Important Notice RAID System Monitoring on vSphere Client in VMware vSphere 5 or later

This document includes important notice for using vSphere Client of VMware vSphere 5 for monitoring the statuses of RAID Controller.

Please read carefully and follow the instructions when you use your system.

The following symptoms occur when you monitor RAID Controllers using vSphere Client with LSI SMI-S provider on VMware ESXi. All symptoms are just cosmetic problems and there are no problem in product operation and quality.

* On this document, "VMware ESXi" means hypervisor of VMware ESXi 5 or later.

RAID Controller with battery

The status is "Normal" when the battery is connected without fails. The value of Battery Status in the Reading Colum is "Fully Charged" or "Unknown" depending on the RAID Controller.

• When Battery Status is Fully Charged

Hardware				Reset Services
· Health Status	Service	190	eus	Penadrig
Processors Hencey Storage Nationalizing Storage Adapters	10 T4C (Typress5000(R1+00-+[N0100-1401]) R 10 Processors R 10 Processors R 11 Processors R 10 Processors	00000	Normal Normal Normal Normal	54110400
Fartwork Adaptors Advanced Settings Power Hanagement	Buttery 753 on Centroler 5000/058000A8F314 Envire 252_0 on controller 5000/058000A8F314 Feii N807 - CNLTME Drive 252_1 on controller 5000058000A8F314 Feii N807 - CNLTME Envire 252_0 on controller 5000058000A8F314 Feii N807 - CNLTME Envire 252_0 on controller 5000058000A8F314 Feii N807 - CNLTME	9000	Normal Normal Normal Normal	Battery Satus : Fully Ovarge
Software	B Drive 252_4 on controller 5006058000648F314 Fee N007 - CH43NE	ŏ	Normal	
Lancedfeature	Envire 252_5 on controller 5006056000A87314 Piel N007 - CRUTHE RAID 1 StirageVisitarie Logical Values 5006056006A87314_0 on controller 5006058	0	Normal	

When Battery Status is Unknown

Hardware				Reset Sensors Re
 Health Status 	Sensor	9.8	us:	Reading
Processors	E NECExpress5800[R1206-3M[N0100-1790F]	0	Normal	
Memory	📧 🔲 Processors		Norrval	
Storege	E 🚟 Memory		tional	
Networking	E D Storage		Normal	
Storage Adapters	Controller 5006058000190080 (LSI MegeRAID SAS 9267-8)		Normal	
Network Adapters	Battery 3718 on Controller 5006058000190060	0	Normal	Battery Status : Unknown
	Drive 252_10 on controller 500605800319C0E0 Fer: N003 - CMLINE	. 0	Nomal	
Advanced Settings	Drive 252_13 on controller 500605800319C0E0 Five N003 - CMLINE		Normal	
Power Management	Drive 252_12 on controller 500605800319C0E0 Fire: N003 - ONLINE		tional	
Software	Drive 252, 65 on controller 500605800319C0E0 Fw: 0003 - ONLINE		Normal	
	Drive 252_66 on controller 500605800319C0E0 Fw: 0003 - ONLINE		Normal	
Licensed Features	RAID 1 StorageVickume Logical Volume 500605800319C0E0_0 on controller 500605800319C		Normal	
Time Configuration	RAID 5 StorageWolume Logical Volume 500605800019C0E0 1 on controller 500605800039C		Normal	

The image above indicates there is no problem in the battery. The Battery Status in the Reading column is Unknown while the Status is Normal. This is the same as Fully Charged.

During battery refreshing

The status of the battery indicates "Unknown" on the Hardware Health Status window.

Hardware			Report Sensors
 Health Status 	Sensor	Salus	Reading
Processors	NEC Express5800/T120b-E [N0100-1668]	🔿 Normal	
Memory	E Processors	Normal	
Storage	🗵 🊟 Memory	Normal	
Networking	E i Storage	(2) Unknown	
Storage Adapters	Controller 5006058001618810 (1 SI Medail Alto SAS 9264-81)	Co. Normal	
histwork Adapters	Battery 4191 on Controller 5006058001618810	(1) Unknown	Battery Ratus : Charging
Advanced Settings	El cana 127 n pu covorana procoperorierento ana ance - cantas	C NOTIN	
Advanced beckers	Drive 252_1 on controller 5005058001618810 Pwr N005 - CNLINE	Normal	

If the value of the Battery Status is Unknown in the Reading column when the battery is Fully Charged, the Battery Status may be also Unknown during battery refreshing.

You can check the battery status in the Status column and the value of Battery Status in the Reading column.

Status of Battery	Status	Value of "Battery Status"
Fully Charged	Normal	Fully Charged or Unknown
Discharge in Progress	Unknown	Partially Charged or Unknown
Low Voltage	Unknown	Critical or Unknown
Charge in Progress	Unknown	Charging or Unknown

The battery refresh completes in 24 hours and the Status becomes Normal. If the Status is left "Unknown" for a long time, the battery may be degraded. Contact your NEC sales/maintenance person.

RAID Controller with Flash Backup Unit

The status is "Normal" and the label in the Sensor Column is "Battery" when the Flash Backup Unit is connected without fails. The value of Battery Status in the Reading Colum is "Partially Charged" even if the Flash Backup Unit is fully charged.

🗄 📋 Storage	 Normal 	
Controller-5006058004F937C0 (LSI MegaRAID SAS 9270CV-8)	 Normal 	
Battery 4746 on Controller 5006058004F937C0	 Normal 	Battery Status : Partially Charged
S on controller 5006058004P937C0 Fw: 3505 - UNCONFIGURED GOOD	Normal	
Drive 252_21 on controller 5006058004F937C0 Fw: N006 - UNCONFIGURED GOOD	😊 Normal	
Drive 252_22 on controller 5006058004F937C0 Fw: N006 - UNCONFIGURED GOOD	 Normal 	
Drive 252_23 on controller 5006058004F937C0 Fw: N006 - UNCONFIGURED GOOD	 Normal 	

You can check the Flash Backup Unit status in the Status column and the value of Battery Status in the Reading column.

Status of Flash Backup Unit	Status	Value of "Battery Status"
Fully Charged	Normal	Fully Charged
Discharge in Progress	Unknown	Partially Charged
Low Voltage	Unknown	Critical
Charge in Progress	Unknown	Charging

Getting latest status of the battery and Flash Backup Unit

The battery and Flash Backup Unit status is not refreshed by [Reset Sensors] and [Refresh]. If you want to get latest status of the battery and Flash Backup Unit, close vSphere Client and restart it.

When a problem occurs in Physical Device

The status of Physical Device becomes "Warning" on the Hardware Health Status window. Either of the following symptoms occurs in this case.

- Physical Device fails
- Physical Device has S.M.A.R.T. error

You can identify which case occurs by confirming the status of the Logical Drive. Check if the status of the status of the Logical Drive is Warning.

(1) When the status of the Logical Drive is Warning

The Logical Drive is no longer redundant because the Physical Device fails. Replace the failed Physical Device. The screen when the Physical Device fails may be as shown below.

Ũ.	Drive Backplane 1Drive 0 Status 0: Rebuild In Progress - Deassert	0	Normal
Ũ.	Drive Backplane 3 Drive 2 Status & Drive Fault - Assert	•	Aleit
0	Drive 252_54 on controller 5006058009604450 Pwr NS07 - OFFLINE	Æ	Wartsing
Ũ	RAID 1 StorageVolume Logical Volume 500605B0090D4450_1 on controller 500605B0090D4450, Drives(DEGRADED	A.	Warning

The label of the failed Physical Device (Drive 252_0) is "OFFLINE" and the status becomes "Warning". The status of the Logical Drive (Logical Volume which includes Drive 252_0) also becomes "Warning".

(2) When the status of the Logical Drive is Normal

The Physical Device does not fail but has S.M.A.R.T. error. This may cause a Physical Device error in the future, so replace the Physical Device. The screen when S.M.A.R.T. error occurs may be as shown below.

Drive Backplane 1 Drive 0 Status 0: Drive Fault - Deassert	۲	Normal	
RAID 1 StorageVolume Logical Volume 50060580090D4450_1 on controller 50060580090D4450, Drives(OPTIMAL		Normal	
Drive 252_60 on controller 50660580090DH450 FW: N007 - UNCONFIGURED GOOD	4	Warning	
Port 4 on Controller 50060580090D4450	0	Normal	

The label of the Physical Device with S.M.A.R.T. error (Drive 252_4) indicates "UNCONFIGURED GOOD" and the status becomes "Warning". The status of the Logical Drive (Logical Volume which includes Drive 252_4) remains as "Normal".

Identifying Physical Device which is a part of Logical Drive

The label of Online Physical Device may indicate "UNCONFIGURED GOOD" on the Hardware Health Status window. And a part of the label of Logical Drive is dropped. For these reasons, **you cannot Identify Physical Device which is a part of Logical Drive from vSphere Client without occurring problem.**

Identifying Physical Device which is a part of Logical Drive without when a problem occurs in Physical Device, Start the Offline RAID Utility to identify the Physical Device.

Sensor		Stat	us
	Drive 252_7 on controller 500605B003A9DF30Fw: 0000108 - UNCONFIGURED GOOD	0	Normal
	Drive 252_26 on controller 500605B003A9DF30Fw: 000_0061 - UNCONFIGURED GOOD	0	Normal
	Drive 252_33 on controller 500605B003A9DF30Fw: 000 UNCONFIGURED GOOD	0	Normal
	Drive 252_34 on controller 500605B003A9DF30Fw: 000 - UNCONFIGURED GOOD	0	Normal
	Drive 252_35 on controller 500605B003A9DF30Fw: 000 - UNCONFIGURED GOOD	0	Normal
	Drive 252_36 on controller 500605B003A9DF30Fw: 0003, UNCONFIGURED GOOD	0	Normal
	Cache CadeRAID 0 StorageVolume Logical Volume500605B003A9DF30_0 on controller500605B006A9DF30, Drives(- OPTIMAL	0	Normal
	RAID 1 StorageVolume Logical Volume 500605B003A9DF30_1 on controller 500605B003A9DF30, Dives(- OPTIMAL	0	Normal
	RAID 1 StorageVolume LogicalVolume 500605B003A9DF30_2 on controller500605B003A9DF30, Dives(- OPTIMAL	0	Normal
	RAID 1 StorageVolume Logical Volume 500605B003A9DF30_3 on controller 500605B003A9DF30, Dives(- OPTIMAL	0	Normal
	RAID 1 StorageVolume Logical Volume 500605B003A9DF30_4 on controller 500605B003A9DF30, Dives(- OPTIMAL	0	Normal

Environment where many Physical Devices or Logical Drives

When you connect the server using vSphere Client immediately after restarting VMware ESXi, there may be the case that no storage node is displayed on the Health Status window. The symptom occurs because a lot of processes are being activated immediately after VMware ESXi start.

In this case, check the display of vSphere Client some time later. The more the number of the Physical Devices or Logical Drives are, the longer the time when all the storage nodes are successfully displayed.

When a RAID Controller problem occurs on environment where more than one RAID Controller is connected

Shut down VMware ESXi if the status of the RAID Controller is "Alert" or "Warning" on the Hardware Health Status window.

Example when the status of RAID Controller is "Alert"

Ser	isor			Stat	US .
8		NE	C Express5800//R120a-1E [N8100-1575Y]	•	Alert
	(\mathbf{f})		Processors	0	Normal
	۲	14.66	Memory	0	Normal
		0	Storage	•	Alert
		6	Controller 5006058001618020 (LSI MegaRAID SAS 9264-8i)	Ŷ	Alert
		Ł	Battery 753 on Controller 5006058001618020	0	Normal

Example when the status of RAID Controller is "Warning"

Ser	sor			Stat	US
Ξ		NEC Express5800/R120a-1E [N8100-1575Y]		A	Warning
	(*)		Processors	0	Normal
	۲	4145	Memory	0	Normal
	Ξ	0	Storage	A	Warning
			Controller 5006058001618020 (LSI MegaRAID SAS 9264-8i)	4	Warning
		6	Battery 753 on Controller 5006058001618020	0	Normal

Start the Offline RAID Utility to identify the RAID Controller that has a problem. Replace the RAID Controller if required.

Connection between vSphere Client and VMware ESXi

VMware ESXi may not send information to vSphere Client if the RAID System configuration changes frequently in a short period of time, for example, if a physical device is removed and inserted at intervals of approximately 90 seconds. In this case, please wait for 10 minutes to recovery from the communication failure or restart the VMware ESXi Management Agent. You can restart the Management Agent in the following procedure.

[How to restart the Management Agents]

- 1. Press F2 on the console of VMware ESXi and log in to the management window.
- 2. Select Troubleshooting Options and press Enter.
- 3. Select Restart Management Agents and press Enter.
- 4. Press F1 on the confirmation windows to restart Management Agents.

About Screenshots on each item

Screenshots on each item may not use latest version. Screen display may be different without notable points that enclosing red square.

