

Vendor: EMC

Exam Code: E20-335

**Exam Name:** Symmetrix Solutions Specialist Exam for Implementation Engineers

Version: Demo

#### **QUESTION 1**

Which command is used to set or reset HBA port flags on Symmetric arrays running Enable 7.0 Enginuity 5874?

- A. symcfq
- B. symmask
- C. symconfigure
- D. symaccess

Correct Answer: D Explanation

#### Explanation/Reference:

Explanation:

### Setting HBA Flags

 The following HBA flags can be set on a per initiator or initiator group basis

```
Common Serial Number
                             [C]
Disable Q Reset on UA
▶ Environ Set
                             [E]
> Volume Set Addressing
                             [V]
▶ Avoid Reset Broadcast
                             [ARB]
> AS400
                             [AS4]
▶ OpenVMS
                             [OVMS]
SCSI 3
                             [SC3]
▶ SPC2 Protocol Version
                             [SPC2]
▶ SCSI Support1
                             [OS2007]
```

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Module 4: Autoprovisioning Groups 2

Symmetrix VMAX arrays allow you to set the HBA port flags on a per initiator or initiator group basis. This feature allows specific host flags to be enabled and disabled on the director port. To set (or reset) the port flags, use the following form:

```
symaccess -sid <SymmID> -wwn <wwn> | -iscsi <iscsi>
   set hba_flags <on <flag,flag,flag...> <-enable |-disable> | off
[flag,flag,flag...]>
   list logins [-dirport <Dir>:<Port>] [-v]

symaccess -sid <SymmID> -name <GroupName> -type initiator
   set ig_flags <on <flag> <-enable |-disable> | off [flag]>
```

A flag cannot be set for the group if it conflicts with any initiator in the group. After a flag is set for a group, it cannot be changed on an initiator basis.

#### **QUESTION 2**

You have been asked to create a configuration for a single engine Symmetric V-Max array with 8 DAEs and 64 drivers. They would like to have the data devices with RAID 5(7+1) protection.

What would be the largest number of members you would recommend for a stripped metavolume?

- A. 4
- B. 16
- C. 8
- D. 32

Correct Answer: B Explanation

### Explanation/Reference:

#### QUESTION 3

What is required to ensure the integrity of data on the R2 volume during a SRDF fallback operation?

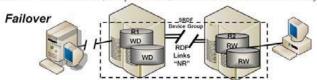
- A. Remove entries from the file system table
- B. Stop any applications that are accessing the R2 volume
- C. Disable journaling on the file system
- D. Suspend the RDF link

Correct Answer: B Explanation

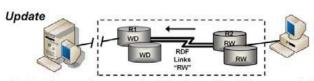
#### Explanation/Reference:

Explanation:

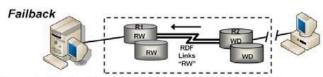
### SRDF - Failover, Update, Failback Summary



Production switches to the R2 side and invalids are maintained on the R2 array



Production continues on the R2 side and invalids are copied to the R1 array



Production switches back to the R1 side and additional invalids are copied to the R1 array



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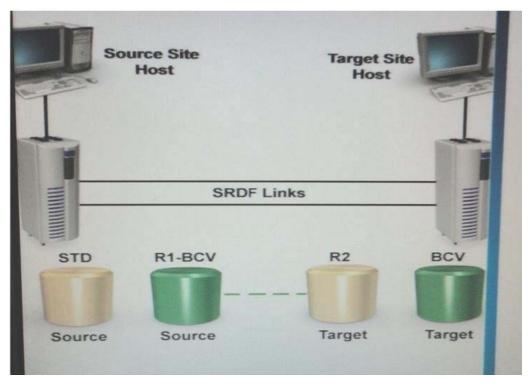
When the source site has been restored, or if maintenance is completed, one can return production to the source site. The symrdf failback command will set the R2s Write Disabled, the link Read Write and the R1s Read Write enabled. Merge of the device track tables between the source and target is done. The SRDF links are resumed. The accumulated invalid tracks are transferred to the source devices from the target devices. So all changes made to the data when in a failed over state will be preserved. As noted earlier, the Primary host can access the R1 devices and start production work as soon as the command completes. If a track that has not yet been sent over from the R2 is required on the R1, SRDF can preferentially read that track from across the links.

As the R2s will be set to Write Disabled, it is important to shut down the applications using the R2 devices, and perform the appropriate host dependent steps to unmount filesystem/deactivate volume groups. If applications still actively access R2s when they are being set to Write Disabled, the reaction of the host accessing R2s will be unpredictable. In a true disaster, the failover process may not give an opportunity for a graceful shutdown. But a failback event should always be planned and done gracefully.

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#### QUESTION 4

Refer to the exhibit



What is the correct state for the Standard and RI-BCV prior to issuing a symreplicate start command?

- A. Synchronized
- B. Suspended
- C. Split
- D. Write-Enable

Correct Answer: C Explanation

#### Explanation/Reference:

#### **QUESTION 5**

An SRDF failover has been executed during the testing phase of an implementation. What is the expected status of the R1 and R2 devices after performing SRDF failover operation?

- A. R1 and R2 Not Ready
- B. R1 Wnte Disabled; R2 Read/Wnte
- C. R1 Read/Wnte, R2 Read/Wnte
- D. R1 Read/Wnte. R2 Wnte Disabled

## Correct Answer: B Explanation

#### Explanation/Reference:

http://www.scribd.com/doc/29541661/Srdf-Operations-white-Paper

#### QUESTION 6

One of the requirements, during an Open Replicator implementation is that production application should not be implemented by open Replication session. An analysis of the control Symmetrix showed that FA ports are currently 70% utilized. How should pace and ceiling be configured?

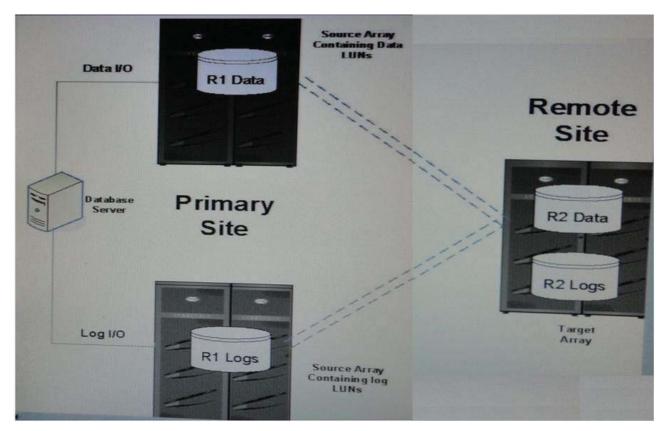
- B. Pace should be left at the default and Ceiling set to  $30\,$
- C. Pace should be left at the default and Ceiling set to 100
- D. Pace should be set to 9 and Ceiling should be set to  $70\,$

Correct Answer: B Explanation

#### Explanation/Reference:

#### QUESTION 7

Refer to the exhibit.



A database server has its logs stored on a volume on the log source Symmetrix V-Max array and its data stored on a volume on the data source Symmetrix V-Max array. Both source Symmetrix V-Max array frames replicate data to the target Symmetrix V-Max array at the Remote site.

There are two device groups that have been defined:

- $\cdot$  One group for the data volume on the Symmetrix containing the data LUNs
- · One group for the log volume on the Symmetrix containing the log LUNS

What happens if the SRDF inks between the Symmetrix contain the data LUNs and the target Symmetrix were to fail?

- A. The R2 data in the database remains consistent because Enginuity Consistency Assist (RDF- ECAJ technology would ensure data consistency).
- B. The data in the database becomes inconsistent at the Remote site.
- C. An SRDF failover would be initiated on all volumes and processing will automatically be switched over to the Remote site
- D. The R2 volumes in the Symmetrix V-Max containing the log LUNs would become write- disabled to the database server

Correct Answer: C Explanation

#### Explanation/Reference:

#### **QUESTION 8**

Where is the volume Logix Database maintained starting with DMX-3?

- A. VCM gatekeeper
- B. Symmetrix logical Volume
- C. Symmetrix File System
- D. VCM database.

Correct Answer: C Explanation

### Explanation/Reference:

#### QUESTION 9

On the Symmetrix platform, which type of RAID protection ensures the best random write performance?

- A. RAID 1
- B. RAID S
- C. RAID 6
- D. RAID 5

Correct Answer: A Explanation

#### Explanation/Reference:

#### **QUESTION 10**

Open Replicator pull will be used to move data between a third party array and a Symmetrix V- Max array. What is recommended before starting the Open Replicator session?

- A. Ensure that the remote devices are Host read/write enabled
- B. Ensure that the control devices are Not Ready
- C. Ensure that the remote devices are Host inaccessible
- D. Ensure that the control devices are Write Disabled

Correct Answer: C Explanation

**Explanation/Reference:** Explanation:

## Mode Summary

Action	State of Control and Remote	Control Remote Ratio	Сору Туре	When Links Fail
Hot Push	Ctrl: Read/Write to Host Rem: No Host access during copy (NHDC)	1:1	All tracks copied; COFW for protected tracks	Session fails
Cold Push	Ctrl: Not Ready Rem: NHDC	1:n (n<= 16)	All tracks copied	Session stalls
Incremental Push	As above for hot/cold push	As above for hot/cold push	Changes since last activation; COFW if hot	As above for hot/cold push
Hot Pull	Ctrl: Read/Write to Host Rem: NHDC	1:1	All tracks copied; CopyOnAccess as needed	Session stalls
Cold Pull	Ctrl: Not Ready Rem: NHDC	1:1	All tracks copied	Session stalls

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#### **QUESTION 11**

In symmetric V-max series array running Enginuity 5874, which device is used as a pass-through device for Auto provisioning?

- A. VDEV
- B. VCM
- C. ACLX
- D. SFS

Correct Answer: C Explanation

#### Explanation/Reference:

#### **QUESTION 12**

Which file contains the parameter that can change the default behavior of SYMCLI operations, and there control actions?

- A. SYMCLI options File
- B. SYMAPI Options File
- C. SYMCLI Command File
- D. SYMAPI Command File

Correct Answer: B Explanation

#### Explanation/Reference:

How does Delta Set Extension help in an SRDF/A deployment?

- A. Reduces RPO
- B. Reduces the amount of required cache
- C. Improves response time
- D. Absorbs bursts of host writes

Correct Answer: D Explanation

#### Explanation/Reference:

### SRDF/A - Delta Set Extension

#### When Can DSE Help?

- SRDF/A DSE solves abnormal and temporary problems:
  - Unexpected host load
  - Link bandwidth issues
  - Temporary link loss (use with Transmit Idle)
- Increases resilience for SRDF/A
- DSE is not designed to solve any permanent and persistent problems:
  - Wrong configurations such as:
    - >> Unbalanced cache or unbalanced device protection types between the source and the target Symmetrix
    - >> Insufficient cache
    - >> Insufficient bandwidth
  - Host writes consistently exceeding SRDF link bandwidth
  - Prolonged link outages



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SRDF/A DSE should be used with the Transmit Idle feature. Thus, SRDF/A can ride through a temporary link loss. Once the DSE threshold is reached, data is paged out to the DSE Pools. When space in the DSE pool is also exhausted, SRDF/A session will be dropped and will become inactive.

#### **QUESTION 14**

What is recommended before creating a TimeFinder/Mirror replica?

- A. Ensure that the production application using the source devices is shut down
- B. Ensure that all writes from the production application using the source devices are paused!
- C. Ensure that the BCVs are not being actively accessed
- D. Set the BCVs to a Not Ready state

Correct Answer: C Explanation

#### Explanation/Reference:

http://www.scribd.com/doc/37352326/Emc-Study-2

Diagnostic messaging for the GNS daemon is written to which file?

- A. /7SYMAPI/emc/storgnsd .log0
- B. /SYMAPI/log/storgnsd.log0
- C. /SYMAPI/usr/storgnsd log0
- D. /SYMAPI/bin/storgnsd log0

Correct Answer: B Explanation

### Explanation/Reference:

Explanation:

### **GNS** Configuration

- Enabled/disabled on each host via SYMAPI\_USE\_GNS
- Client/Server mode
  - Client group operations are sent to server
  - Server may hand off operations to GNS for servicing
  - > SYMAPI GNS CS STALE DATA TIMEOUT option in the client's SYMAPI options file controls how frequently the client checks the server
- Logs in /SYMAPI/log/storgnsd.log0 and /storgnsd.log1



The Symmetrix environment should be configured to support Group Name Services (GNS). GNS use is optional and can be either enabled or disabled on each host via the SYMAPI options file setting SYMAPI\_USE\_GNS, which we mentioned earlier in the course when we talked about the various options file parameters. The server may have to be restarted for the options to take place.

In the case of client/server mode, the SYMAPI server acts as the GNS client, and the server's SYMAPI options file (SYMAPI\_USE\_GNS) determines whether GNS is enabled for the client. If GNS is enabled and the client is caching (SYMAPI\_CONN\_TYPE\_REMOTE\_CACHED), then the client checks periodically with the server to determine if the group definitions that it is caching need to be updated. The default is one second.

When a client needs group information, it validates its cached group definitions with the server if the time since the last check is longer than the default value or

whatever new value is set for this option.

Diagnostic messaging is written to storgnsd.log0 and storgnsd.log1 in the SYMAPI's log directory. SE Implementation

#### **QUESTION 16**

What is another possible scheme for RAID 6 for a Symmetric V-max besides 6+2?

- A. 7+2
- B. 14+2
- C. 3+2
- D. 8+2

#### Correct Answer: B Explanation

#### Explanation/Reference:

#### **QUESTION 17**

During the testing of an Open Respirator implementation the create operation failed.

One of the lines in the SYMAP1 log file has the following entry SANCOPY\_DEV\_TARGET\_TOO SMALL

Which circumstance could lead to such an error?

- A. Pull operation to a larger control device
- B. Push operation from a larger control device
- C. Push operation from smaller control device
- D. Pull operation to a smaller control device

Correct Answer: B Explanation

#### Explanation/Reference:

#### **QUESTION 18**

How do you examine the attribute of a Dynamic SRDF device?

- A. symrdf list
- B. symdev list
- C. symsfg discover
- D. symdev show

Correct Answer: B Explanation

#### Explanation/Reference:

#### **QUESTION 19**

Which of these protection types offers the best protection?

- A RAID 6
- B. RAID 5 (7+1)

C. RAID 1D. RAID 5 (3+1)

Correct Answer: A Explanation

Explanation/Reference:

Explanation:

### **Data Protection Options for Symmetrix**

Option	Characteristics	Protection	Performance	Cost
RAID 1	Write to two separate physical drives     Read from single drive     DMSP		Fastest	Low Cost
RAID 5	Parity based protection     Striped data and parity     3+1 and 7+1     Configurations	High	Fast Read Good Write	Lower Cost
RAID 6	<ul> <li>Two parity drives         <ul> <li>6 + 2 and 14 + 2</li> </ul> </li> <li>Data Availability is primary</li> <li>Performance is a secondary consideration</li> <li>New with Enginuity 5772</li> </ul>		Fast Read Fair write	Lower Cost
Unprotected	Not recommended			

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Module 1: Configuration and Device Masking Overview 13

RAID 5 is based on the industry standard algorithm and can be configured with three data and one parity, or seven data and one parity. While the latter will provide more capacity per \$, there is a greater performance impact when in degraded mode where a drive has failed and all surviving drives must be read in order to rebuild the missing data.

RAID 6 is focused on availability. With the new larger capacity disk drives, rebuild times may take multiple days increasing the exposure to a second disk failure.

Random read performance is similar across all protection types, assuming you are comparing the same number of drives. The major difference is write performance. With mirrored devices for every host write there are two writes on the backend. With RAID 5, each host write results in two reads and two writes. For RAID 6, each host write results in three reads and three writes. Other data protection schemes include remote replication using SRDF.

#### **QUESTION 20**

In a single hop SRDF/AR setup the options have been set as follows

Cycle time-300 Delay Time-200 Overflow: Next

The symreplicate session was started at time 0. The actual cycle was 450 seconds. How many seconds after the start of first cycle will the next cycle start?

A. 600

B. 450

C. 900

D. 650

Correct Answer: C Explanation

#### Explanation/Reference:

#### **QUESTION 21**

What is the advisable Meta structure in a Virtual Provisioning environment?

A. LUN

B. Striped

C. Concatenated

D Serial

Correct Answer: C Explanation

#### Explanation/Reference:

Explanation:

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