send email every 7 Days

Next Email Will Send On 6/27/2013 11:30 AM (UTC+05:30)

Email Settings

**Warranty Scoreboard Notifications**

☒ Enable Warranty Scoreboard Notifications

All Devices with 90 Days or less of warranty

☒ Include Devices with Expired Warranties

Cancel Apply

Figure 36: Warranty Scoreboard Notification Settings

## Troubleshooting

### OpenManage Essentials Troubleshooting Tool

The OpenManage Essentials Troubleshooting Tool is a standalone tool that installs along with OpenManage Essentials. You can use this tool for a wide array of protocol related problems that are often at the root of discovery and alert issues.

#### Troubleshooting Discovery of a Dell Device

1. Ensure that SNMP is enabled and properly configured on the target device by accessing its Web Interface.
2. Launch the Dell Troubleshooting Tool.
3. Navigate to Protocols (Remote Box) tab.
4. Give IP of the target device.
5. Select “SNMP” in the “Select Protocol(s)” pane.
6. Provide correct community name and click “Run Test.”

The “Result” window should show the SNMP test results for that device.

**Example (refer Figure 37):** For a Dell UPS, following rows should display:

1. MIB-II (System Name)
2. MIB-II (MAC Address)
3. Dell UPS (Family Name)



**Troubleshooting Tool**

DELL TROUBLESHOOTING TOOL Reset Help About

Protocols (Remote Box) Miscellaneous (Local Box)

Steps: 1) Enter IP Address of the target device, 2) Select protocol(s) from the list box to verify for the given device, 3) Provide protocol specific settings and 4) Click on "Run Test" button.

Remote Device

IP Address/Host Name: 10.94.173.50

Test

Select Protocol(s):

- Database
- Dell EMC
- ICMP
- IPMI
- Name Resolution
- OMSA Remote Enablement
- Port
- PowerVault Modular Disk Arrays
- Services
- SNMP**
- SSH
- WMI
- WSMAN

Configure SNMP Settings:

Community Name: public

Retries: 1

Timeout: 4 seconds

Execution

Run Test

Result

Time: 10/19/2012 5:38:07 PM Device: 10.94.173.50

Protocols Selected are:

- SNMP

SNMP	
MIB-II (System Name)	K805N-UPS1
MIB-II (MAC Address)	00:22:19:FF:8D:E2
Dell UPS (Family Name)	UPS ONL

[Top](#)

Figure 37: Troubleshooting Tool: SNMP Test for Dell UPS

## Dell OpenManage Essentials v2.0 - Device Support

### **ProSupport with Dell SupportAssist**

The Dell SupportAssist plug-in proactively identifies hardware failures in your IT environment, and provides you with an efficient and personalized support experience. The Dell SupportAssist plug-in is bundled as part of the OpenManage Essentials installation media and can be installed from there as required.

Dell SupportAssist integrates with OpenManage Essentials to give you the added capabilities of secure remote monitoring so you know how your systems are performing at all times. SupportAssist is designed to help you manage your environment proactively with the following features:

- Detects and analyzes problems using automated data collection and diagnostics
- Helps accelerate resolution by automatically generating notifications and accurate case information with your Dell support team
- Provides parts replacement, as needed, directly from Dell

Dell Networking devices are currently covered under ProSupport with Dell SupportAssist. For more information please visit: [www.dell.com/learn/services/support-assist](http://www.dell.com/learn/services/support-assist)

### **Learn More**

Please Visit: [www.delltechcenter.com/ome](http://www.delltechcenter.com/ome)