ASUP

1> Get the error :

2> Initial step – configure ASUP (storage / System)

3> Check if the firewall is enabled, if yest disable

4> Check DNS configuration

FOR SMTP: FIRST EXAMPLE

è Kindly check the SMTP server configuration on the E-Series controllers.

[https://docs.netapp.com/ess-11/index.jsp?topic=%2Fcom.netapp.doc.ssm-sam-117%](https://docs.netapp.com/ess-11/index.jsp?topic=%2Fcom.netapp.doc.ssm-sam-117%25)

2FGUID-9AB7BB10-61B7-4F29-948E-EBE1F9C41222.htmlIf

If SMTP configuration is valid, make sure the SMTP server is reachable via the configured management

network on the E-Series controllers.

è

If SMTP configuration is valid and SMTP server is using fully qualified domain name (FQDN) make sure

the DNS servers are defined on the E-Series controllers.

è

OR

1> Error Screenshot.

2> Screenshot of the ping status of SMTP server.

3> kindly check if you are able to telnet to mail server IP? (share the screenshot)

4> Kindly share the latest logs so I can check if the DNS has been configured properly.

à Check firewall policy to enable SNMP protocol (port 25) between mail server and E-Series

systems.

è Check mail server to allow mail forwarding from the E-Series systems. -To use the diag shell, you will have to enable remote login to the controllers. in the GUI. -Then SSH to the controller IP management port. -It will ask for creds: (username = diag and password will be the GUI password for the admin user) -From there you can run nc -vzn xxx.xxx.xxx.xxx 25 -You have to use the IP of the email server for xxx.xxx.xxx.xxx

Ifconnectivity is there, should come back as follows:

(UNKNOWN) [xxx.xxx.xxx.xxx] 25 (smtp) open

Netstat -a grep-I “25” SECOND EXAMPLE --- <https://kb.netapp.com/Advice_and_Troubleshooting/Data_Storage_Systems/E>- Series\_Storage\_Array/How\_to\_restart\_the\_web\_services\_on\_SANtricity\_System\_Manager

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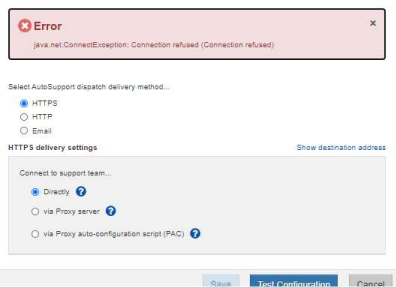
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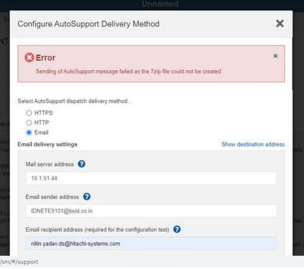
SECOND EXAMPLE --- <https://kb.netapp.com/Advice_and_Troubleshooting/Data_Storage_Systems/E-Series_Storage_Array/How_to_restart_the_web_services_on_SANtricity_System_Manager>

 Eseries Page 1



In this case we restarted web services.

à THIRD EXAMPLE



ERROR:

Eseries Page 2

sudo syst emctl st atus msw

navigate to the /msw\_dat a/ dat a/ monitor/supportdat a/ draft directory and check for any files.sudo ls /msw\_dat a/ dat a/ monitor/supportdat a/ draft If bundle still doesn't collect check the /msw\_dat a/ dat a/ monitor/support dat a/full-csbfor any

ERROR: Sending of AutoSupport message failed as the 7zip file could not be created/ Unable to write to the specified file support-data.7z

Kindly check the below solution:

1. Try with another browser.

2. Confirm that user has permissions for download directory.

3. Confirm that download directory has space.

Mostly this error occurs if above points are not set properly.

If above points are fine and you are still getting error , kindly follow the below action plan:

1. Login as diag

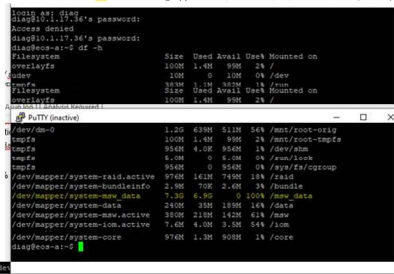
Confirm msw service is running.

2.

3.

4. If files do exist remove them and try the collection again.

similar file names as well. repeat the same process if needed to remove any older bundles from this directory as well



 FOURTH EXAMPLE:

1.

Try to set "Direct" and check whether you can save the configuration. Then again set to "via proxy  server".

2. Please check whether your settings match this NetApp document:

[https://docs.netapp.com/ess-11/index.jsp?topic=%2Fcom.netapp.doc.ssm-sam-116%](https://docs.netapp.com/ess-11/index.jsp?topic=%2Fcom.netapp.doc.ssm-sam-116%25)

2FGUID-9AB7BB10-61B7-4F29-948E-EBE1F9C41222.html&lang=en and in particular to this section:

"Before you start:

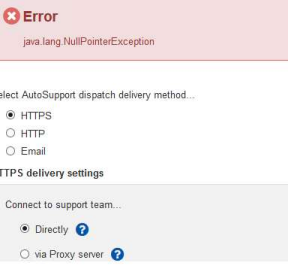
- The AutoSupport function must be activated. You can see if it is enabled on the  AutoSupport page.

- A DNS server must be installed and configured in your network. The DNS server address  must be configured in the System Manager (this task is available on the Hardware page). "

3. Check whether the proxy server is visible as an IP address and also as a server name from  the storage (ping).

Please keep me updated on the results.

<https://kb.netapp.com/Advice_and_Troubleshooting/Data_Storage_Software/E>- Series\_SANtricity\_Software\_Suite/E-Series\_Web\_Server\_not\_starting



From <<https://netapp-my.sharepoint.com/personal/puspitas_netapp_com/Documents/Desktop/Netapp%20Documents%20.docx>>

--------------------------------------------------------------------------------------------------------------------

ASUP EMAIL ALERT

Issue: Customer is receiving false ASUP delivery alert everyday.

ALERT : Date: Dec 28, 2021 10:26:48 PM Summary Node ID: sydde01 Host IP Address: 172.16.132.79 Host ID: sydde01\_A.as.munichre.com Event Error Code: Event occurred: Tue, 28 Dec 2021 22:26:48 +0000 Event Message: An ASUP message could not be delivered from the array management host eos-b to NetApp ASUP https gateway <https://support.netapp.com/put/AsupPut/>

 STEPS TAKEN :

- Stagger reboot of the controllers is done.

- ASUP gate way is reachable (-Visit: <https://support.netapp.com/put/AsupPut/>)

- Restarted MSW services.

- CFW is in latest model.

OBSERVATION: - We are receiving daily and weekly logs.

- In ASUP transmission I see the below alert :

12/9/21 14:19:53 UTC -> Priority:CRITICAL, ASUP Message Type:AOD Request, ASUP Task Type:AOD Poll, Status:FAILED, Storage Array:sydde01, SAID:600A098000B2F2F1000000005BB6AC60, Chassis Serial

STEPS TAKEN:

- Stagger reboot of the controllers is done.

- ASUP gate way is reachable (-Visit: <https://support.netapp.com/put/AsupPut/>)  - Restarted MSW services.

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Number:721725500009, Thread ID:410,934, Delivery Method:HTTPS, Sequence  Number:2126,Delivery URI:support.netapp.com/aods/asupmessage, AutoSupport Decompressed  Size:N/A, Total Collection Time:N/A, Message:AutoSupport message delivery failed. Server returned HTTP status code: 503.

STEPS TAKEN: DOC for AutoSupport message delivery failed. Server returned HTTP status code: 503

<https://airbrake.io/blog/http-errors/503-service-unavailable#:~:text=A%20503%20Service%20Unavailable%20Error,server%20that%27s%20down%20for%20maintenance>.

<https://kb.netapp.com/Advice_and_Troubleshooting/Data_Storage_Systems/E>- Series\_Storage\_Array/An\_ASUP\_message\_cannot\_can\_now\_be\_delivered\_from\_the\_array\_management\_host

--how to tellnet port

telnet 216.240.21.18 443

Trying 216.240.21.18...

Connected to 216.240.21.18.

Escape character is '^]'.

IP:

Support.netapp.com

216.240.21.18

<https://kb.netapp.com/Advice_and_Troubleshooting/Data_Storage_Software/E-Series_SANtricity_Software_Suite/An_ASUP_message_can_now_be_delivered_from_the_array_management_host_to_NetApp_ASUP>

<https://kb.netapp.com/Advice_and_Troubleshooting/Data_Storage_Software/E-Series_SANtricity_Software_Suite/An_ASUP_message_could_not_be_delivered_by_incorrect_DNS_configuration>

<https://docs.netapp.com/us-en/e-series-santricity/sm-hardware/configure-dns-server-addresses.html>

<https://docs.netapp.com/us-en/ontap-sm-classic/online-help-96-97/concept_dns_ddns_services.html#enable-or-disable-ddns>

<https://docs.netapp.com/us-en/ontap/networking/configure_dns_for_host-name_resolution.html#configure-the-name-service-switch-table-for-host-name-resolution>

|| CONTROLLER OFFLINE||

after initial trableshooting SUCH AS RESEAT AS PER KB

If the steps are completed, That is all right, but we need to capture the boot sequence and what is the

output from the controller. This can be seen via connecting serially.

Also capture trace buffers…

Ask customer to connect serial console cable and connect via Putty Comm port.

Once we have connected to controller, change settings to save the output of Putty

Ask customer to try and place it online,

wait for controller to come back online and it might go to failed state in 2-3 minutes

the logs get captured in the putty session. Save it and attach to case and move it to L2.

C

COREDUMP

SYMTOM: ESFTDC:E-Series Notification from tdcesr (coredump)

upgraded to 11.60.3r2 post which core dump was captured. ((known issue)

<https://kb.netapp.com/Advice_and_Troubleshooting/Data_Storage_Systems/E>Series\_Storage\_Array/E-series\_Controller\_panic\_with\_SIGSEGV\_Received

ECD-12185 Controller Firmware 2 On E28xx/EF280/E57xx/EF570 with at least one

expansion shelf and a pool which uses an equal number of drives on each

shelf, upgrading from a pre-11.70 release to 11.70 or later could lead to an

extra reboot during firmware download and a health image could be generated.

> upgrading to 11.60 or 11.70.

>then it is known issue we have above ks for that

>it reboots twice and generates core dump

Kindly follow the below steps and install the CA certificate . -Signed certificates

A signed certificate is validated by a certificate authority (CA), which is a trusted third-party

organization.

CA signed certificate( signed certificate) there are basically 3 steps only

Step 1: Complete CSRs for the controllers Step 2: Submit the CSR files Step 3: Import signed certificates

for controllers

The second step says :

""After you create the certificate signing request (CSR) files, send the files to a certificate authority

(CA).""

<https://www.netapp.com/media/17218-tr4813.pdf> -----------------------==================================--------------------------------- ||2009047088||

1> HTTP OPTIONS: HTTP/80 exists solely to redirect to HTTPS/8443 - no unencrypted communications are supported

but there is no control for HTTP or OPTIONS at this time. While OPTIONS was required in the past, it may no longer

be needed and once validated would be dropped

2> Out of Support Debian: Debian was upgraded from Jessie to Buster in 11.70.2.

è You informed you will check with Ravi to have the system upgraded to 11.70.2

3> Self-signed cert: resolvable via configuration and the use of CA signed certs:

CA signed certificate( signed certificate) there are basically 3 steps only

Step 1: Complete CSRs for the controllers Step 2: Submit the CSR files Step 3: Import signed certificates for

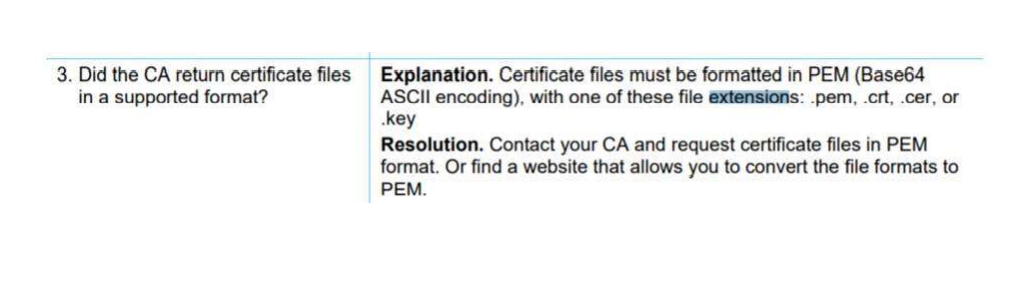
Controllers

Please check the page number 9 onwards. It says how to generate CSR files and submit CSR files to CA and Import

the CA certificate .Kindly check with security team and have the files installed.

DOC: <https://www.netapp.com/media/17218-tr4813.pdf>

è Also, CSR files would be with extension .cer as mentioned in the above doc



CONTROLLER UPGARDE CENTER KEPT LOADING

2008743765 /2008762326

Ø Check if any operation running

Ø Network issues

Ø If 2 gui sessions opened

Ø Other machine/ browser

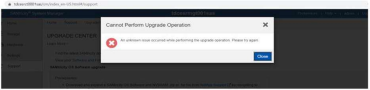
Ø Check using serial cable

Ø Restart weeb services / stagger reboot of controllers

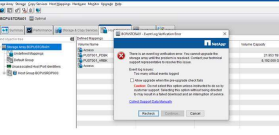
<https://kb.netapp.com/Advice_and_Troubleshooting/Data_Storage_Systems/E>- Series\_Storage\_Array/How\_to\_restart\_the\_web\_services\_on\_SANtricity\_System\_Manager

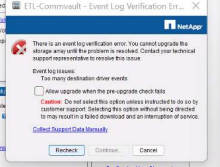
Ø

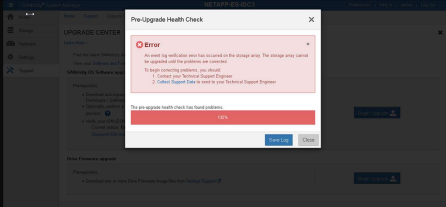
Upgrade fail



<https://kb.netapp.com/Advice_and_Troubleshooting/Data_Storage_Systems/E-Series_Storage_Array/E-series_upgrade_fails_with_%22an_unknown_issue_occured_while_performing_the_upgrade_operation%22> -Reboot both controller one after the other. 2008928930- upgrade fail







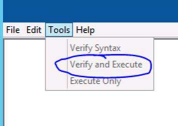
-Please try to execute the command from script editor, By selecting the array from  enterprise management window.

Click on tools->Execute script->enter the given command below in the rectangular box:1. reset storagearray SASPHYBaseline;

Note: One at a time



-And verify the syntax of the command and execute it.



=======

|| DRIVE ||

6GBPS 12GBPS DE6600 (60 DISK) DE460C (60 DISK) DE5600 (24 DISK) DE224C (24 DISK) DE1600 (12 DISK)

How do Volume Groups differ from Dynamic Disk Pools in E-Series storage?

From

<[https://kb.netapp.com/Advice\_and\_Troubleshooting/Data\_Storage\_Systems/E- Series\_Storage\_Array/How\_do\_Volume\_Groups\_differ\_from\_Dynamic\_Disk\_Pools\_in\_E-Series\_storage](https://kb.netapp.com/Advice_and_Troubleshooting/Data_Storage_Systems/E-%20Series_Storage_Array/How_do_Volume_Groups_differ_from_Dynamic_Disk_Pools_in_E-Series_storage)>

GUI INACCESIBLE

||ACTION PLAN ||

Engineer needs to check link lights at ethernet ports,.

Need to check if the ethernet cables are not damaged and are properly connected from the ethernet

switch.

Kindly try to reseat the cables and check.

Please Check all other physical connectivity from storage to switch.

MANAGEMENT BASIC TROUBLESHOOTING (IS ARRAY IS NOT ACCESSABLE)

2008734063

1. Check management IP is pingable or not.

2. Try accessing from browser directly with management IP address of any controller.

Try to check link lights at ethernet ports, see if the ethernet cables are not damaged and are

properly connected from the ethernet switch, try to reseat the cables and check. (Ethernet cable

from ethernet switch is connected to each port of controller A and B and is not damaged and has

link lights)

4. Verify that port 8443 isn't blocked on the network or the management station?

5. Need to check if he ever had access from the workstation he is trying to connect controllers.

6. If no, is it in the same network?

7. If yes, are other workstations inside the same network able to connect to the storage?

FSO to restart MSW using serial cable

ONSITE

8. -Restart MSW with a serial cable. Note : Make sure you have the serial cable.

managed

login as diag, gui password, and run that command.

<https://kb.netapp.com/Advice_and_Troubleshooting/Data_Storage_Systems/E>- Series\_Storage\_Array/How\_to\_restart\_the\_web\_services\_on\_SANtricity\_System\_Manager

1. The diag user password depends on the controller firmware level

For 11.40.x:

eos/<UI admin password> (for eos shell) and diag/<UI admin password> (for dom0/linux shell)

2. Run the command " sudo systemctl restart msw " in both the controllers

-Check all physical connections are fine, Ethernet cable reseat, Link lights up

-- ping both the controller IPs., getting below error :

" Request timed out "

-- Tried to log in to GUI, getting following error : "The site can not be reached"

-- Customer informed the ethernet cable is fine , physical connectivity is good.

-- Customer also confirmed he is able to accesss other servers from this same network. Only controller

GUI is not accessable.

-- asked customer to send someone onsite and check the 7 segment code

-- Customer confirmed the 7 segment code is 9 9

. --Informed him 9 9 means the controllers are optimal, in this case we are unable to ping controllers

hence they need to check with Network team on this.

-- Also Requested to share the image/ video of the controller

Host interface cards

A (HIC) is a component of a controller that contains host ports. A controller might also have host ports,

called baseboard host ports, that are not on a HIC. Different types of HICs are installed in a controller

depending on the types of host connections a storage array supports. A HIC is cabled to a host adapter

on a server:

a host bus adapter (HBA) for Fibre Channel or SAS,

a host channel adapter (HCA) for InfiniBand, or

an Ethernet adapter for iSCSI.

FThe host connection might be direct or through a switch fabric. The host adapter in the host must

support the same interface protocols as the type of HIC to which it is cabled.

èCables – SAS uses both copper and optical cable, Fibre Channel uses fibre optic cables, and iSCSI

uses copper cables.

è HIC (optional) to connect host.

è Host port to connect host that are baseboard (in build).

<https://library.netapp.com/ecmdocs/ECMLP2526737/html/GUID-C6829553-9F1C-4CF0-9460-D440A0CDCD12.html>

<https://library.netapp.com/ecmdocs/ECMLP2526737/html/GUID-030B00E4-1A52-4922-A71C-03C734C0735F.html>- FOR ALL MODEL

<https://mysupport.netapp.com/ecm/ecm_download_file/ECMP1403720> - 2700

<http://docs.netapp.com/ess-11/index.jsp?topic=%2Fcom.netapp.doc.e-5700-sysmaint%2FGUID-90CBA2A5-6CF7-45AE-AC18-41FCF28F503D.html>

-- HIC

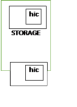
A host interface card (HIC) can optionally be installed within a controller canister. The E5700 controller

includes built-in host ports on the controller card itself, as well as host ports on the optional HIC. Host

ports that are built into the controller are called baseboard host ports. Host ports that are built

into the HIC are called HIC ports





Host bus adapter (HBA)

A physical board that resides in the host. The HBA provides for data transfer between the host and the controllers in the storage array over the I/O host interface. Each HBA contains one or more physical ports. <https://mysupport.netapp.com/NOW/public/eseries/sam_archive1150/index.html#page/GUID-8538272> A-B802-49D9-9EA2-96C82DAD26A2/GUID-82C58E29-C2AD-47AA-BCAD-82C829DE0ABB.html volume which is undergoing Initialization . volume is automatically initialized when it is first created. Volume initialization operation can be lengthy and could affect system performance.

In-band management

With in-band management, you manage the storage array through an I/O-attached host. Storage

management commands are sent through an I/O connection from a host that is running host-agent

software. The I/O connection can be Serial Attached SCSI (SAS), Fibre Channel (FC), or internet SCSI

(iSCSI).

Make sure santricty storage manger is installed on the host that is connected to eseries storage box

Installing this software will make the host agent software installed on that machine

because:

The host-agent software receives communication from the storage management client software, which

is running either on itself or on another management station, and passes it to the storage array

controllers through an I/O connection. The controllers also use the I/O connections to send event

information back to the storage management station through the host.

ONLY if they are managing the array from a different and dedicated station that is not connected to the

arary itself

second point looks like the customer has added ISCSI IP to add the array,

infact it should be:

Only a name or an IP address for the host needs to be specified to add more storage arrays to it. After

the host name or IP address has been added, the agent software automatically detects any storage

arrays attached to the host.

Reference link:

<https://library.netapp.com/ecmdocs/ECMP12404965/html/GUID-CA995A42-1406-4F70>- A1B6-1FE8BC0DC32E.htm

DRIVE LOSS PATH REDUNDANCY

1. Try to reseat the drive( remove the drive wait for 5 minutes and insert it back)

2. If issue persists swap the drive with known good hot spare to isolate the issue.

3. If still error follows, please provide the manually collected logs. ================================================================================

========

||Host driver path - \_\_ HOST MPIOVMWARE ||

1. The host does not have a multipath driver installed.

2. The host operating system type is incorrectly set in SANtricity.

3. The host multipath driver is not properly configured for the specified operating system.

4. The host multipath driver is not supported.

This alert has triggered the other alert which is Volume not on preferred path.

Kindly make sure all above checks are done(if mpio is already configured then follow below

||Degraded drive channel/path alerts||

>Support bundle reviewed and Degraded drive channel/path alerts reported by the array against drive

at shelf 0, bay 9

>Part request and FSO created. Manually fail the drive and uncheck copy content box requested to

customer prior replacement

>Customer is suspecting this is not drive issue related but physicals cable issue related since the issue

started after array movement on Jun 22.

>>Manually failed the drive and replaced it.

>>Went ahead and manually failed the drive at shelf 0, bay 9

>>Fail operations are going on , informed him once the dive is failed he can replace the drive.

>>CX requested to have this case transfered to next available engineer for continuous support. Hence

moving this case to amerl1

-- Recovery Guru procedures -- Failure Entry 1 DEGRADED\_DRIVE\_CHANNEL-Recovery Failure Type Code 71

Storage array nadaynetappef233

Degraded drive channel 2

LUN DISSCONNECTION

2008793911

To move this case forward, we need some information from you. Please provide the below detasil.

1> Kindly elaborate on this issue.

2> Name of the volume and time stamp?

3> Is the Issue still ongoing or resolved?

4> Are the LUNS visible now and connected back?

5> Impacted host names? all hosts are one?

or

5> host names(as specified at storage end) and wwpn numbers

6> Any error message at host end or storage end?

7> Kindly share the latest manually collected logs.

8> Impact and shift timing ?

||LUN NOT VISIBLE TROUBLESHOOTING||

failures, MEL, PORTS, CONTROLLERS, FLAPPING ENEVTS,

agar sare voluem optimal hai hai and mapped dikr hai then looks clean to an extent

Storag arrya se hi check karte hai

Disk pool section, sab wahi ha --No failure found. --DDP is optimal --All the volumes are optimal --I see all the volumes are properly mapped to respective hosts

--All the FC HIS ports on each controller are online. --Not sure which volume and host is of concern need to check that

-- Flapping --Could see lot of flapping may be due to the port was recently enabled to have the new host

connected to port 6

doesn't look like it is stable as the bad char count increases, not sure if IMT was checked

before this, also needs to be validated if the count still increases.

||LUN NOT ACCSEBLE||

https//kb.netapp.com/Advice\_and\_Troubleshooting/Data\_Storage\_Systems/E- Series\_Storage\_Array/How\_to\_troubleshoot\_when\_E- series\_Luns\_are\_not\_accessible\_from\_the\_host\_end

source -----------------------destinatin

india ---------------------us

with in same network for both sync and async

- Refer to the following article establishing the session

asyc- fast/ seepd((good fault tolerance) but data loss (data will be copied in a perticuklar time set)

sync - bad fault tolerance 0.5, less speed but-- data keep coping while writing (no data loss )

[\\\\\\\\\\\\\\\\\\\\\\\\\\\Asynchronous](file:///\\Asynchronous) Replication error.|||\\\\\\\\\\\\\\\\\\\\\\\\\\\\

After reviewing the case details, I will need some additional information to understand your issue

better.1. Please elaborate on the issues?

2. Is this is a new setup or configuration?

3. Please share the error screenshot or error message?

4. Since when are you facing this issue, please share the exact timestamp?

5. What is the business impact or urgency?

6. What are your working hours with the time zone?

7. Please share the CASD logs following the below document

Replication

Wednesday, January 12, 2022 10:14 PM

E-MIRRORING Page 3

ASYNCHRONOUS MIRRORING : (Part of srdf, used for remote replication, copy the data

from one array to another)

<https://mysupport.netapp.com/NOW/public/eseries/sam_archive1150/index.html#page/GUID-8538272>

A-B802-49D9-9EA2-96C82DAD26A2/GUID-F7104AC6-43D7-485A-B383-2A5C7980DA96.html

<https://mysupport.netapp.com/NOW/public/eseries/sam_archive1150/index.html#page/GUID-8538272>

A-B802-49D9-9EA2-96C82DAD26A2/GUID-7CB6A5B2-706F-4DDC-889E-0B86B05DF620.html

<http://www.cosonok.com/2016/06/e-series-how-to-configure-asynchronous.html>

Asynchronous mirroring : <https://docs.netapp.com/ess-11/index.jsp>

Mirroring through an iSCSI interface

Unlike FC, iSCSI does not require a dedicated port. When asynchronous mirroring is

used in iSCSI environments, it is not necessary to dedicate any of the storage array’s

front-end iSCSI ports for use with asynchronous mirroring; those ports are shared for

both asynchronous mirror traffic and host-to-array I/O connections.

MSW RESTART

Method to restart the web service can be done using the controller shell

1. SSH to the controller shell using the "diag" user.

o Enable remote access using SSH (Only if it is not enabled)

o The diag user password depends on the controller firmware level. (Kindly add GUI password)

2. Run the command "sudo systemctl restart msw"

OR

For the case # 2008769493 issue “ASUP ENABLE” please restart the webservices for both the controllers

one at a time.

Method to restart the web service can be done using the controller shell

1. SSH to the controller shell using the "diag" user.

o Enable remote access using SSH (Only if it is not enabled)

o The diag user password depends on the controller firmware level. (Kindly add GUI password)

2. Run the command "sudo systemctl restart msw"

Once done please and disable enable ASUP and then check if works, if no, please collect latest logs and

share it with us

MULTIPATHING

( <https://library.netapp.com/ecm/ecm_download_file/ECMP1532513> (Page 7) to check

supported multipath drivers)

<https://library.netapp.com/ecm/ecm_download_file/ECMP12404601> --> MULTIPATH DRIVE CONFIGURE ==Improperly configured SAN Host multipath.

MPIO is not configured at the host end: host for which we see a clear alert for that reason:

Failure Entry 3: ALB\_INCOMPATIBLE\_HOST\_DRIVER-Recovery Failure Type Code: 474

Storage array: abc

Affected host: xxx

Host operating system type: Windows(clustered or non-clustered)

We have reference KB:

<https://kb.netapp.com/Advice_and_Troubleshooting/Data_Storage_Software/E>Series\_SANtricity\_Software\_Suite/%22Host\_multipath\_driver\_configuration\_error\_detected%0D%22

\_reported\_from\_E-Series\_array

For WINDOWS cx has to download DSM (.no Native/ third party.)

Configuring the multipath software (WINDOWS)

<https://library.netapp.com/ecmdocs/ECMLP2601370/html/GUID-73575700-B81F-4567>-

A221-08B42099C333.html#:~:text=Multipath%20software%20provides%20a%

20redundant,the%20multipath%20package%20for%20Windows.

You cannot download the DSM software separately. The DSM package comes with the Santricity OS

software. -

- Click on the “E-series Santricity OS controller software” and download the latest Santricity OS softwar - Installing DSM will require host reboot - Netapp eseries DSM is available for windows

To check if DSM is installed – Go to program files for a folder named DSMDrivers. In this file we would

expect to see a folder called mppdsm. If you do not have this folder install the DSM driver for e-series

which was included with the SANtricity management software installation package.

Or

If you have installed the SANtricity storage manager on his windows host, kindly verify whether

SANtricity storage manager is showing in control panel and also provide the output of configuration

mpio

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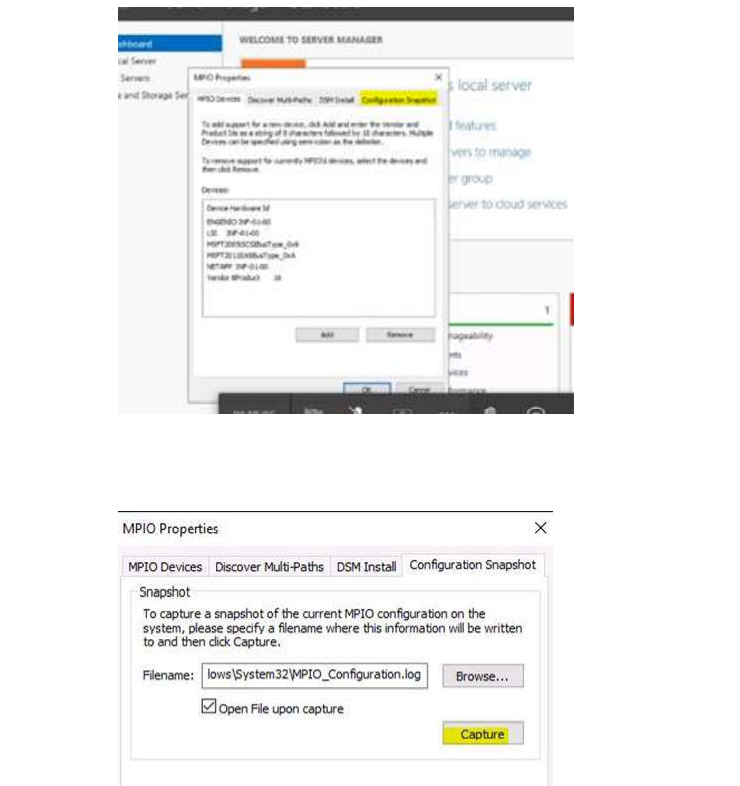
SANtricity storage manager is showing in control panel and also provide the output of configuration

snapshot from MPIO properties.

OR

STEP : Control panel and go to à MPIO -- > MPIO properties -> Configuration Snapshot ->

Capture (Once you click on Capture, you will get a note pad, kindly share the note pad



Open MPIO properties -> click on capture -> Once you click on capture, you will get a note pad. Kindly

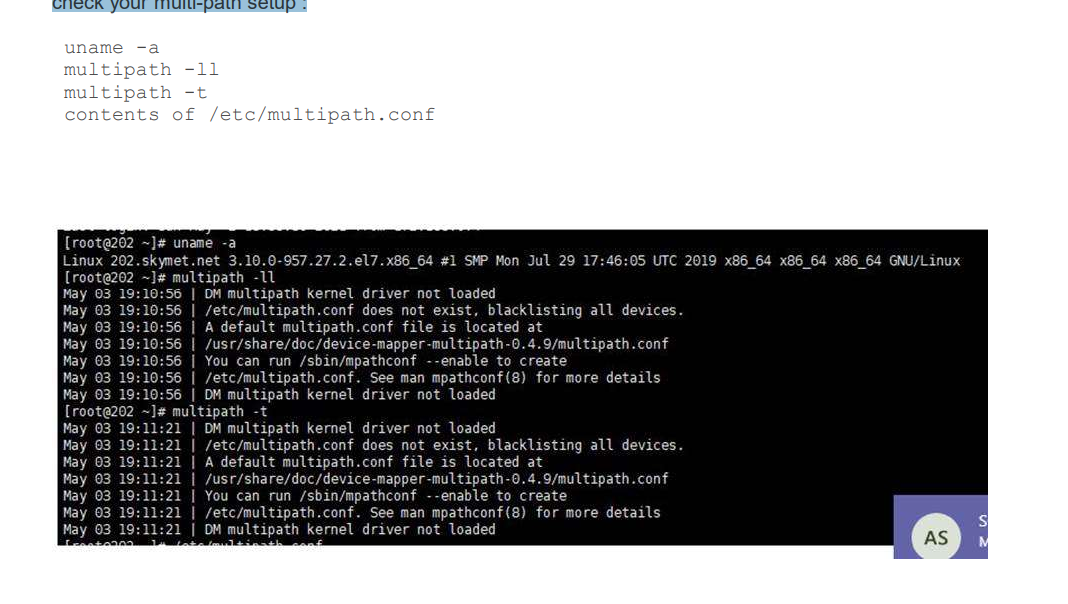
share the notepad with us so that we can check the MPIO is configured or not.

SOFWARE DOWNLOAD LINK:

<https://mysupport.netapp.com/site/products/all/details/eseries-santricity/downloads-tab>

LINUX

check your multi-path setup :



If customer does not have DMMP running or loaded, this issue will occur.

- Install the linux DMMP driver and configure it on their Centos machine.

express guide and power guides for Linux systems: below KB (page 13)

[https://docs.netapp.com/ess-11/topic/com.netapp.doc.ssm-exp-ic-lin/Linux%20express%](https://docs.netapp.com/ess-11/topic/com.netapp.doc.ssm-exp-ic-lin/Linux%20express%25)

20configuration.pdf -

Multipath drivers for the Linux operating system

<https://library.netapp.com/ecmdocs/ECMP12404601/html/GUID-3C9DE804-8271-43CD>- B57E-8B0A5D044197.html Eseries Page 37

B57E-8B0A5D044197.html - It requires host reboot request hence need to take a downtime and have this enabled. We have mount (mapping) option in linux.

Takes hardly 30 min to enable mpio

You can refer to the below express guide and power guides for Linux systems:

[https://docs.netapp.com/ess-11/topic/com.netapp.doc.ssm-exp-ic-lin/Linux%20express%](https://docs.netapp.com/ess-11/topic/com.netapp.doc.ssm-exp-ic-lin/Linux%20express%25)

20configuration.pdf

Please refer the <https://library.netapp.com/ecm/ecm_download_file/ECMP1532513> (Page 7) for

supported multipath drivers

------- Please find the below doc:

Device mapper multipath (DM-MP) for the Linux operating system

<https://library.netapp.com/ecmdocs/ECMP12404601/html/GUID-4E248E7A-2FB1-4EB8-A65F-4A68F3222784.html>

Installing DM-MP

<https://library.netapp.com/ecmdocs/ECMP12404601/html/GUID-49E94674-947F-4921-A1D1>-

CE9B42DCBA39.html

<https://library.netapp.com/ecm/ecm_download_file/ECMLP2601371> 11.40

<https://library.netapp.com/ecm/ecm_download_file/ECMLP2503745> 11.30

VMWARE :

FOR VMWARE THEY HAVE INBUILD MPIO (NATIVE MULTIPATHING) Vmware will have its own inbuild

MPIO called Native Multipathing

Note : For VMware, you use the inbox Native Multipathing Plug-in (NMP). VMware provides

plug-ins, known as Storage Array Type Plug-ins (SATP), to handle the failover

implementations of specific vendors’ storage arrays. The SATP you should use is

VMW\_SATP\_ALUA.

From <[https://netapp-my.sharepoint.com/personal/puspitas\_netapp\_com/Documents/Desktop/Netapp%20Documents%](https://netapp-my.sharepoint.com/personal/puspitas_netapp_com/Documents/Desktop/Netapp%20Documents%25)

20.docx> ------------------------------------------------------------------------------------------------------------------------------------------

------------

Issue: Can we install the netapp native software DSM multipath for hosts. kindly confirm in the netapp

site it says DSM is end of support in netapp if so do we have any other alternative software

Yes, the Data ONTAP DSM is now end of version support since December 31, 2019.

For E-series systems we recommended you to use E-Series DSM softwareand this DSM is different than

the OnTap DSM, and E-Series DSM is still supportable.

The MPIO Device Specific Module (DSM) failover driver is included as part of the E-Series/EF-Series

SANtricity Storage Manager installer for Windows.

If you have not installed already, then you can perform a full installation of SANtricity Storage Manager

software, and E-Series DSM will install along with it.

<https://mysupport.netapp.com/site/products/all/details/eseries-santricityos/downloads-tab>

||NEW SET UP ||

---->2008685120 - A new Redhat 7.9 has been connected to current E SEries assigned volumes/luns are

not visible.

FC- LINUX -- > https//docs.netapp.com/ess-11/index.jsp AND ACC TEAM

---->2008799944

Need to reset to the factory setting-- https//library.netapp.com/ecm/ecm\_download\_file/ECMLP2842063

---->2008799957

I see that is new configuration and we have a document to configure management ports

https//library.netapp.com/ecm/ecm\_download\_file/ECMLP2842063

---->Configure iSER over InfiniBand ports

<https://docs.netapp.com/us-en/e-series/pdfs/sidebar/iSER_over_InfiniBand_Setup.pdf>

https//docs.netapp.com/ess-11/index.jsp?topic=%2Fcom.netapp.doc.ssm-sam-117%2FGUID- B4CD1B54-02FE-4A56-9A36-CF58B005891B.html&cp=5\_0\_4\_1\_1\_2

iSER over InfiniBand Express Setup for linux only

https//docs.netapp.com/ess-11/index.jsp?topic=%2Fcom.netapp.doc.ssm-exp-ic-lin%

2FGUID-5DE3602B-6DB6-4AF7-BBE2-AF11FC521DF7.html&cp=3\_0\_4

-----> MIRRORING

https//library.netapp.com/ecm/ecm\_download\_file/ECMP1394847

---->ASYNCHRONOUS MIRROR

Document on mixed system ASYNC mirroring. (starting on Page 31)

TR-4656-0118-SANtricity-OS11.40-Mirroring-Feature-Deployment-Guide.pdf

INITIAL SYNCHRONIZATION https//www.netapp.com/pdf.html?item=/media/17133-tr4656pdf.pdf

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CA

https//mysupport.netapp.com/NOW/public/eseries/sam\_archive1150/index.html#page/GUID-8538272

A-B802-49D9-9EA2-96C82DAD26A2/GUID-50A20100-3E8C-4A2D-91CC-B9A550B08791.html ----> 2008756266 - IB link down, configuring first time. / Unable to configure ISCSI port -- new config

To have the Host port protocol conversion

You can convert the protocol of a host to a different protocol so that compatibility and communication

NEW CONFIG(DOC)

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You can convert the protocol of a host to a different protocol so that compatibility and communication

can be established

http//docs.netapp.com/ess-11/index.jsp?topic=%2Fcom.netapp.doc.e-2800-sysmaint%

2FGUID-9FB27DEE-1970-47C4-9F60-812A1745003F.html

NOTE Please refer Overview and requirements section in the above link. --> 2008782037 -NO\_REDUNDANCY\_TRAY-Recovery Failure Type Code 33

Hardware Cabling Guide -- > https//library.netapp.com/ecm/ecm\_download\_file/ECMLP2526737

--> In-band management out-band management

Reference link

https//library.netapp.com/ecmdocs/ECMP12404965/html/GUID-CA995A42-1406-4F70- A1B6-1FE8BC0DC32E.html --> Host types that support the "Automatic Load Balancing feature"

https//mysupport.netapp.com/NOW/public/eseries/sam\_archive1150/index.html#page/GUID-8538272

A-B802-49D9-9EA2-96C82DAD26A2%2FGUID-90A829B6-ACEE-41C6-8595-91C7D90554EB.html%

23wwconnect\_header

-->

SOP/document to assign the volume/lun on Hyperflex/VMWARE through ISCSI and FC

<https://docs.netapp.com/ess-11/topic/com.netapp.doc.ssm-sam-117/GUID-E44442A0-8306-40C2-8AE6>- A6122445628C.html?cp=1\_0\_3\_2\_1\_0\_4

https//mysupport.netapp.com/NOW/public/eseries/sam\_archive1150/index.html#page/GUID-8538272

A-B802-49D9-9EA2-96C82DAD26A2/GUID-E44442A0-8306-40C2-8AE6-A6122445628C.html

https//mysupport.netapp.com/NOW/public/eseries/sam\_archive1150/index.html#page/GUID-8538272

A-B802-49D9-9EA2-96C82DAD26A2/GUID-E44442A0-8306-40C2-8AE6-A6122445628C.html

PASSWORD RESET

1> Legacy model

We have TELNET is legacy model, if serial then log in as shell

We have ssh for New model

No need to enable ssh / telnet for serial connect.

<https://kb.netapp.com/Advice_and_Troubleshooting/Data_Storage_Systems/E>Series\_Storage\_Array/How\_to\_log\_into\_an\_E-Series\_controller\_serially -

<https://kb.netapp.com/Advice_and_Troubleshooting/Data_Storage_Systems/E>Series\_Storage\_Array/How\_to\_reset\_Administrator\_or\_Monitor\_password\_for\_older\_E-Series\_arrays -

<https://kb.netapp.com/Advice_and_Troubleshooting/Data_Storage_Systems/E>- Series\_Storage\_Array/How\_to\_log\_into\_an\_E-Series\_controller\_serially -

From <[https://netapp-my.sharepoint.com/personal/puspitas\_netapp\_com/Documents/Desktop/Netapp%20Documents%](https://netapp-my.sharepoint.com/personal/puspitas_netapp_com/Documents/Desktop/Netapp%20Documents%25)

20.docx>

|| New model ||

|| ACTION PLAN ||

-Engineer needs to visit the site with Laptop and a serial cable for santricity model 5700. -Need to connect serially the serial cable to one of the controller . -Log in using below user name and password.

Username: spri

Password : SPRIentry

-Once logged in, user will see the Service Interface Main Menu. Select option 3 to reset the admin password, then Y to confirm. -Type Q to exit from the SPRI menu and return to the main login prompt. - Log in to GUI to reset the password. -Please refer the below KB to reset the password

<https://kb.netapp.com/Advice_and_Troubleshooting/Data_Storage_Systems/E>- Series\_Storage\_Array/How\_to\_reset\_SANtricity\_System\_Manager\_local\_admin\_password\_starting\_with\_11.40.2\_code

DIAG

SPrientry

Is this new configuration or has the configuration worked as expected in the past?

• Is there a current performance issue?

• When did the performance issue begin? - Provide Date and Time( with time zone) that the performance issue

began? Eg: 14.01.22 6:00 AM /PM IST?

• Were there any changes or maintenance performed?

• Is the performance issue impacting all hosts or specific

.

• Is the performance issue impacting all applications or specific applications? - If specific, please specify which

applications are impacted.

• Provide the names of the impacted volumes.

• What is the latency reported?

• Where do you monitor latency? Please share the screenshot or error message?

• What is the expected latency value?

• How was current expectation reached? Documentation, sales, etc? Provide the document used to set the

expectations.

• Please let me know the current business impact.

• What are your working hours with the time zone?

Also, the given support data does not have enough data to

review and partial.

• Kindly collect the CASD using below steps and re-upload to us for review.

How to collect support data for NetApp E-Series Storage Arrays: <https://kb.netapp.com/Advice_and_Troubleshooting/Data_Infrastructure_Management/E>- Series\_SANtricity\_Management\_Software/How\_to\_collect\_support\_data\_for\_NetApp\_E-Series\_Storage\_Arrays

Perf related query-- 2009149251

|||||||||||| PERFORMANCE ||||||||||||

EOVS is the first thing... I am not saying that it is the cause of the issue, but if we are not seeing any

visible issues from

storage side, then Upgrade needs to be first one.. also, need to look into their drive firmware

Since when are they seeing this latency ? What's the first occurrence of the issue ?

Is their host team involved and have they presented their analysis ?

Controller firmware is EVOS (11.42)which is susceptible for various bugs and performance related issues

----------------------------------------------------------------------------- ||PERFORMANCE ||

[https://docs.netapp.com/ess-11/index.jsp?topic=%2Fcom.netapp.doc.ssm-sam-116%](https://docs.netapp.com/ess-11/index.jsp?topic=%2Fcom.netapp.doc.ssm-sam-116%25)

2FGUID-94858C3A-1873-426C-B23D-2D54B2382153.html

PERFORMANCE

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||PERFORMANCE ||

-LOGS

-check when did they started to experience this issue. Did they performed any changes to the E- series?

-Have you checked compatibility ? Also what is the current Business impact ?

-Since when are they seeing this latency ? What's the first occurrence of the issue ? Is their host team

involved and have they presented their analysis ?, changes made ?

From <[https://netapp-my.sharepoint.com/personal/puspitas\_netapp\_com/Documents/Desktop/Netapp%20Documents%](https://netapp-my.sharepoint.com/personal/puspitas_netapp_com/Documents/Desktop/Netapp%20Documents%25)

20.docx> ------------------------------------------------------------------------------------------

Interpret performance data

Fine tune configuration for performance requirements

Is cache enabled? Is the state currently suspended? -- Write cache enabled

Are any volume groups degraded? - NO

Are there any exclusive operations in progress (drive reconstruction and dynamic volume expansion)? -- NO

Are there more partial writes versus full? See 'write algorithms' in evfShowVol in the stateCapture.

Are there any drive-side issues reported (Destination driver events or check conditions in MEL, high SAS

phy errors, and drive-side timeouts)?

Are there any indications of a slow drive (iditnall queue depth)?

Are there any degraded SAS wide ports or FC drive side channels?

Are there any controller reboots or failovers during the time frame that performance impact is

reported?

Is the RAID level appropriate for the workload?

Is the RAID segment size in harmony with the host application (important to avoid read-modify-write

penalties)? What is the typical I/O size? Is the I/O random/sequential/mixed?

Is dynamic read cache prefetch enabled on volume and workload is rand

\|||||||| LATANCY ISSUE||

||LATANCY Issue in LUN||

To move this case forward, we need some information from you. Please provide the support data and

attach it in the same email chain

1. Name of the volume and time stamp?

2. Kindly provide source and destination volume details.

3. What is the performance expected? Can you elaborate more your current response?

4. Is there an error? What is the exact error message you are receiving and where (log file, SysMgr, CLI,

etc...) is it seen? Can you share some screenshots?

5. Is the performance issue constant or intermittent? (Provide manually collected support data)

6. Is this a new install, has the configuration worked as expected in the past

7. Any maintenance or changes to the configuration?

8. Kindly share the latest logs so that I can check further on this.

9. What are your working hours with the timezone?

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9. What are your working hours with the timezone?

10. Busiedd impact

there are a lotof things we can check, like flapping, bad char, DFW updates, etc

|| CUSTOMER CONTEXT ||

1. Issue -->> Latency and very slow performance issue

2. Is the performance issue impacting all hosts or specific hosts? If specific, please provide the names of

the impacted hosts -->> OFSAA UAT VM getting slowness.

3. Is the performance issue impacting all applications or specific applications? If specific, please specify

which applications are impacted ---> > OFSAA Application

4. Is the performance issue impacting all volumes or specific volumes? If specific, please provide the

names of the impacted volumes. --> > NA

5. Is this a new installation? -- > NO

If No

When did the performance issue begin? Provide Date and Time that the performance issue began. ---> >

Mon 6/28/2021 742 PM

6. NO -> changes or maintenance activities taking place prior to or at the time the performance issue

began.

7. Kindly share your Business impact ? -- > > NA

8. Can you provide us your working hours? ---> > Any time

User roll change

2800

<https://docs.netapp.com/ess-11/index.jsp?topic=%2Fcom.netapp.doc.ssm-sam-116%2FGUID>- E7F985CB-4A9D-4BE8-B551-5F6CCB4CF571.html&cp=6\_0\_5\_6\_0\_2

The storage model E2700 or E5600 storage array, don’t have this feature supported to configure

monitor user roles/access management.

\* If you do not use Access Management or it is not supported, setting an Administrator password for

your storage array protects it from being modified by unauthorized users

Password change

[https://docs.netapp.com/ess-11/index.jsp?topic=%2Fcom.netapp.doc.ssm-sam-116%](https://docs.netapp.com/ess-11/index.jsp?topic=%2Fcom.netapp.doc.ssm-sam-116%25)

2FGUID-37A401E4-A5CA-4D83-ABC6-0AEA920DAE7D.html&cp=6\_0\_5\_6\_1\_1

Unable to change vol name

Traditional volume groups tend to take a lot more time to expand, and here is why. With traditional volumes

groups, volumes are written sequentially. So if you are expanding a volume that reside in the beginning of the

volume group (Offset 0), and there are other volumes in the volume group, the other volumes must be shifted to

different offsets before we can expand the first volume. Once those volumes are shifted up in offsets to

accommodate for the new capacity, they are trying to add to the first volume, then the first volume can be

expanded.

This is normal for E-Series when using a volume group. You can modify the priority of the operation in order to

speed it up, but system performance might be compromised.

The lowest priority rate benefits system performance, but the modification operation takes longer. The highest

priority rate benefits the modification operation

For your reference:

Decide whether to use a pool or a volume group:

[https://docs.netapp.com/ess-11/index.jsp?topic=%2Fcom.netapp.doc.ssm-sam-117%](https://docs.netapp.com/ess-11/index.jsp?topic=%2Fcom.netapp.doc.ssm-sam-117%25)

2FGUID-94CB6FD7-59ED-4839-AAB5-7E82B97B8505.htm

UPGRADE

<https://library.netapp.com/ecm/ecm_download_file/ECMLP2597235>

E2800 and E5700

<https://mysupport.netapp.com/ecm/ecm_get_file/ECMLP2601342>

E2700 and E5600

DRIVE UPGADE : <https://docs.netapp.com/sgws-115/index.jsp?topic=%2Fcom.netapp.doc.sg-app>-

install%2FGUID-9A6F1C67-6626-4FD5-A83D-0BA4F153968F.html

<https://kb.netapp.com/Advice_and_Troubleshooting/Data_Storage_Systems/E>- Series\_Storage\_Array/How\_to\_upgrade\_E-Series\_Controller\_Firmware\_07.xx\_and\_08.xx - upgrade E-

series controller (video)

Upgrade steps: Page 7,8

<https://library.netapp.com/ecm/ecm_download_file/ECMLP2597235>

Firmware upgrade:

Download link:

NE01 - <https://mysupport.netapp.com/site/downloads/firmware/e-series-disk>-

firmware/download/ESERIES/NE01/D\_HUS726060AL5214\_30604114\_NE01\_XXXX\_002.zip

MS03 - <https://mysupport.netapp.com/site/downloads/firmware/e-series-disk>-

firmware/download/ESERIES/MS03/D\_KPM51VUG1T60\_30604020\_MS03\_XXXX\_000.zip

MS04 - <https://mysupport.netapp.com/site/downloads/firmware/e-series-disk>-

firmware/download/ESERIES/MS04/D\_HUS724030ALS640\_30602048\_MS04\_XXXX\_000.zip

DIRECT KB FOR DFW

<https://kb.netapp.com/Advice_and_Troubleshooting/Data_Storage_Systems/E>- Series\_Storage\_Array/Upgrade\_E-Series\_Drive\_Firmware\_Using\_SANtricity\_System\_Manager\_(SAM) --Refer below link for upgrade order ONLY:

<https://kb.netapp.com/Advice_and_Troubleshooting/Data_Storage_Systems/E>-

UPGRADE

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<https://kb.netapp.com/Advice_and_Troubleshooting/Data_Storage_Systems/E>- Series\_Storage\_Array/How\_to\_upgrade\_E-Series\_drive\_firmware\_using\_SANtricity\_Storage\_Manager

And

<https://kb.netapp.com/Advice_and_Troubleshooting/Data_Storage_Systems/E>- Series\_Storage\_Array/What\_are\_the\_best\_practices\_for\_upgrading\_E-Series\_Controller\_Firmware\_

06.xx%2C\_07.xx%2C\_and\_08.xx%3F

<https://kb.netapp.com/Advice_and_Troubleshooting/Data_Storage_Systems/E>- Series\_Storage\_Array/How\_to\_upgrade\_E-Series\_ESM\_(IOM)\_Firmware\_07.xx\_and\_08.xx\_CFW

ESM

<https://kb.netapp.com/Advice_and_Troubleshooting/Data_Storage_Systems/E>-

Series\_Storage\_Array/How\_to\_upgrade\_E-Series\_Controller\_Firmware\_07.xx\_and\_08.xx - CONTORLLER FIRMWARE

Model 5700, and current CFW for that is : -Netapp-asup-os-version: 11.50

for which we have below versions available:

==11.50.3R2(IMT check for this version is not required)

==11.60.3R2

==11.70R3 (latest controller firmware version.)

For:11.50.3R2 download link is:

<https://mysupport.netapp.com/site/products/all/details/eseries-santricityos/downloads>-

tab/download/62735/11.50.3R2/downloads

For:11.60.3R2 download link is:

<https://mysupport.netapp.com/site/products/all/details/eseries-santricityos/downloads>-

tab/download/62735/11.60.3R2/downloads

Download link is as below: for 11.70R3

<https://mysupport.netapp.com/site/products/all/details/eseries-santricityos/downloads>-

tab/download/62735/11.70R3/downloads

which is latest controller firmware version.

Upgrade steps:

Please go through the Page 7,8

<https://library.netapp.com/ecm/ecm_download_file/ECMLP2597235>

--If you need assistance on upgrade, please reach out to the accounts team. They will help you further.

A detailed plan of action for the controller firmware upgrade for E2800:

For model 2800, and current CFW / current OS Software Version: 11.60 we have both 11.70.3 latest version

available.

<https://mysupport.netapp.com/site/info/santricity-support-matrix>

A detailed plan of action for the controller firmware upgrade for 2800:

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A detailed plan of action for the controller firmware upgrade for 2800:

-Validate your setup with our interoperability matrix(IMT) <https://mysupport.netapp.com/matrix> (Advanced->

change criteria ->Eseries San Host-> Next >> Refine Search Criteria ->host details)

Find the link below to download the same:

11.70.3 : <https://mysupport.netapp.com/site/products/all/details/eseries-santricityos/downloads>-

tab/download/62735/11.70.3

Upgrade steps:

<https://library.netapp.com/ecm/ecm_download_file/ECMLP2597235> --Controller Upgrade procedure : (VIDEO)

<https://kb.netapp.com/Advice_and_Troubleshooting/Data_Storage_Systems/E>-

Series\_Storage\_Array/How\_to\_upgrade\_E-Series\_Controller\_Firmware\_07.xx\_and\_08.xx

NOTE: · There is no roll back plan for controller firmware for Eseries.

Upgrade can be performed both online and offline. After OS upgrade, the controller will get rebooted, if

redundancy (multipathing ) is configured then the reboot will not have any impact in the environment

however, we recommend taking a maintenance window. · Upgrade has to be performed from your end. If you face any Issues during the upgrade, you can contact

Netapp support , any available engineer will help you further. · Please let me know the below :

1. When are you planning to perform the upgrade ?

2. Is there any impact you are facing ?

-------------------- ----------------------------------------------------------------------------------------------------

QUERIES REGARDING UPGRADE

Prechecks can be done anytime hence you may run the prechecks now.I f you face any issue in

prechecks kindly provide the error message so I can check further. If the prechecks are fine, you may

continue with the upgrade whenever It is feasible for you.

1. --The below link provides information on pre-upgrade health checks and procedures to upgrade. <https://kb.netapp.com/?title=Advice_and_Troubleshooting%2FData_Storage_Systems%2FE>- Series\_Storage\_Array%2FHow\_To\_Upgrade\_E-Series\_Controller\_Firmware%252C\_NVSRAM%

252C\_and\_IOM\_Firmware\_Using\_SANtricity\_System\_Manager\_%28SAM%29

1. There is no roll back plan for controller firmware for Eseries.

2. IMT check is only required if you are using ISCSI protocol, For FC IMT check is not required.

3. Upgrading CFW from 11.40 GA to any available major version requires IMT check.

If you face any Issues during the upgrade, you can contact Netapp support , any available engineer will

help you further.

4.

After OS upgrade the controller will get rebooted, If redundancy is there then the reboot will not be

effect. Also need to upgrade 1 controller at a time.

5.

For the latest versions only controller firmware needs to be upgraded (SANtrcity is the management

software, which inly used on legecy models)

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6. Upon checking the logs I see the below error in recovery guru

Failure Entry 1: DISK\_POOL\_UTILIZATION\_CRITICAL-Recovery Failure Type Code: 426

For this error you will need to extend the capacity. However, this error will not affect the upgrade hence

you ca continue with the prechecks.

>upgrade can be performed online/offline

Online -> no downtime - non disruct

offline -> with downtime

Upgrading from 8.25 à 8.40 is MAJOR upgrade, we need to check IMT,mpio(CANT PROCEEF

FURTHER WITH THE ERR FIRST CLEAR THE ERR THEN PROCEED)

7.

8. Upgrading from 8.30à 8.40 need imt

9.

1. What is IMT checks ?

>> We check CFW compatibility over the host OS , only in case of fc (for minor upgrade such as

11.xx)

2. Right now we have alert for pool capacity used above 90% , will it be a problem while upgrade ?

>>In case of precheck clears , you should be able to upgrade even if it’s a pool capacity error.

Recommendation is to clear the error before upgrading.

3. What if we face drive failure that time will it affect pool health ?

>>Drive failures are less likely to be happen, as we are upgrading the controller firmware here,

however as long as we have a drive as a preservation capacity or hot spare this should be okay .

Also there is new alert for host “ Host Multipath Driver Incorrect “ for an existing windows host ,

host team confirmed no issue visible related to multipath from host side. –

4.

>>We will need to check on this alert. if you continue with this alert there is a chance of host might

lose connectivity during an upgrade Or you can take a downtime and perform an upgrade so there

will not be any risk of host disconnection. Make sure there is no IO's then start upgrading the CFW.

NOTE

--The upgrade has to be performed from your end

--We can share a detailed plan of action with steps to perform the CFW upgrade

- There is a disk pool utilization alert, please work on releasing utilization or you may add new disk.

, we see the array has disk pool utilization alert reaching 100%, you need to work on releasing utilization. I

requested you to proceed with the upgrade. - --------------------------------------------------------------------------------

Is cfw upgrade disruptive?

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Ans:

Upgrade can be performed in offline/online both ways. After OS upgrade the controller will get

rebooted, if redundancy(MPIO) is there then the reboot will not be effect however recommendation

is to take a maintenance window.

You may log a different case with NetApp whenever you are planning to upgrade the CFW.

(HIC replacement)

We recommended for a downtime to be on the safer side .

However reseating controller B can be done without downtime but make sure that the multipath is in

the right and proper place so that once we make the controller B offline it should not impact

business. Once controller B is in offline state, all the volumes owned by controller B will be

transferred to controller A ownership and then we can do the action plan with controller B.

If the multipath is not in place or not properly configured, you might have loss of I/O access.

If above requirements are set properly engineer can remove controller B and proceed with the action

plan as mentioned in the case.

Is dfw upgrade disruptive ?

Ans :

you can perform the drive firmware upgrade online or offline.

Online : Non disruptive (during online upgrade there might be a slight performance impact).

Offline : Take downtime and perform. (All IO's needs to be stopped during this )

From <[https://netapp-my.sharepoint.com/personal/puspitas\_netapp\_com/Documents/Desktop/Netapp%20Documents%](https://netapp-my.sharepoint.com/personal/puspitas_netapp_com/Documents/Desktop/Netapp%20Documents%25)

20.docx>

as we are from break-fix team, we may not be able to help you with the upgrade, we can only share the

document on how to perform the upgrade. The upgrade has to be performed from your end.

If you encounter any error/ Issues during upgrade, kindly email /call NetApp support and refer case #

2008922398. We are here to help you.

In case you need a complete assistance from NetApp on upgrade, please let me know so that I can

engage accounts team for you.

Vulnerabilities

Do we support vulnerability cases which doesn't have any CVE ID's

As per the latest update, yes we can support customer

<https://kb.netapp.com/Advice_and_Troubleshooting/Miscellaneous/How_to_process_a_vulnerability_r>

eport\_for\_a\_NetApp\_product

<https://kb.netapp.com/Advice_and_Troubleshooting/Miscellaneous/How_to_search_for_CVE_IDs_on_t>

he\_NetApp\_Security\_Advisories\_site

Please post the security vulnerability in Security Forums and get advise, when there are no CVE ID's. ------------- VULNARIBILITY

2008829558

As we discussed in E series only CFW version / Drive Firmware is updated else nothing in needed.

Also for the CVE ID’s you shared for which I have relied with the links which states the E series is not

affected hence we can ignore it.

With respect to CVE -ID-CVE-2008-5161 we could not find much information from our end hence no

action required from NetApp.

Based on the title & description we may not be able to provide the solution, for the Vulnerability issue

CVE ID is required.

VULNARIBILITY:

<https://smartsolvecm.netapp.com/ui/#/case/2008829558>

Hassan, SMArman: Hello Team, Please assist me with case: : <https://smartsol>...

posted in TSC Technical Chat / E-Series at Tuesday, July 6, 2021 6:24:26 PM

From <[https://netapp-my.sharepoint.com/personal/puspitas\_netapp\_com/Documents/Desktop/Netapp%20Documents%](https://netapp-my.sharepoint.com/personal/puspitas_netapp_com/Documents/Desktop/Netapp%20Documents%25)

20.docx>

As we discussed unfortunately CVE ID’s are needed so that we can check and provide solution

accordingly as w

e do not have CVE ID’s in case as its not shared from the tool which monitored it sharing solution is not

possible without CVE ID’s.

Bases on the title & description we may not be able to provide the solution, for the Vulnerability issue

Vulnaribility

Wednesday, January 12, 2022 10:20 PM

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Bases on the title & description we may not be able to provide the solution, for the Vulnerability issue

CVE ID is must.

VULNARIBILITY WITH OUT CVE ID:

-The server's TLS/SSL certificate is self-signed. Self-signed certificates cannot be trusted by default, especially

because TLS/SSL man-in-the-middle attacks typically use self-signed certificates to eavesdrop on TLS/SSL

connections.

-Debian terminated support for Debian GNU/Linux 8 "jessie" on Jun 30, 2020. All Debian versions prior to 9.0

"stretch" may have unpatched security vulnerabilities.

-The TLS/SSL server's X.509 certificate either contains a start date in the future or is expired. Please refer to the

proof for more details.

-Web servers that respond to the OPTIONS HTTP method expose what other methods are supported by the web

server, allowing attackers to narrow and intensify their efforts.

HTTP OPTIONS: HTTP/80 exists solely to redirect to HTTPS/8443 - no unencrypted communications are supported

but there is no control for HTTP or OPTIONS at this time. While OPTIONS was required in the past, it may no longer

be needed and once validated would be dropped

1>

2> Out of Support Debian: Debian was upgraded from Jessie to Buster in 11.70.2.

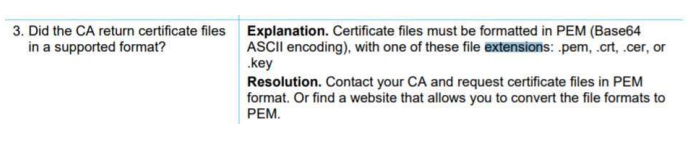
è You informed you will check with Ravi to have the system upgraded to 11.70.2

3> Self-signed cert: resolvable via configuration and the use of CA signed certs:

c

DOC: <https://www.netapp.com/media/17218-tr4813.pdf>

è Also, CSR files would be with extension .cer as mentioned in the above doc.



As discussed , you will be working on it internally and we agreed on closing the current case 2009047088.

Please do let me know incase you have any further query; I am happy to assist you. -->SSH weak key exchange algorithm enabled :

An upcoming SANtricity release will disable some of the weak SSH parameters but it ships with SSH

disabled by default. SANtricity does not have SSH controls - disabling SSH will resolve these findings

--> Unix Operating System Unsupported Version Detection

: finding will be resolved if they upgraded to the latest SANtricity version

---------------------------------------------------------------- 1--This KB states that SSH is not enabled/supported in SANtricity:

<https://kb.netapp.com/Advice_and_Troubleshooting/Data_Storage_Systems/E>-

Series\_Storage\_Array/Is\_SSH\_a\_supported\_management\_protocol\_for\_E-Series\_devices

Deprecated SSH Cryptographic Settings

SSH Server Public Key Too Small

2--Per an older hardening guide "Starting with SANtricity 11.60, NetApp only supports TLS 1.2.":

<https://www.netapp.com/media/19422-tr-4855.pdf> (page 13 )

Secure Sockets Layer/Transport Layer Security (SSL/TLS) Server supports Transport Layer Security (TLSv1.0)

Secure Sockets Layer/Transport Layer Security (SSL/TLS) Server Supports Transport Layer Security (TLSv1.1)

Secure Sockets Layer/Transport Layer Security (SSL/TLS) Use of Weak Cipher Rivest Cipher 4 (RC4/ARC4/ARCFOUR)

SSLv3.0/TLSv1.0 Protocol Weak CBC Mode Server Side Vulnerability (BEAST)

**3—These bellow vulnerabilities would be resolvable via configuration and the use of CA signed certs:**

**DOC:** [**https://www.netapp.com/media/17218-tr4813.pdf**](https://www.netapp.com/media/17218-tr4813.pdf) **(Page 9 onwards)**

**CA signed certificate( signed certificate) there are basically 3 steps only**

**Step 1: Complete CSRs for the controllers Step 2: Submit the CSR files Step 3: Import signed certificates for**

**controller Please check the page number 9 onwards. It says how to generate CSR files and submit CSR files to CA and Import**

**the CA certificate .Kindly check with security team and have the files installed.**

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**the CA certificate .Kindly check with security team and have the files installed.**

**SSL Certificate - Expired**

**SSL Certificate - Self-Signed Certificate**

**SSL Certificate - Server Public Key Too Small**

**SSL Certificate - Signature Verification Failed Vulnerability**

**SSL Certificate - Improper Usage Vulnerability**

**SSL Certificate - Invalid Maximum Validity Date Detected**

**SSL Certificate - Subject Common Name Does Not Match Server FQDN**

VOLUME INITIALIZATION

A volume is automatically initialized when it is first created. However, the Recovery Guru might advise

that you manually initialize a volume to recover from certain failure conditions. Use this option only

under the guidance of technical support.

Result:

System Manager performs the following actions:

Erases all data from the volumes that were initialized.

Clears the block indices, which causes unwritten blocks to be read as if they are zero-filled (the --volume

appears to be completely empty).

n

Select Home > View Operations in Progress to view the progress of the initialize operation that is

currently running for the selected volume. This operation can be lengthy and could affect system

performance.

n

FYI: Hence we don't recommend in changing the priority.

Shows the setting for modification priority, which only appears for volumes in a volume group.

The modification priority defines how much processing time is allocated for volume modification

operations relative to system performance. You can increase the volume modification priority, although

this might affect system performance.

Move the slider bars to select a priority level.

Modification priority rates The lowest priority rate benefits system performance, but the modification

operation takes longer. The highest priority rate benefits the modification operation, but system

performance might be compromised

How to convert the host protocol of

an E-Series storage system

between FC and iSCSI

From <[https://kb.netapp.com/Advice\_and\_Troubleshooting/Data\_Storage\_Software/ESeries\_SANtricity\_Software\_Suite/How\_to\_convert\_the\_host\_protocol\_of\_an\_E- Series\_storage\_system\_between\_FC\_and\_iSCSI](https://kb.netapp.com/Advice_and_Troubleshooting/Data_Storage_Software/E%02Series_SANtricity_Software_Suite/How_to_convert_the_host_protocol_of_an_E-%20Series_storage_system_between_FC_and_iSCSI)>

Maintaining E2800 Hardware <https://mysupport.netapp.com/ecm/ecm_download_file/ECMLP2589378>

(PAGE 159)

FEATURE PACK:

<https://docs.netapp.com/ess-11/topic/com.netapp.doc.ssm-sam-117/GUID-445A6718-B436-48B3-B7C9>-

A1502711ED85.html

<https://docs.netapp.com/us-en/e-series/maintenance-e2800/hpp-change-host-protocol-task.html#step-2-obtain>the-feature-pack

ISCSI TO FC -- 2008947881

Upon checking the logs, i could see customer is using the dual protocol SFP's (dual-protocol or unified SFPs.) & both are connected to

controller B, 0b & 0a ports

Snippet from the logs

SFP status: Optimal

Attached to: Host-side of controller B

Location: Host port 0b

Supported data rate(s): 16 Gbps, 10 Gbps, 8 Gbps, 4 Gbps

SFP status: Optimal

Attached to: Host-side of controller B

Location: Host port 0a

Supported data rate(s): 16 Gbps, 10 Gbps, 8 Gbps, 4 Gbps -You need to convert the protocol, before performing Zoning

- If you have dual-protocol SFPs, you can continue using them after you convert the protocol.

Please refer the below document and follow all steps

<https://docs.netapp.com/ess-11/topic/com.netapp.doc.e-2800-sysmaint/GUID-C2A2AAC4-A1B9-468F-8CE8-862D32917840.html>

From <<https://smartsolvecm.netapp.com/ui/#/case/2008947881>>

PROTOCOL conversion

Thursday, February 10, 2022 11:42 AM

Eseries Page 69

We went on a session and followed the doc ( <https://docs.netapp.com/us-en/e-series/maintenance-e2800/hpp>change-host-protocol-task.html ) to obtain the key however was unable to.

I shared the key file, and we were able to change the protocol successfully

Vol Expansion takes time

:

Traditional volume groups tend to take a lot more time to expand, and here is why. With traditional volumes

groups, volumes are written sequentially. So if you are expanding a volume that reside in the beginning of the

volume group (Offset 0), and there are other volumes in the volume group, the other volumes must be shifted to

different offsets before we can expand the first volume. Once those volumes are shifted up in offsets to

accommodate for the new capacity, they are trying to add to the first volume, then the first volume can be

expanded.

This is normal for E-Series when using a volume group. You can modify the priority of the operation in order to

speed it up, but system performance might be compromised.

The lowest priority rate benefits system performance, but the modification operation takes longer. The highest

priority rate benefits the modification operation

For your reference:

Decide whether to use a pool or a volume group:

[https://docs.netapp.com/ess-11/index.jsp?topic=%2Fcom.netapp.doc.ssm-sam-117%](https://docs.netapp.com/ess-11/index.jsp?topic=%2Fcom.netapp.doc.ssm-sam-117%25)

2FGUID-94CB6FD7-59ED-4839-AAB5-7E82B97B8505.html

Traditional volume groups tend to take a lot more time to expand, and here is why. With traditional volumes groups, volumes are written

sequentially. So if you are expanding a volume that reside in the beginning of the volume group (Offset 0), and there are other volumes in

the volume group, the other volumes must be shifted to different offsets before we can expand the first volume. Once those volumes are

shifted up in offsets to accommodate for the new capacity they are trying to add to the first volume, then the first volume can be

expanded."

Since the customer is using volume group its expected behavior and its as per the design, they can use disk pool to get the random reads

and it will be faster

There is a way for us to increase the background process to high but it won't be much though. There is no downtime do perform this, you

can try modify the priority to high, just bear in mind that this action will prioritize the background process over the I/O to the volume:

The lowest priority rate benefits system performance, but the modification operation takes longer. The highest priority rate benefits the

modification operation, but system performance might be compromised.

Shared steps and snapshot capacity reserve as per guidelines.

> <https://www.netapp.com/pdf.html?item=/media/17167-tr4747pdf.pdf> .

> [https://docs.netapp.com/ess-11/index.jsp?topic=%2Fcom.netapp.doc.ssm-sam-115%](https://docs.netapp.com/ess-11/index.jsp?topic=%2Fcom.netapp.doc.ssm-sam-115%25) 2FGUID-12F509B5-1FF1-4E53-986A-87A28F36C6A6.html

FGUID-12F509B5-1FF1-4E53-986A-87A28F36C6A6.html . > <https://docs.netapp.com/ess-11/index.jsp?topic=%2Fcom.netapp.doc.ssm-sam-115%2FGUID-D9B526C5-058B-4035-8928>- FC43A7BCA6D6.html .

> [https://docs.netapp.com/ess-11/index.jsp?topic=%2Fcom.netapp.doc.ssm-sam-115%](https://docs.netapp.com/ess-11/index.jsp?topic=%2Fcom.netapp.doc.ssm-sam-115%25)

2FGUID-12F509B5-1FF1-4E53-986A-87A28F36C6A6.html .

> <https://docs.netapp.com/ess-11/index.jsp?topic=%2Fcom.netapp.doc.ssm-sam-115%2FGUID-D9B526C5-058B-4035-8928>- FC43A7BCA6D6.html . From <<https://smartsolvecm.netapp.com/ui/#/case/2009153383>>

As spoken, here is the documentation:

Information about SnapShots, how it works and space availability:

Snapshot volume reserved capacity

This reserved capacity requires space for indexing metadata and all data written to the Snapshot volume.

The minimum is 32MiB; the administrator should plan on this minimum, plus anticipated space needed for

writes to the Snapshot volume. All writes to the Snapshot volume go to the reserved capacity. The default

is 40% of the base volume capacity.

If the reserved capacity becomes full, the storage system raises a Needs Attention condition and further

host writes are rejected. The administrator can set an alert for when the reserved capacity reaches a

certain threshold; the default is 75%. SANtricity management software also provides a means to monitor

the reserved capacity by showing how much is available for use by host writes.

Snapshot group reserved capacity (repository)

The reserved capacity stores metadata related to copy-on-write operations and user data copied during

these operations. The metadata requires at most 0.02% of the base volume capacity for each Snapshot

image in the group. The Snapshot feature also reserves a small amount of space for rollback processing,

0.02% of base volume capacity. When choosing a size for the reserved capacity, the administrator needs

to take these metadata needs into account. The administrator must also estimate how much of the base

volume will change while there are Snapshot images in the Snapshot group. The default is 40% of base

volume capacity, and the minimum allowed capacity is 32MiB plus 0.02% of the base volume for rollback

processing.

• SANtricity Snapshot feature - Overview and deployment guide o

<https://www.netapp.com/pdf.html?item=/media/17167-tr4747pdf.pdf>

• Requirements and guidelines for snapshots o

<https://docs.netapp.com/ess-11/index.jsp?topic=%2Fcom.netapp.doc.ssm-sam-1152FGUID-12F509B5-1FF1-4E53-986A-87A28F36C6A6.html>

How-to documentation to complete the snapshot creation:

• Create snapshot volume o <https://docs.netapp.com/ess-11/index.jsp?topic=%2Fcom.netapp.doc.ssm-sam-115%2FGUID-D9B526C5-058B-4035-8928>- FC43A7BCA6D6.html

• SnapShots – manage and further information o <https://docs.netapp.com/ess-11/topic/com.netapp.doc.ssm-sam-115/GUID-F9047B32-E482-441A-BBD1-63DAE562B08E.html>

On this last link, do not forget to click on the drop down menus so you can see all available documentation as seen below:

SNAPSHOT

<https://library.netapp.com/ecmdocs/ECMP1635994/html/GUID-FB79BB68-B88D-4212>-

A401-9694296BECCA.html#:~:text=A%20Snapshot%20copy%20is%20a,copies%20automatically%20for%20each%

20volume. <https://mysupport.netapp.com/NOW/public/eseries/sam_archive1150/index.html#page/GUID-8538272A>-

B802-49D9-9EA2-96C82DAD26A2/GUID-0947EC47-B807-4206-BBBE-3B46505E4DA7.html

AD CONFIG

Directory services: <https://docs.netapp.com/us-en/e-series-santricity/um-certificates/access>- management-with-directory-services-unified.html

Please go through the VIDEO : <https://www.netapp.tv/player/26272/stream?assetType=movies>

-The user should be admin access to make the changes. -Users can have any role (admin, monitor,) depending on your requirements. -No ports need to be opened if it is old config. In case a new config opens the port given by LDAP / AD

team.

LDAP Port- 389

LDAPS Port – 336

Directory services:    <https://docs.netapp.com/us-en/e-series-santricity/um-certificates/access-management-with-directory-services-unified.html>

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LDAP Port-  389

LDAPS Port - 336

-->E-series shell passwords

https//kb.netapp.com/Advice\_and\_Troubleshooting/Data\_Storage\_Systems/E- Series\_Storage\_Array/What\_are\_the\_E-Series\_Controller\_Shell\_Passwords%3F

How to diagnose an E-Series offline controller (IN DETAIL)

https//kb.netapp.com/Advice\_and\_Troubleshooting/Data\_Storage\_Systems/E- Series\_Storage\_Array/How\_to\_diagnose\_an\_E-Series\_offline\_controller

OS-OL --> https//kb.netapp.com/Advice\_and\_Troubleshooting/Data\_Storage\_Software/E- Series\_SANtricity\_Software\_Suite/7-Segment\_display\_of\_E-Series\_Controller\_is\_flashing\_OS\_OL

What are the E-Series Controller Shell Passwords?

https//kb.netapp.com/Advice\_and\_Troubleshooting/Data\_Storage\_Systems/E- Series\_Storage\_Array/What\_are\_the\_E-Series\_Controller\_Shell\_Passwords%3F

How to log into an E-Series controller serially

https//kb.netapp.com/Advice\_and\_Troubleshooting/Data\_Storage\_Systems/E- Series\_Storage\_Array/How\_to\_log\_into\_an\_E-Series\_controller\_serially

\serial console speeds of 1200, 2400, 4800, 9600, 19200, 38400, 57600 and 115200 bits per second.|

MIGRATION :

<https://kb.netapp.com/Advice_and_Troubleshooting/Data_Storage_Systems/E>- Series\_Storage\_Array/How\_to\_migrate\_a\_volume\_group\_from\_one\_E- Series\_storage\_system\_to\_another

<https://mysupport.netapp.com/site/info/version-support> - EOVS

<https://www.netapp.com/media/19404-tr-4853.pdf>- Access Management for E-Series Storage Systems

<https://mysupport.netapp.com/NOW/public/eseries/sam_archive1150/index.html#page/GUID-8538272>

A-B802-49D9-9EA2-96C82DAD26A2/GUID-DD9D7B6A-0454-4B7A-BC8A-29F9531B6467.html ----Volume

capacity increase

<https://mysupport.netapp.com/ecm/ecm_download_file/ECMP1403720> - HIC replacement

established a session with controller B as well.

<https://docs.netapp.com/ess-11/index.jsp>

Software installation, configuration, and upgrade > Windows express configuration > Perform iSCSI- specific tasks

From <[https://netapp-my.sharepoint.com/personal/puspitas\_netapp\_com/Documents/Desktop/Netapp%20Documents%](https://netapp-my.sharepoint.com/personal/puspitas_netapp_com/Documents/Desktop/Netapp%20Documents%25)