Dell EMC VxFlex Ready Node 13G

Server Inspection Guide

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DELL EMC

Preface

As part of an effort to improve its product lines, Dell EMC periodically releases revisions of its software and hardware. Therefore, some functions described in this document might not be supported by all versions of the software or hardware currently in use. The product release notes provide the most up-to-date information on product features.

Contact your Dell EMC technical support professional if a product does not function properly or does not function as described in this document.

Note

This document was accurate at publication time. Go to Dell EMC Online Support (https://support.emc.com) to ensure that you are using the latest version of this document.

Previous versions of Dell EMC VxFlex OS were marketed under the name Dell EMC ScaleIO.

Similarly, previous versions of Dell EMC VxFlex Ready Node were marketed under the name Dell EMC ScaleIO Ready Node.

References to the old names in the product, documentation, or software, etc. will change over time.

Note

Software and technical aspects apply equally, regardless of the branding of the product.

Related documentation

The release notes for your version includes the latest information for your product.

The following Dell EMC publication sets provide information about your VxFlex OS or VxFlex Ready Node product:

- VxFlex OS software (downloadable as VxFlex OS Software <version> Documentation set)
- VxFlex Ready Node with AMS (downloadable as VxFlex Ready Node with AMS Documentation set)
- VxFlex Ready Node no AMS (downloadable as VxFlex Ready Node no AMS Documentation set)
- VxRack Node 100 Series (downloadable as VxRack Node 100 Series Documentation set)

You can download the release notes, the document sets, and other related documentation from Dell EMC Online Support.

Typographical conventions

Dell EMC uses the following type style conventions in this document:

Bold	Used for names of interface elements, such as names of windows, dialog boxes, buttons, fields, tab names, key names, and menu paths (what the user specifically selects or clicks)
Italic	Used for full titles of publications referenced in text

`Monospace`	Used for: • System code • System output, such as an error message or script • Pathnames, filenames, prompts, and syntax • Commands and options
Monospace italic	Used for variables
`Monospace bold`	Used for user input
[ ]	Square brackets enclose optional values
|	Vertical bar indicates alternate selections - the bar means “or”
{ }	Braces enclose content that the user must specify, such as x or y or z
...	Ellipses indicate nonessential information omitted from the example

Where to get help

Dell EMC support, product, and licensing information can be obtained as follows:

Product information

For documentation, release notes, software updates, or information about Dell EMC products, go to Dell EMC Online Support at https://support.emc.com.

Technical support

Go to Dell EMC Online Support and click Service Center. You will see several options for contacting Dell EMC Technical Support. Note that to open a service request, you must have a valid support agreement. Contact your Dell EMC sales representative for details about obtaining a valid support agreement or with questions about your account.

Your comments

Your suggestions will help us continue to improve the accuracy, organization, and overall quality of the user publications. Send your opinions of this document to techpubcomments@emc.com.

Introduction

This document provides an overview of the inspection process for VxFlex Ready Node servers.

When the node is powered on, the front panel blue LED should light up and be steady. In addition, neither the power supplies nor drives should have any amber LEDs lit.

If the front panel LEDs are either blinking or colored amber, or if the drives light up an amber LED, use the information in the following sections to check the nodes. The sensor information and the Event log information are available via the BMC. You can access the information on the drives from the PERCCLI utility.

Before you begin, ensure that you know the IP address of the BMC (iDRAC) port on the server.

Perform the following steps to inspect a server:

- Check the hardware installation.

- Check the sensors.
- Enable the disk utility.
- Verify the drive status.
- Prepare the hardware for failure analysis, if necessary.

Hardware installation checklist

This section includes a hardware checklist to be used by the CE.

It is the CE's responsibility to complete this checklist.

Customer Name:		CE Name:
Customer Location:		
Installation Type:	☐ New Installation ☐ Add-On ☐ Revisit ☐ Other (specify) _____	
Install Start Date:	Install End Date:	
VxFlex OS Hardware Info		
VxFlex OS Node Type	Check all that apply: ☐ 1U1N Qty: ☐ 2U1N Qty: ☐ Mgmt. Server	
Network Equipment:	☐ Mgmt Switch Qty: ☐ Data Switch Qty: ☐ Mgmt. Server	
Packaging Issues:		
Item	**Observation**	**Notes**
Missing rails/screws/docs		
Physical damage to node		
Physical damage to switch		
Other		
Hardware Checks (prior to powering on the server)		
Item	**Observation**	**Notes**
Server/node can move freely on rails		
PSU seated (reseat if loose)		
Power-cords secured with retaining clips		

Drives seated (do *NOT* pull drives yet)		
Bezels installed if available		
Rack stable and castor wheels locked		
Network cables labelled and clicked-in		
Hardware checks: (post power-up)		
Item	**Observation**	**Notes**
Server responds to power-button		
All PSUs power-on		
Rear fan-spin (feel air-flow)		
PSU has no amber LED on		
Server has no amber LED on		
HDD/SSD has no amber LED on (reseat and reset the server)		
Attach KVM, reset/power-cycle server and note down error displayed, if any are shown. Open SRs for errors.		
Other issues:		
Briefly list any hardware issues identified (list any cases/SRs opened):		

Prerequisites

Prerequisites for inspecting a server in the VxFlex Ready Node environment.

General prerequisites:

- Ensure that you know the IP address range, subnet, and gateway IP addresses for the BMC (iDRAC) port for all servers.
- To connect via a service PC or laptop computer using SSH/RDP, ensure that the computer has a functional network port and an available IP address (and subnet and gateway) on the management network.
- For console operations (KVM access), ensure that you have either a VGA tool kit to allow console connection from a laptop computer to a server, or a computer screen and keyboard connection to the rack.
- Java requirements:

Use	Required version
VxFlex OS GUI	Java 1.8 latest update

Use	Required version
BMC (iDRAC) management client (Java console)	Java 1.7 latest update

- In your Internet browser, ensure that pop-ups are enabled (or enabled just for the Java console features).
- The following internet browsers are supported:
  - Firefox 30 or higher
  - Internet Explorer 8 or higher

Verify the status of the system hardware, storage controller, and disks

Use the following procedure to verify the status of the system hardware, storage controller, and disks in a VxFlex Ready Node server.

Before you begin

Ensure that you know:

- The IP address of the BMC (iDRAC) port
- The username and password for the BMC (iDRAC) portal (default username and password are root and password)

Procedure

1. From a browser, go to http://*<BMC/iDRAC_IP_address>*.
2. In the **DELL Console Login** window, type the user name and password, and then click **Login**.

   The **System Summary** dashboard displays the high-level status of all hardware devices in the **Server Health** pane.
   In an ideal scenario, all hardware sensors are green.
3. In the **Quick Launch Tasks** pane, select **View Logs**.

   The **System Event Log** is displayed with color-coded severity levels.
4. Check whether the System Event Log displays either of the following RAID controller errors:
   - `The PERC1 battery has failed`
   - `Integrated RAID Controller 1 is unable to recover cached data from the Battery Backup Unit (BBU).`

   If either of these alerts appears in the system event log, it is possible that the RAID storage controller has failed and requires replacement. Refer to the *VxFlex Ready Node v 2.x Integrated Storage Controller Card Replace FRU Guide*. In order to avoid data loss or data integrity issues, ensure that you follow the special procedure for preparing the server for part replacement when RAID controller errors occur.

5. Check whether either of the following errors occurs for a physical disk:
   - `The rebuild of Disk 0 in Backplane 1 of Integrated RAID Controller 1 failed due to errors on the source physical disk.`

- `A block on Disk 0 in Backplane 1 of Integrated RAID Controller 1 was punctured by the controller.`

If either of these alerts appears in the system event log, one of the disks on the SDS may have failed and requires replacement. Refer to the relevant *VxFlex Ready Node v2.x Disk Replace FRU Guide* . In order to avoid data loss or data integrity issues, follow any additional instructions for replacing a disk when either of these errors occurs.

6. Ensure that any power supply- and fan-related events in the event log are non-repetitive. Repetitive events may be due to the intermittent nature of faults, such as poor physical connections.

   For repetitive events, it is recommended that you remove the relevant hardware module and replace it in its socket.

7. In the navigation pane, select **Storage** > **Controllers**.

   The controller-related information is displayed in the **Health and Properties** table, with the controller type shown in the **Name** column.

   For example:

   ```
   PERC H730 Mini (Embedded)
   ```

8. In the navigation pane, select **Storage** > **Physical Disks**.

   Information about the physical disks is displayed in a table in the **Health and Properties** pane.

9. Verify that no disk is in failed state.

   If any of the disks is failed, refer to the relevant Disk Replace FRU.

10. In the navigation pane, select **Server**.

11. In the **System Inventory** pane, verify that the server drivers and firmware in the **Firmware Inventory** list match the required versions, as published in the Driver and Firmware Matrix.

    If the driver and firmware versions do not match the matrix, you must update them. See "Updating the BIOS, firmware and settings" in the *AMS Deployment Guide*.

Check DAS Cache status

Check DAS Cache status in a VxFlex Ready Node server with an H730 controller.

If your node contains an HBA330 controller, skip this procedure. The storage controller type was determined in the previous task.

Proceed to the section that matches your operating system environment:

- Check the DAS Cache status on a Linux server or VxFlex OS VM on page 8
- Check DAS Cache status on a Windows server on page 9

Check the DAS Cache status on a Linux server or VxFlex OS VM

Check the status of a DAS Cache device and volumes on a Linux server or a VxFlex OS virtual machine (SVM).

Procedure

1. SSH to the VxFlex OS node (for Linux-based node) or SVM (for ESX-based node).
2. Check the SSD cache device status:

```
fscli --list-cache
```

Output similar to the following is displayed:

```
[root@sio-dcoe-92H-9 ~]# fscli --list-cache
1 cache(s) found.
Logical SSD tag 0x9f33831531b8     SSD state = ON
     SSD is clean      =         NO
     Gate parameters   =    Default
     Total size KB     =  780795904   (744.62 GB)
     Dirty size KB     =      41496   (0.04 GB)
     Clean size KB     =       4432   (0.00 GB)
     Free size  KB     =  780094616   (743.96 GB)
     Number of parts   =          1
      SSD Part #0: tag 0x9f33831531ba  status ON
      Size        = 780795904 KB (744.62 GB)
      os_vol_id   = disk/by-path/pci-0000:02:00.0-scsi-0:2:1:0
      Device name = /dev/sdb (fio:0)
      Device path = /dev/disk/by-path/pci-0000:02:00.0-scsi-0:2:1:0

     Cache #0:  tag 0x9f33831531b9
        Cache Mode      =         WB
        Total Size  KB  =  780140544   (744.00 GB)
        Dirty Size  KB  =      41496   (0.04 GB)
        Clean Size  KB  =       4432   (0.00 GB)
        Free Size   KB  =  780094616   (743.96 GB)
        Target Size KB  =  780140544   (744.00 GB)
        Low Space       =         NO
```

If the displayed message is either `List is empty. No caches configured.` or `-bash: fscli: command not found`, it confirms that DAS Cache is not configured on this node. Skip the rest of this procedure, including the step for checking DAS Cache volumes.

If the device status appears as failed, check whether the OS device path of the failed device appears in the output. If it does, it shows that the failed device is an SSD and is configured as cache in DAS Cache. In this case, all the HDD devices, which were accelerated by DAS Cache on this node, will appear as failed.

3. Check the status of the accelerated devices (also known as volumes):

```
fscli --list-vol
```

Output similar to the following is displayed:

```
[root@sio-dcoe-92H-9 ~]# fscli --list-vol

VOLUME #1
     vol_id       = 0
     os_vol_id    = disk/by-path/pci-0000:02:00.0-scsi-0:2:7:0
     dev_name     = /dev/fio-1:/dev/sdh
     mgmt name    = /dev/disk/by-path/pci-0000:02:00.0-scsi-0:2:7:0
     fio_name     = /dev/fio/disk-by-path-pci-0000:02:00.0-scsi-0:2:7:0
     size         = 1144064 MB
     Cache tag    = 0x9f33831531b9
     descriptor   = fio-1
     **** ACCELERATED: WRITE BACK [0x00000004] ****

VOLUME #2
     vol_id       = 1
     os_vol_id    = disk/by-path/pci-0000:02:00.0-scsi-0:2:8:0
     dev_name     = /dev/fio-2:/dev/sdi
     mgmt name    = /dev/disk/by-path/pci-0000:02:00.0-scsi-0:2:8:0
     fio_name     = /dev/fio/disk-by-path-pci-0000:02:00.0-scsi-0:2:8:0
     size         = 1144064 MB
     Cache tag    = 0x9f33831531b9
     descriptor   = fio-2
     **** ACCELERATED: WRITE BACK [0x00000004] ****
```

4. To determine whether the status of an HDD device is Failed and it is accelerated by DAS Cache, check whether the OS device path of the failed device appears in the output.

   If the OS device path of the failed device appears in the output, the failed device is an HDD and is accelerated by DAS Cache.

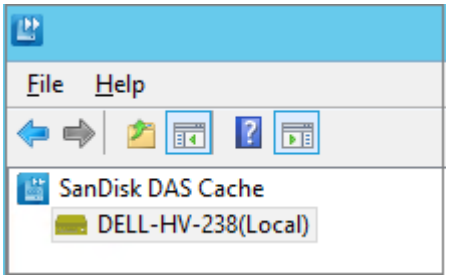
Check DAS Cache status on a Windows server

Check the status of a DAS Cache device and volumes on a Windows VxFlex Ready Node server.

Procedure

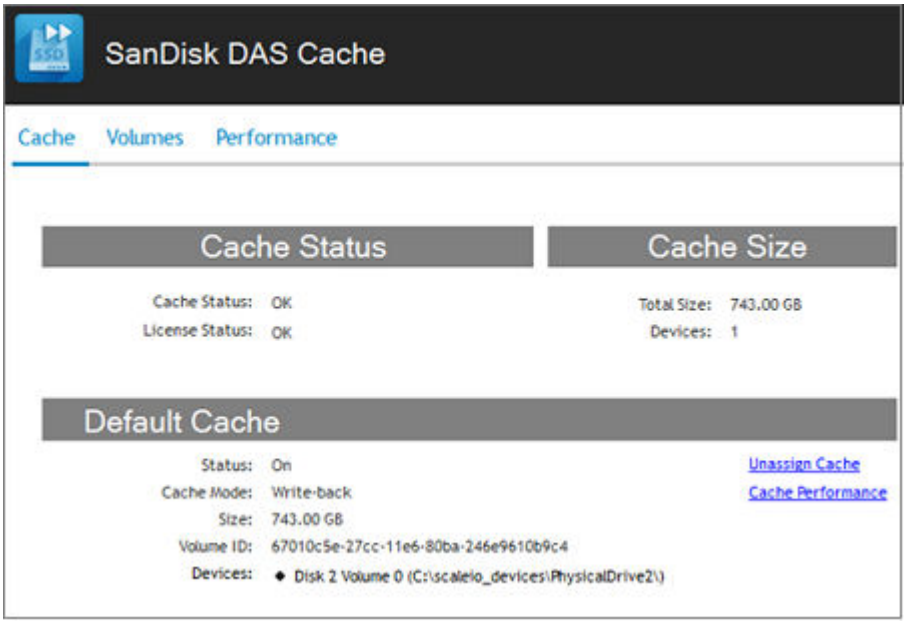
1. RDP to the VxFlex OS node.
2. Click the icon to open the DAS Cache management utility.

   The DAS Cache management window opens.



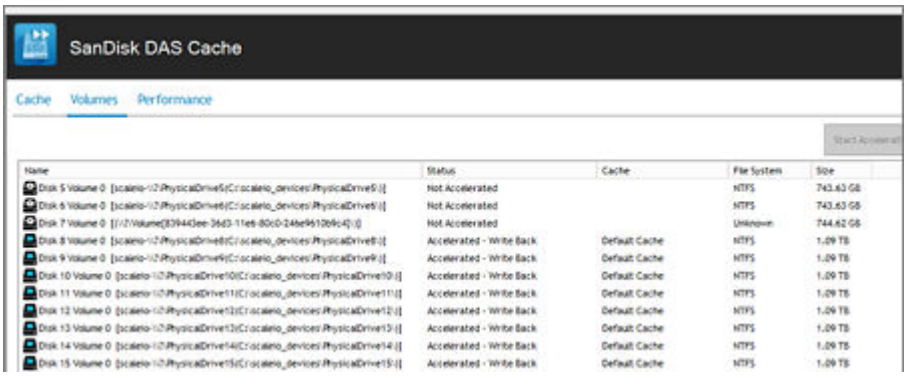
3. In the navigation pane, select the local server node.

   The **SanDisk DAS Cache** screen opens with the **Cache** tab selected.



- If the status of the DAS Cache device is Failed, the status appears in the **SanDisk DAS Cache** screen > **Cache Status** pane.
- If the **SanDisk DAS Cache** screen does not appear, DAS Cache is not configured on this node and you can skip the rest of this procedure.

4. Select the **Volumes** tab and check the status of accelerated devices.



5. Verify that the device that appeared as Failed in the VxFlex OS GUI or SCLI appears in the list.
6. Write the status of the accelerated DAS Cache in the information table.

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