

Preventive Maintenance steps for storage

We receive complaints of HDD issue in storage, while investigating we found some common factor which User not following.

Please read the Installation manual before power on the system.

1. Make sure the storage is installed in a clean and proper environment which mentioned as per installation manual. If no proper colling don't run the system.

Environment Temperature.

General	Power supply	Redundant
	Consumption (with HDDs)	<ul style="list-style-type: none"> ● Working: ≤ 507 W (1729 BTU with 24 HDDs); ● Rated: ≤ 800 W
	Environment temperature	<ul style="list-style-type: none"> ● Working: +5 °C to +35 °C (41 °F to 95 °F) ● Storing: -20 °C to +70 °C (-4 °F to 158 °F)
	Environment humidity	<ul style="list-style-type: none"> ● Working: 20% to 80%RH (non-condensing/frozen); ● Storing: 5% to 90%RH (non-condensing/frozen)

Preventive and Cautionary Tips

Before connecting and operating your device, please be advised of the following tips:

- Ensure unit is installed in a well-ventilated, dust-free environment.
- Unit is designed for indoor use only.
- Keep all liquids away from the device.
- Ensure environmental conditions meet factory specifications.
- Ensure unit is properly secured to a rack or shelf. Major shocks or jolts to the unit as a result of dropping it may cause damage to the sensitive electronics within the unit.
- Use the device in conjunction with an UPS if possible.
- Power down the unit before connecting and disconnecting accessories and peripherals.
- A factory recommended HDD should be used for this device.

2, Must use Enterprise HDD.

3, Check HDD status

HDD Information (Total: 24)								To page Total 30	
<input type="checkbox"/>	Position	Supplier	Model	Capacity (MB)	State	Group	HDD Status		
<input type="checkbox"/>	0/0-1	Seagate	ST6000NM0095.ZAD8X41P000...	5,723,166	Normal	Array (Raid1)	View		
<input type="checkbox"/>	0/0-2	Seagate	ST6000NM0095.ZAD8X4H4000...	5,723,166	Normal	Array (Raid1)	View		
<input type="checkbox"/>	0/0-3	Seagate	ST6000NM0095.ZAD8X9H2000...	5,723,166	Normal	Array (Raid2)	View		
<input type="checkbox"/>	0/0-4	Seagate	ST6000NM029A.WN800T13000...	5,723,166	Normal	Idle	View		
<input type="checkbox"/>	0/0-5	Seagate	ST6000NM0095.ZAD8X416000...	5,723,166	Normal	Array (Raid1)	View		
<input type="checkbox"/>	0/0-6	Seagate		5,723,166	Normal	Array (Raid1)	View		
<input type="checkbox"/>	0/0-7	Seagate		5,723,166	Normal	Array (Raid2)	View		
<input type="checkbox"/>	0/0-8	Seagate		5,723,166	Normal	Array (Raid2)	View		
<input type="checkbox"/>	0/0-9	Seagate		5,723,166	Risky Disk	Array (Raid1)	View		
<input type="checkbox"/>	0/0-10	Seagate		5,723,166	Normal	Array (Raid1)	View		
<input type="checkbox"/>	0/0-11	Seagate		5,723,166	Normal	Array (Raid2)	View		
<input type="checkbox"/>	0/0-12	Seagate		5,723,166	Normal	Array (Raid2)	View		
<input type="checkbox"/>	0/0-13	Seagate		5,723,166	Normal	Array (Raid1)	View		
<input type="checkbox"/>	0/0-14	Seagate	ST6000NM0095.ZAD8X2DE000...	5,723,166	Normal	Array (Raid1)	View		

HDD Status

Position: 0/0-9

State: Risky Disk

Group: Array (Raid1)

Health Value: Bad

Temperature: 35

Bad Sector & Repair: 0

Health Parameters: HEALTH

SMART: SMART

4, If the storage HDD fail and Kick out from RAID, Remove the HDD ASAP and start Rebuilding RAID. If not remove and RAID start rebuilding with Hot spare which will cause issue.

August 09 2021 02:43:06	Warning:Disk testing in another host.
August 09 2021 02:43:05	Serious:The HDD 0/0-4,ST6000NM029A,WNB00T130000C004FDDN was kicked out...
August 09 2021 02:43:05	Warning: HDD: 0/0 -4. ST6000NM029A,WNB00T130000C004FDDN is kicked from ...

5, Make sure every storage configured with Hot spare and have Spare HDD as backup. HDD which in RAID can be replaced with Enterprise HDD and Same Size (Capacity) to Rebuild RAID

- In order to increase the performance of created RAID, it is recommended to use HDDs of the same model and capacity when creating a RAID.

6, If the Storage Need to shutdown, do in proper Step. Abnormal Shutdowns cause issue with RAID

7, If Dual controller storage both Power supply should be connected.

Issue: Random Hdd failure

Cause: No proper cooling

we find the storage where installed not having required cooling initially when started the system running, all the HDD temp was running in high temp .

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01:15:41-<font color="#FF0000">Serious:system_temp2 is abnormal. +53 temperate (system_temp2 degree Celsius) is too high.</font>-
02:01:41-system_temp2 recovers to normal. +52 temperate (system_temp2 degree Celsius) is recovers to normal.-
03:27:41-<font color="#FF0000">Serious:system_temp2 is abnormal. +53 temperate (system_temp2 degree Celsius) is too high.</font>-
09:29:40-<font color="#FF0000">Serious:system_temp1 is abnormal. +56 temperate (system_temp1 degree Celsius) is too high.</font>-
10:34:11-<font color="#3300FF">Warning:HDD 0/0-3,ST6000NM0095.ZAD8X9H20000C950AGEZ temperature 59 is too high.</font>-
10:34:21-<font color="#3300FF">Warning:HDD 0/0-4,ST6000NM0095.ZAD8X8F70000C9505BQS temperature 59 is too high.</font>-
10:34:52-<font color="#3300FF">Warning:HDD 0/0-7,ST6000NM0095.ZAD8X92C0000C9505DKK temperature 59 is too high.</font>-
10:37:45-The fan speed of Controller is set as high.-
10:37:50-The fan of storage system has the highest priority. Lower the priority after HDD temperature turns to normal.-
11:33:41-system_temp1 recovers to normal. +55 temperate (system_temp1 degree Celsius) is recovers to normal.-
11:34:10-HDD 0/0-3,ST6000NM0095.ZAD8X9H20000C950AGEZ temperature 58 recovers to normal.-
11:34:21-HDD 0/0-4,ST6000NM0095.ZAD8X8F70000C9505BQS temperature 58 recovers to normal.-
11:34:52-HDD 0/0-7,ST6000NM0095.ZAD8X92C0000C9505DKK temperature 58 recovers to normal.-
11:47:41-system_temp2 recovers to normal. +52 temperate (system_temp2 degree Celsius) is recovers to normal.-
02:42:10-The HDD detection strategy (quick detection ) is running in background.-
02:45:34-The HDD detection strategy (quick detection ) is completed.-
02:52:10-The HDD detection strategy (overall detection ) is running in background.-
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Abnormal shutdowns – No UPS and redundant power not connected

```
20:52:51-StorOS system start running-
20:56:22-<font color="#FF0000">Serious:The array Raid2 degraded.</font>-
20:56:36-<font color="#3300FF">Warning:Array Raid2 is rebuilding.</font>-
20:56:47-System boot-
20:57:11-<font color="#3300FF">Warning:System is abnormal. Alarm occurs in surveillance interface.</font>-
20:57:28-Starting remote CVR service. (Starting CVR service-10.254.254.2.)-
20:57:30-Starting remote CVR service completed. (Starting CVR service completed-10.254.254.2.)-
20:57:31-The resource NIC is started in the other controller. 10.254.254.2-
20:57:41-Data NIC 2 disconnected when the system is starting up.-
20:57:41-Data NIC 4 disconnected when the system is starting up.-
21:03:21-<font color="#FF0000">Serious:power2 is abnormal. power2 status is abnormal.</font>-
12:17:47-StorOS system start running-
12:21:14-<font color="#FF0000">Serious:The array Raid2 degraded.</font>-
12:21:34-System boot-
12:21:56-Set the local as the time host.-
12:21:57-<font color="#3300FF">Warning:System is abnormal. Alarm occurs in surveillance interface.</font>-
12:22:03-<font color="#3300FF">Warning:The array Raid2 starts rebuilding.(Rebuilding HDD: 0/0-24,)</font>-
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