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**Exam** : **E20-598**

**Title** : Backup and Recovery - Avamar  
Specialist Exam for Storage  
Administrators

**Vendor** : EMC

**Version** : DEMO

**NO.1** A customer site requires five network connections into their Gen4 Avamar Data Store (ADS) Server utility node.

However, you observe that none of the Gen4 nodes in the server rack have more than four Ethernet connections on their rear panel.

What will you tell the customer?

- A. Order a Gen4 ADS utility node to replace one of the other nodes
- B. Gen4 nodes do not have more than four Ethernet connections
- C. Add additional Ethernet connections to the current Gen4 utility node
- D. Order a Gen4 ADS storage node to replace one of the other nodes

**Answer: A**

**NO.2** A storage administrator has successfully configured EMC Avamar to use Microsoft Windows Active Directory external authentication.

Which accounts and/or interfaces can be accessed by users set up to use this authentication?

- A. Avamar Administrator, Enterprise Manager, and Web Access
- B. MCUser, admin, and Enterprise Manager
- C. Avamar Administrator, root, and dpn
- D. MCUser, Web Access, and root

**Answer: A**

**NO.3** What is the minimum physical memory that needs to be allocated to an EMC Avamar Virtual Edition with 1.0 TB of licensable capacity?

- A. 2048 MB
- B. 3072 MB
- C. 4096 MB
- D. 16384 MB

**Answer: C**

**NO.4** Which EMC Avamar Management Console navigation screen can be used to check when the last checkpoint and checkpoint validation occurred?

- A. Server
- B. Activity
- C. Administration
- D. Policy

**Answer: A**

**NO.5** Based on EMC best practices, what is recommended when creating Avamar schedules?

- A. Use a single schedule where possible
- B. Use a different schedule for each group
- C. Use multiple schedules to ensure backup jobs do not overlap
- D. Use a separate schedule for each client

**Answer: A**

**NO.6** Which Avamar Gen4 nodes can be used in multi-node configurations?

- A. 1.3 TB, 3.9 TB
- B. 2.6 TB, 3.9 TB
- C. 2.6 TB, 7.8 TB

D. 3.9 TB, 7.8 TB

**Answer:** D

**NO.7** For each file that is backed up in an EMC Avamar system, how many total bytes are added to the file cache?

A. 20

B. 24

C. 40

D. 44

**Answer:** D

Explanation:

The most important thing to do on a client with so many files is to make sure that the file cache is sized appropriately. The file cache is responsible for the vast majority (>90%) of the performance of the vamar client. If there's a file cache miss, the client has to go and thrash your disk for a while chunking up a file that may already be on the server.

So how to tune the file cache size?

The file cache starts at 22MB in size and doubles in size each time it grows.

Each file on a client will use 44 bytes of space in the file cache (two SHA-1 hashes consuming 20 bytes each and 4 bytes of metadata). For 25 million files, the client will generate just over 1GB of cache data.

<http://jslabonte.blogspot.com/2013/08/avamar-and-large-dataset-with-multiples.html>

**NO.8** An EMC Avamar server is configured to use the default settings. What is the maximum allowable O/S capacity utilization after which HFS checks will not run?

A. 65%

B. 85%

C. 90%

D. 95%

**Answer:** C

Explanation:

Capacity Threshold Warnings:

80% of user capacity = warning, start planning for expansion or cleanup

95% user capacity is the healthcheck warning, new backups are suspended

100% user capacity makes the Avamar read-only, can still restore from server

85% of OS capacity = Garbage collection stops running, utilization increases rapidly

90% OS capacity = HFS checks stop running

96% OS capacity = no more checkpoints

**NO.9** What happens when a new storage node is deployed in the event of a storage node failure?

A. A spare storage node must be deployed manually

B. A spare storage node will be deployed automatically

C. The utility node is automatically promoted to a storage node

D. The utility node needs to be deployed manually

**Answer:** A

**NO.10** What is the maximum number of 1.0 TB EMC AVE servers that can be installed on a single ESX server?

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

**Answer:** B

**NO.11** Which processes are started automatically during an EMC Avamar Windows client installation?

- A. avagent and avscd only
- B. avtar and avagent only
- C. avtar, avagent, and avscd
- D. avscd and avtar only

**Answer:** A

**NO.12** During a backup, which EMC Avamar server process communicates with the avtar process on the client?

- A. EMS
- B. MCS
- C. GSAN
- D. avagent

**Answer:** C

Explanation:

Are next type of node is the Storage Node, which run a process called gsan. This service communicates with the avtar command on the individual backup clients. Avtar communicates with a storage nodes gsan process, then that storage node spreads the data across the available data nodes.

Avamar Node Types and Processes

There are several different types of Nodes within an Avamar Server. The Utility node is the identity of the Avamar Server and provides the bulk of the internal Avamar server processes such as:

Avamar Administrator (used to manage the Avamar Server from a gui), cron jobs, DNS, NTP, external authentication, web access, MCS and EMS.

MCS (Management Console Server) provides centralized management including scheduling of backups, restore of backups, monitoring and reporting.

EMS (Enterprise Manager Server) provides web based management for multiple Avamar Servers as well as monitoring and configuration for Avamar Replication.

Web Access provides access to documentation, backup plug-ins as well as remote File System restore access to end users.

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A Spare Node is an active node that is present in a multi-node RAIN (Redundant Array of Independent Nodes) grid. The interesting thing about the Spare Node is that it is NOT a hot spare.

There is a procedure in place that needs to be followed when a failed Storage Node occurs. In fact, the Avamar Server doesn't even care if the Spare Node is powered on, so if you are a

"Green" conscience company, feel free to leave the Spare Node powered down. EMC Best

Practice is to leave the Spare Node up and active though. Avamar Backups clients can be installed with 2 different types of client plug-ins: File System and Databases. The Avamar client uses 2 processes in the backup and restore process: Avtar and Avagent. The Avagent process listens for backup/restore

work orders from the MCS service on the Utility Node using port 28002 and executes the avtar command that handles the backup/restore processes and communicates with the gsan service on the storage nodes. This process is depicted in the included picture above.

Lastly, in a previous blog, I discussed the 2 different licensable options for Avamar and how the disks are comprised in each Storage Nodes type. These are depicted in the picture above as well as a breakdown of how the disks are structured.

<http://whughgriffin.wordpress.com/2009/06/03/avamar-system-overview/>

**NO.13** A multi-node EMC Avamar server is backing up clients worldwide. What must the storage administrator keep in mind to help ensure that backup schedules do not conflict with the Avamar server blackout window?

- A. Time basis for a backup schedule is the local time of the Avamar Administrator session
- B. Time basis for clients is the local time where the Avamar server utility node resides
- C. Time basis for the GSAN is the local time zone where the server resides
- D. Time basis for the maintenance schedules is GMT/UTC

**Answer:** A

**NO.14** Which type of EMC Avamar Gen4S node supports SAS drives?

- A. Accelerator node
- B. Business Edition node
- C. Media access node
- D. Storage node

**Answer:** A

**NO.15** An EMC Avamar customer, without premium support, has a requirement to be able to recover from a failed storage node. What is the minimum amount of nodes, of all types, that is required to support this functionality?

- A. 1
- B. 2
- C. 3
- D. 5

**Answer:** D