

NetApp Certified Implementation Engineer - SAN Specialist - E-Series

Netapp NS0-516

Version Demo

Total Demo Questions: 9

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Topic Break Down

Topic	No. of Questions
Topic 1, Planning	25
Topic 2, Installation	8
Topic 3, Configuration	44
Topic 4, Testing and Troubleshooting	19
Total	96

QUESTION NO: 1

A customer is configuring an EF570 system on an internal network. Due to security concerns, the network does not have Internet access. The customer wants to regularly send standard support data to NetApp.

In this scenario, what should the customer do to accomplish this task?

- A.** Enable AutoSupport with a set interval and with the store locally option selected, manually move the data to a server with Internet access, and then send the data to NetApp.
- B.** Open a support ticket with NetApp to enable AutoSupport local functionality, manually move the data to a server with Internet access, and then send the data to NetApp.
- C.** Set up a script to initiate Collect Support Data on a set interval, manually move the data to a server with Internet access, and then send the data to NetApp.
- D.** Set up a script to initiate Collect Support Data, remove the extra log files, manually move the data to a server with Internet access, and then send the data to NetApp.

ANSWER: A

Explanation:

Enable AutoSupport with a set interval and with the store locally option selected, manually move the data to a server with Internet access, and then send the data to NetApp. This is the appropriate workflow for an EF570 storage array on an isolated network because AutoSupport can generate scheduled support bundles without requiring the array itself to reach the Internet. The store-locally delivery method retains the AutoSupport messages on the controller, allowing an administrator to retrieve the saved files and transfer them through an approved, secure process to a connected host. From that host, the support data can be submitted to NetApp for analysis and ongoing support monitoring. Configuring an interval ensures that collection occurs regularly rather than relying on an administrator to initiate each collection manually. AutoSupport is specifically designed to gather standard configuration, event, performance, and diagnostic information needed by NetApp Support, while local storage accommodates environments where direct outbound network connectivity is prohibited. NetApp documents AutoSupport delivery configuration, including local storage, in the SANtricity System Manager support documentation: [Configure AutoSupport delivery methods](#). Additional details about support data collection and AutoSupport are available in the [SANtricity support overview](#).

QUESTION NO: 2

Which command on a NetApp storage controller will display the average latency time on a per LUN basis every five seconds?

- A.** `sysstat -i 5`
- B.** `sysstat -f 5`
- C.** `fcv stats -i 5`
- D.** `lun stats -i 5`

ANSWER: D

Explanation:

`lun stats -i 5` is the appropriate command for this legacy Data ONTAP command syntax. The `lun stats` command collects and displays performance counters for individual LUNs, including latency-related measurements, enabling an administrator to assess workload behavior at the LUN level rather than only at an aggregate controller or protocol level. The `-i` parameter specifies the statistics sampling interval, and the value `5` causes the command to refresh and report the statistics every five seconds. This makes it useful when troubleshooting a short-lived SAN performance condition or observing changes in LUN response time while an application workload is active. The question uses the traditional Data ONTAP CLI form; current clustered ONTAP releases expose comparable LUN performance information through the `lun statistics show` command family and performance monitoring tools. NetApp's current CLI documentation provides the LUN statistics command reference at [ONTAP lun statistics show documentation](#), and its SAN administration documentation

describes the operational context for managing LUN-based SAN workloads at [NetApp ONTAP SAN administration documentation](#).

QUESTION NO: 3

In which two locations would you find the WWPNs for a Windows host? (Choose two.)

- A. FC switch
- B. host's BIOS
- C. Windows Device Manager
- D. HBA vendor's utility

ANSWER: A D

Explanation:

FC switch and **HBA vendor's utility** are valid locations for identifying a Windows host's Fibre Channel World Wide Port Names (WWPNs). A Fibre Channel switch learns the identities of attached initiator ports during fabric login and displays them in its name-server, login, or connected-device information. This makes the switch a useful fabric-level source for correlating a physical server connection with the host HBA port's WWPN. Administrators commonly use this information when zoning initiators to storage target ports.

The HBA vendor's management utility is also an authoritative host-side source because it queries the installed Fibre Channel adapter and reports each port's permanent hardware identity, including its WWPN. For example, utilities supplied by HBA vendors such as Broadcom/Emulex or Marvell/QLogic expose adapter-port details needed when configuring SAN connectivity. NetApp SAN host-configuration guidance uses initiator WWPNs to define host connections and configure appropriate zoning and host mappings. Confirming the same WWPN from both the HBA utility and the FC switch is a sound operational practice because it validates both the server adapter identity and its successful login to the fabric. See NetApp's [host-port WWN identification guidance](#) and Broadcom's [Emulex HBA Manager documentation](#).

QUESTION NO: 4

Click the Exhibit button.

E2812 and E2824 controller shelf and EF280 flash array:

Weight

Unit	Weight		
	Maximum*	Empty**	Shipping***
E2812 controller shelf, with twelve 3.5 in. (8.89 cm) SAS-3 drives each with 6 TB capacity	63.9 lb (29.0 kg)	17.08 (7.75 kg)	80 lb (36.2 kg)
E2824 controller shelf and EF280 flash array, with twenty-four 2.5 in. (6.35) SAS-3 drives each with 900 GB capacity	60.5 lb (27.4 kg)	17.4 lb (7.89 kg)	91 lb (41.2 kg)
* Maximum weight indicates a controller shelf, fully-loaded with the heaviest drives and all other components installed. Because drive weights can vary greatly, this value can vary, depending on the drives installed. Refer to the next table for weight ranges by drive type. ** Empty weight indicates a controller shelf with the controller canister, the power fan-canister, and the drives removed. *** Shipping weight indicates the maximum weight of the controller shelf and all shipping material.			

Component	Weight
Controller canister	5.47 lb (2.48 kg)
Power-fan canister	5.2 lb (2.35 kg)
2.5 in. SAS drive	0.6 lb (0.27 kg)
3.5 in. SAS drive	2.09 lb (0.95 kg)
2.5 in. SSD (solid-state disk)	1.33 lb (0.6 kg)

A customer has a raised floor with a weight limit of 700 lb. per floor tile. The customer's data cabinet weighs 90 lb. and covers a single floor tile.

Referring to the exhibit, what is the maximum number of E2824 shelves possible to be installed?

- A. 22
- B. 10
- C. 6
- D. 14

ANSWER: B

Explanation:

10 is the maximum number of E2824 shelves. The floor tile can support 700 lb., and the cabinet itself consumes 90 lb. of that allowance, leaving 610 lb. available for installed storage shelves. As shown in the exhibit, an E2824 shelf has an installed weight of approximately 60 lb. Dividing the remaining allowable load by the shelf weight gives $610 \div 60 = 10.16$. Because a partial shelf cannot be installed and the floor loading limit must not be exceeded, the result must be rounded down to 10 shelves. Ten shelves weigh 600 lb.; together with the 90-lb. cabinet, the total is 690 lb., which remains within the 700-lb. floor-tile rating. This calculation addresses the physical raised-floor load limit in addition to any rack-space considerations. NetApp hardware installation documentation identifies the E2824 as a 2U, 28-drive E-Series shelf and provides the physical specifications used in deployment planning. See the [NetApp E-Series hardware deployment documentation](#) and the [NetApp E2800 and E5700 hardware installation guide](#).

QUESTION NO: 5

A company implemented Automatic Load Balancing (ALB). When the controller workloads are monitored, it becomes obvious that there is an imbalance and that ALB is not working correctly.

In this scenario, what are two causes of the problem? (Choose two.)

- A. The company implemented a load balancing min-min algorithm that does not support ALB
- B. The company implemented an adaptive load balancing agent that does not support ALB
- C. The company implemented a host multipath driver that does not support ALB
- D. The company implemented a host type that does not support ALB

ANSWER: C D

Explanation:

Automatic Load Balancing depends on compatible host-side connectivity and a supported storage-array host configuration. The company implemented a host multipath driver that does not support ALB is a valid cause because the multipath driver must be able to receive and act on the array's preferred-path and volume-ownership changes. Without that support, host I/O can remain directed through paths that do not reflect the controller workload decisions made by the array, so controller utilization can remain uneven.

The company implemented a host type that does not support ALB is also a valid cause. In SANtricity, the configured host type controls the host-interface behavior and interoperability settings used by the storage array. Automatic Load Balancing is available only for supported host types and supported multipathing environments. Therefore, correct operation requires both a compatible host type on the E-Series system and a compatible multipath driver on every connected host. NetApp documents that ALB automatically shifts workload between controllers in response to changing demand, but that its operation depends on supported host connectivity software and configuration. See [NetApp: What is Automatic Load Balancing?](#) and [NetApp: What are host types?](#).

QUESTION NO: 6

To enable one-way authentication in a new iSCSI Linux implementation, which three modifications should you make in the `/etc/iscsi/iscsid.conf` file on the Linux host? (Choose three.)

- A. the target username and password
- B. the initiator username and password
- C. CHAP
- D. sendtargets discovery
- E. iSCSI

ANSWER: A C D

Explanation:

One-way iSCSI authentication uses Challenge Handshake Authentication Protocol (CHAP) to let the storage target authenticate the Linux initiator. The Linux host therefore needs a CHAP authentication method configured, together with the target username and password credentials that the initiator presents when establishing the discovery or iSCSI session. In `/etc/iscsi/iscsid.conf`, these values are configured under the SendTargets discovery authentication settings: the authentication method is set to CHAP, and the corresponding username and secret are supplied. SendTargets discovery is relevant because the initiator uses it to query the target for its available iSCSI portals and targets; its authentication parameters must be configured when discovery itself requires CHAP credentials. This enables the host to authenticate successfully during target discovery and subsequent session establishment. The storage system must be configured with matching CHAP credentials for the host initiator. NetApp documents the configuration and use of iSCSI authentication for E-

Series systems at [Configure iSCSI authentication](#). Red Hat also describes the initiator-side CHAP settings used by the open-iscsi service at [iSCSI CHAP authentication](#).

QUESTION NO: 7

Click the Exhibit button.

Supported Adapter Cards – E2812 Duplex 16Gb 10GbE Base-T 11.50 SANtricity OS							
Adapters							
Priority	Category	Bus Type	Mktg Part No	Images	LED	Mfg Part No	Description
1	Block Access	PCIe2	X-56023-00-0E-C		View		HIC.E2800.10Gb Base-T.2-ports, -C
2	Block Access	PCIe2	X 56026 00 0E C		View		HIC.E2800.12Gb SAS.2-ports, -C
3	Block Access	PCIe2	X-56027-00-0E-C		View		HIC.E2800.12Gb SAS.4-ports, -C

You ordered a NetApp E2812 Duplex 16GB 10 GbE Base-T system.

Referring to the exhibit, what is the maximum number of 10GbE Base-T ports available to be used?

- A. 8
- B. 4
- C. 6
- D. 12

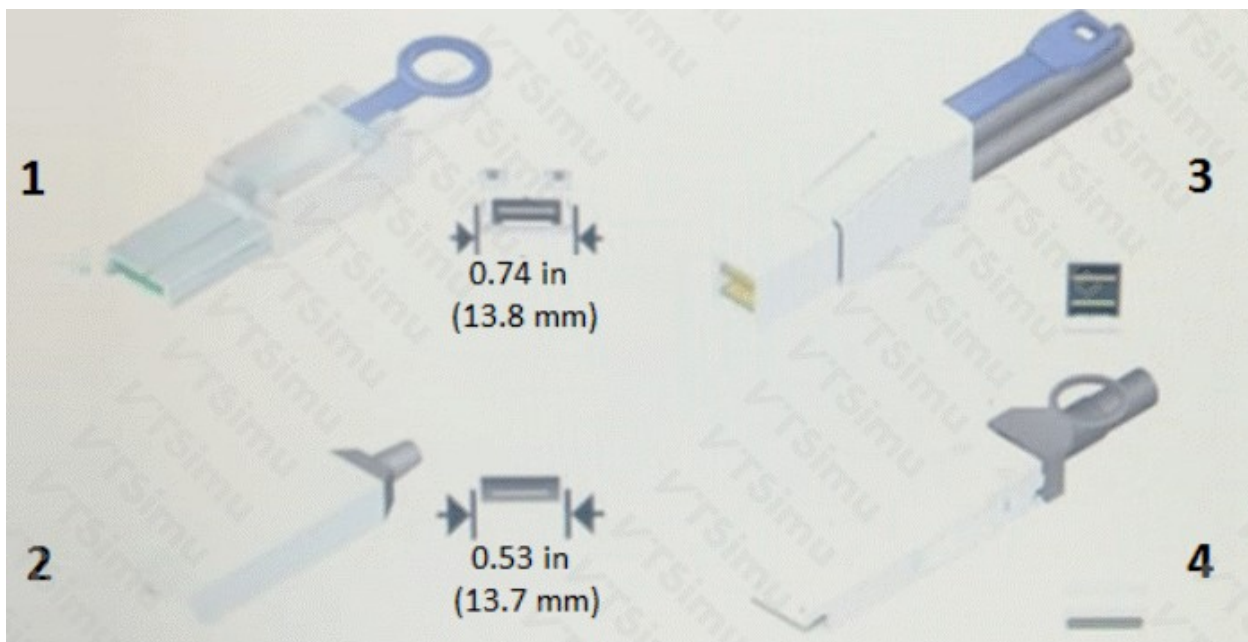
ANSWER: A

Explanation:

8 is correct. A duplex E2812 configuration contains two E2800 controllers for controller redundancy and multipath host connectivity. For the 10GbE Base-T iSCSI host-interface configuration, each controller provides four 10GBASE-T host ports. Because both controllers are installed in a duplex system, the array provides four ports on one controller plus four ports on the peer controller, for a maximum of eight usable 10GbE Base-T host ports. These ports are host-interface ports, distinct from the Ethernet management connections used to administer the storage array. In a production SAN design, hosts can be cabled to ports on both controllers so that I/O remains available through an alternate controller path if one controller or one path becomes unavailable. NetApp's E-Series hardware documentation describes the controller and host-interface concepts, while the E2800 product documentation identifies supported host connectivity and cabling considerations. See the [NetApp E-Series hardware concepts documentation](#) and the [NetApp E2800 hardware installation documentation](#).

QUESTION NO: 8

Click the Exhibit button.



Referring to the exhibit, which SAS connector is supported on the NetApp E2800 E-Series family?

- A. 1
- B. 4
- C. 2
- D. 3

ANSWER: D

Explanation:

3 is correct because it represents the external mini-SAS HD connector, formally identified as SFF-8644. NetApp E2800 E-Series systems use 12 Gb/s SAS connectivity for attaching supported expansion drive shelves. The SAS expansion ports on the E2800 controller use the compact, high-density external mini-SAS HD physical interface rather than earlier, larger SAS connector styles. This connector is designed for externally cabled SAS expansion paths and is used with supported SAS cables to create the redundant shelf connections required by the E-Series hardware configuration. Correctly identifying the mini-SAS HD/SFF-8644 connector is important when selecting expansion cabling and when validating a proposed E2800 storage configuration, because the cable connector must match the controller's SAS expansion port and the corresponding shelf port. NetApp's E-Series hardware installation documentation describes the SAS cabling and drive-shelf expansion procedures for E2800 systems, while the E-Series documentation library provides the applicable installation and hardware-reference materials. See the [NetApp E2800/E5700 hardware installation documentation](#) and the [NetApp E-Series documentation library](#).

QUESTION NO: 9

You are preparing an E-Series storage array for a SANtricity OS controller firmware upgrade.

Which two actions should be completed before starting the upgrade? (Choose two.)

- A. Run the pre-upgrade health check
- B. Back up the storage-array configuration database
- C. Delete all volume mappings
- D. Disable both controllers
- E. Erase the event log

ANSWER: A B

Explanation:

run the pre-upgrade health check and **back up the storage-array configuration database** are correct. The pre-upgrade health check identifies conditions that can prevent a successful controller upgrade, such as degraded components, drive recovery activity, or other unresolved faults. The configuration database backup preserves the array configuration information and provides a recovery reference if it is needed.

The administrator should resolve all reported critical conditions before initiating the upgrade and follow the supported upgrade path for the installed controller and SANtricity OS versions. NetApp documents the preparation and execution steps in [Upgrade SANtricity OS](#) and the configuration-backup procedure in [Back up the storage array configuration](#).