Number: C1000-021 Passing Score: 800 Time Limit: 120 min File Version: 1.0



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C1000-021





#### Exam A

#### **QUESTION 1**

A customer would like to reduce the amount of backup data being stored on its IBM Storwize V7000 storage. Which IBM Spectrum Protect feature should the technical specialist propose?

- A. Encryption
- B. Data deduplication
- C. Node replication
- D. Integration with hardware snapshots

Correct Answer: D Section: (none) Explanation

#### **Explanation/Reference:**

#### **QUESTION 2**

A technical specialist is conducting a disk technology briefing to position the IBM FlashSystem V9000 against flash drives in an IBM Storwize V7000. The customer asks, "Why is SSD latency greater than a flash module?" How should the technical specialist respond to the customer?

- A. Larger capacity SSDs use TLC technology which is slower than MLC
- B. The SSD is using a traditional drive style interface protocol, which can cause a performance overhead.
- C. SSDs use much slower internal SLC flash technology than the IBM FlashSystem, which uses eMLC/MLC.
- D. The cache memory in the IBM Storwize V7000 is less, which increases latency.

Correct Answer: A Section: (none) Explanation



#### **Explanation/Reference:**

#### **QUESTION 3**

A customer has two IBM Storwize V7000 I/O groups. As part of its business continuity plan, one unit is located within its primary site and the other at a disaster recovery site. The customer synchronously replicates between each IBM Storwize V7000.

What should the customer configure to provide fast non-disruptive failover in case of an outage?

- A. Transparent Cloud Tiering
- B. Stretched cluster
- C. HyperSwap
- D. Global Mirror

Correct Answer: C Section: (none) Explanation

Explanation/Reference: Reference: <u>https://en.wikipedia.org/wiki/IBM\_SAN\_Volume\_Controller</u>

#### **QUESTION 4**

A customer needs to significantly increase the performance of an existing IBM Storwize V7000 Gen1 based on 15k RPM SAS disks with minimal investment. What is the most effective way to achieve this?

- A. Add five percent of flash storage to the pool
- B. Acquire an IBM Storwize V7000F
- C. Add compression cards and enable RtC



D. Purchase Easy Tier

Correct Answer: A Section: (none) Explanation

#### **Explanation/Reference:**

Reference: https://www.google.com/url?sa=t&rct=i&g=&esrc=s&source=web&cd=1&ved=2ahUKEwjwm4\_svJjhAhXIzaQKHW\_pA3YQFjAAegQIBRAC&url=https%3A%2F%2Fwww.ibm.com%2Fdeveloperworks%2Fcommunity%2Ffiles% 2Fbasic%2Fanonymous%2Fapi%2Flibrary%2F33795c8c-583c-400a-9702-a99258c444ef%2Fdocument%2Fd34630de-48af-408d-86fb-5bfbe8d5ea3d%2Fmedia%2FSpectrum\_Virtualize\_Updates20170119V2%2520Webinar%25201-19-17.pdf&usg=AOvVaw14pirndj tB8B97b1UuRcG

#### **QUESTION 5**

A customer is evaluating an IBM Storwize V5010 solution and wants to know what additional software functions are available. Which additional feature on the IBM Storwize V5010 is a chargeable upgrade?

- A. FlashCopy
- B. Encryption
- C. Data Reduction Pools
- D. Compression

Correct Answer: B Section: (none) Explanation

#### **Explanation/Reference:**

Reference: http://www.redbooks.ibm.com/redpieces/pdfs/sg248162.pdf

#### **QUESTION 6**

A customer has multiple storage platforms including an EMC VNX and an IBM Storwize V7000. Which solution should the technical representative recommend to provide alerts and optimize volume placement for the storage platforms?



- A. IBM Virtual Storage Center
- B. IBM Spectrum Connect
- C. IBM Storage Reporter
- D. IBM Spectrum Virtualize
- Correct Answer: A Section: (none) Explanation

**Explanation/Reference:** 

#### **QUESTION 7**

A customer is evaluating an IBM Storwize V7000 for high performance storage for applications and the ability to run storage backups with the least impact on performance. Which solution meets the customer's requirements?

- A. Create volumes with volume mirroring between I/O Groups.
- B. Use IBM Spectrum Protect Snapshot to create a copy to another storage pool.
- C. Create volumes with volume mirroring to a virtualized external IBM Storwize V5010.
- D. Setup volumes from two IBM Storwize V7000 systems and use Metro Mirror.

Correct Answer: B Section: (none) Explanation

**Explanation/Reference:** Reference: https://www.ibm.com/downloads/cas/L1VYBZGR



### **QUESTION 8** Which resource informs a storage specialist if a TDA is mandatory or optional?

- A. Systems Assurance Product Review Guide
- B. TDA Discussion Guide
- C. IBM Trigger Criteria and Designated Product List
- D. IBM Pre-sale TDA Checklist

Correct Answer: C Section: (none) Explanation

#### **Explanation/Reference:**

#### **QUESTION 9**

A customer wants a self-service catalogue to provision storage in their environment. Which IBM solution provides for this requirement?

- A. IBM Spectrum Connect
- B. IBM Spectrum Control Advanced
- C. IBM Spectrum Virtualize
- D. IBM Storage Insights Pro
- Correct Answer: C Section: (none) Explanation

**Explanation/Reference:** 

CEplus

**QUESTION 10** Which IBM website provides the most current support matrix information for the IBM Storwize product line?

- A. IBM Infocenter
- B. IBM System Storage Interoperation Center
- C. IBM Sales Manual
- D. IBM Knowledge Center

Correct Answer: B Section: (none) Explanation

#### **Explanation/Reference:**

Reference: https://www-03.ibm.com/systems/support/storage/ssic/interoperability.wss

**QUESTION 11** Which tool is used to create a hardware and software bill of materials that can be used to order IBM Storwize products from IBM?

- A. IBM Sales Manual
- B. IBM System Planning Tool
- C. Capacity Magic
- D. e-config

Correct Answer: A Section: (none) Explanation



#### **Explanation/Reference:**

Reference: http://www-01.ibm.com/common/ssi/ShowDoc.wss?docURL=/common/ssi/rep\_sm/3/897/ENUS2833- h03/index.html&lang=en&request\_locale=en

#### **QUESTION 12**

A customer wants to remotely manage its IBM Storwize V7000. Which protocol for remote authentication of users is required?

A. Lightweight Extensible Authentication Protocol (LEAP) B. Lightweight Directory Access Protocol (LDAP) C. Challenge Handshake Authentication Protocol (CHAP)

D. Secure Socket Layer (SSL)

Correct Answer: B Section: (none) Explanation

#### **Explanation/Reference:**

Reference: https://www.ibm.com/support/knowledgecenter/ST3FR7 8.1.1/com.ibm.storwize.v7000.811.doc/svc configremoteauthIdap.html

#### **QUESTION 13**

A customer has IBM Spectrum Virtualize at the primary location and IBM Storwize V7000 at the DR location. The customer purchased IBM VSC for both locations and wants to set up Global Mirror. What has to be done to the IBM Storwize V7000 system to support this functionality?

- A. Put SVC nodes with IBM Spectrum Virtualize in front of the IBM Storwize V7000
- B. Purchase license for Remote Mirror.
- C. Change the system layer to Replication.
- D. Add 10 GbE adapters to the IBM Storwize V7000

#### Correct Answer: C

Section: (none) Explanation

# CEplus

#### **Explanation/Reference:**

Reference: https://www.academia.edu/27750217/IBM\_System\_Storage\_SAN\_Volume\_Controller\_and\_Storwize\_V7000\_Best\_Practices\_and\_Performance\_Guidelines

#### **QUESTION 14**

An IBM i customer had performance requirements and is considering flash-based storage using an IBM FlashSystem V9000. The customer plans to move all data to the IBM FlashSystem V9000 with native IBM i attachment. Which connection protocol is required for this environment?

A. InfiniBand B. iSCSI C. 10 Gb FCoE D. FC

Correct Answer: D Section: (none) Explanation

#### **Explanation/Reference:**

#### **QUESTION 15**

A customer has just learned about IBM Data Reduction Pools and Data Deduplication for the IBM Spectrum Virtualize Software for the IBM Storwize Family. How are these functions licensed?

- A. Both are billable features
- B. Both are included in the IBM Spectrum Virtualize Software for Storwize
- C. Both are licensed by TB and billed independently of each other



D. Both are licensed by the Storage drawer and can be part of the IBM Spectrum Virtualize Software bundling package

Correct Answer: B Section: (none) Explanation

#### **Explanation/Reference:**

#### **QUESTION 16**

The customer is using an IBM SVC to manage storage capacity and plans to add some flash capacity to resolve some application performance concerns caused by month-end reporting operations. These applications have acceptable performance for the rest of the month.

How should the customer automate the use of the flash capacity to manage these monthly workload peaks?

A. Use IBM Spectrum Control Tiered Storage Optimizer.

- B. Use Volume copy with preferred write.
- C. Use IBM Storage Insights Pro
- D. Use IBM Spectrum Virtualize Easy Tier.

Correct Answer: D Section: (none) Explanation

#### **Explanation/Reference:**

#### **QUESTION 17**

A customer has a single, non-IBM storage system with 100 drives of the same capacity. The storage administrators spend most of their time trying to eliminate hot spots. The customer is considering an IBM Storwize V5020 purchase with approximately the same number of drives.

Which IBM Storwize feature helps resolve these issues?



- A. A single storage pool
- B. Volume migration
- C. HyperSwap
- D. Auto-storage pool balancing

Correct Answer: B Section: (none) Explanation

**Explanation/Reference:** 

#### **QUESTION 18**

A customer is considering the purchase of an IBM Storwize V5030, but data space is a challenge. Which tool helps the customer to see how much data space can be saved when compared to the size of the current disk system?

- A. Capacity Magic
- B. Comprestimator
- C. Workload Estimator
- D. Hardware Sizing Calculator

Correct Answer: A Section: (none) Explanation

**Explanation/Reference:** 



QUESTION 19 Which tool can be used to quickly estimate the compression ratio for a SVC environment?

- A. Capacity Magic
- B. Disk Magic
- C. Comprestimator
- D. Data Reduction Estimator Tool

Correct Answer: C

Section: (none) Explanation

**Explanation/Reference:** Reference: http://www.redbooks.ibm.com/redpapers/pdfs/redp5031.pdf (27)

#### **QUESTION 20**

Which product should be included as part of an IBM Storwize Family solution for a customer who desires application-aware snapshots?

- A. IBM Spectrum Archive
- B. IBM Virtual Storage Center
- C. IBM Spectrum Control Base Edition
- D. IBM Storwize Family Advanced Copy Services

Correct Answer: B Section: (none) Explanation

**Explanation/Reference:** 

Reference: http://www.redbooks.ibm.com/redpapers/pdfs/redp5121.pdf

#### **QUESTION 21**

A company uses an IBM Storwize V7000 with a single storage pool and plans to expand its storage capacity. What collects usage statistics for all the volumes in the pool?

- A. Easy Tier
- B. Storage Tier Optimizer
- C. Capacity Magic
- D. Disk Magic

Correct Answer: A Section: (none) Explanation

**Explanation/Reference:** 

#### **QUESTION 22**

An online shopping website stores orders and large amounts of product data on a multi-tier IBM Storwize storage solution. All data is stored in a mixed pool including NL-SAS, enterprise, and flash storage. How can Easy Tier assist this organization with its data performance?

- A. Promote data directly form NL-SAS to flash storage.
- B. Promote data from enterprise to flash storage.
- C. Place new data directly on flash storage.
- D. Create image mode volumes on flash and enterprise storage.

Correct Answer: C Section: (none)





#### Explanation

Explanation/Reference:

#### **QUESTION 23**

A customer is looking for a storage solution that provides FC and SAS host attachment without the need for SAN switches. Which IBM disk system is appropriate to use?

- A. IBM Storwize V5020
- B. IBM FlashSystem V9000
- C. IBM Storwize V7000
- D. IBM Storwize V5030
- Correct Answer: C Section: (none) Explanation

Explanation/Reference:

**QUESTION 24** Which tool is used to calculate usable storage space for IBM Storwize disk subsystems?

- A. Storage Insights
- B. Disk Magic
- C. Visual Storage Intelligence
- D. Capacity Magic

Correct Answer: D Section: (none) Explanation

#### Explanation/Reference:

**QUESTION 25** What must be configured and installed to use VMware Virtual Volumes (VVols) with IBM Storwize solutions?

- A. IBM Spectrum Virtualize
- B. IBM Spectrum Access
- C. IBM Spectrum Connect
- D. IBM Spectrum Control Standard Edition

Correct Answer: A Section: (none) Explanation

#### Explanation/Reference:

Reference: http://www.redbooks.ibm.com/abstracts/sg248328.html?Open

**QUESTION 26** What is the minimum number of paths that an IBM Storwize node canister should have for each host according to best practices?

A. 8 B. 1 C. 2 D. 4 **Correct Answer:** B





#### Section: (none) Explanation

#### Explanation/Reference:

Reference: <a href="https://books.google.com.pk/books?id=N3rJAgAAQBAJ&pg=PA240&lpg=PA240&dq=at+least+4+paths+paths+IBM+Storwize+node+canister+should+have+for+each+host+according+to+best</a> +practices&source=bl&ots=iZob3xd Nr&sig=ACfU3U0QRXbJWxs1xv1c PZvEzgB3mTmwA&hl=en&sa=X&ved=2ahUKEwjr bKC1pjhAhXEjKQKHd3CAIIQ6AEwAnoECAoQAQ#v=onepage&q=at%20least%204%20paths%20paths%20IBM% 20Storwize%20node%20canister%20should%20have%20for%20each%20host%20according%20to%20best%20practices&f=false

#### **QUESTION 27**

A customer wants to do application testing in the disaster recovery site located ten kilometers away over fiber and wants to use IBM Spectrum Protect Snapshot to create the application-aware clones of the database volumes. Which two additional features are needed to create these clones? (Choose two.)

- A. Full System Replication Manager
- B. IBM Copy Services Manager
- C. Volume mirroring
- D. FlashCopy
- E. Remote Mirror

Correct Answer: DE Section: (none)

Explanation

#### Explanation/Reference:

Reference: http://www.redbooks.ibm.com/redpapers/pdfs/redp4873.pdf

#### **QUESTION 28**

A customer has outgrown its IBM System Storage DS3524 and asks for a recommendation on an IBM storage system that can virtualize and continue to use the existing storage system.

Which solution should the technical specialist recommend as the lowest entry cost?



Correct Answer: A Section: (none) Explanation

#### **Explanation/Reference:**

#### **QUESTION 29**

An IBM Storwize V7000 prospect has a rapidly growing SQL database and is interested in methods to maximize storage capacity efficiency. Which feature addresses this concern?

- A. Unmap
- B. Easy Tier
- C. Transparent cloud tiering
- D. Data Reduction Pool

Correct Answer: D Section: (none) Explanation

Explanation/Reference: Reference: <u>https://www.ibm.com/downloads/cas/L1VYBZGR</u>





#### **QUESTION 30**

An IBM Storwize V7000 customer plans on using the cloud as a target for its encrypted data snapshots. The customer wants to use snapshots as a source for restoring to multiple sites around the world with centralized, automated key management.

How should the technical specialist advise the customer?

- A. The customer should purchase IBM Spectrum Control Advanced.
- B. The customer should purchase IBM Spectrum Copy Data Management.
- C. The customer should purchase IBM SKLM.
- D. The customer should use the encryption license that comes with centralized key management.

Correct Answer: C Section: (none) Explanation

#### **Explanation/Reference:**

Reference: https://www.ibm.com/us-en/marketplace/ibm-security-key-lifecycle-manager

#### **QUESTION 31**

Which tool is used to provide a report for the customer showing the RAID configuration and drive count for IBM Storwize V7000?

- A. Capacity Magic
- B. Comprestimator
- C. Disk magic
- D. e-config

Correct Answer: C Section: (none) Explanation

**Explanation/Reference:** 

#### **QUESTION 32**

A customer has a requirement to encrypt all data. What should be configured with a new IBM Storwize V5020?

- A. Self-encrypting drives and SKLM
- B. Base license with USB keys
- C. Self-encrypting drives with USB keys
- D. Encryption license and USB keys

Correct Answer: B Section: (none) Explanation

#### Explanation/Reference:

Reference: https://www.ibm.com/developerworks/community/blogs/accelerate/resource/Spectrum Virtualize Encryption V1.pdf?lang=en

QUESTION 33 Which function produces the heat map file that is used as input to STAT?

- A. Easy Tier
- B. Storage Tier Optimizer
- C. Disk Magic
- D. Comprestimator

Correct Answer: A





#### Section: (none) Explanation

#### **Explanation/Reference:**

Reference: https://www-01.ibm.com/support/docview.wss?uid=tss1wp101852&aid=1

#### **QUESTION 34**

During the last 10 years, a company has refreshed its storage environment three times. This has caused extended outages. Which functions or attributes of the IBM Spectrum Virtualize address these concerns?

- A. Rebalancing extents across a storage pool
- B. HyperSwap using intra-cluster synchronous remote copy
- C. Cloud integration and stretched cluster
- D. External virtualization and non-disruptive data migration

Correct Answer: B Section: (none) Explanation

**Explanation/Reference:** 

#### **QUESTION 35**

A customer required software that provides recommendations for data placement in appropriate pools on the IBM Storwize V7000. Which IBM Spectrum Control feature enables this?

- A. Cognos
- B. Advanced analytics
- C. Performance Reports
- D. Easy Tier

Correct Answer: D

Section: (none) Explanation

#### Explanation/Reference:

Reference: <a href="https://www-356.ibm.com/partnerworld/wps/servlet/download/DownloadServlet?">https://www-356.ibm.com/partnerworld/wps/servlet/download/DownloadServlet?</a> id=JUhU1cUIAyeiPCA\$cnt&attachmentName=ibm\_system\_storage\_svc\_easy\_tier\_in\_7\_3.pdf&token=MTU1MzM2MTQ3NDU3Mg==&locale=en\_ALL\_ZZ

#### **QUESTION 36**

A customer is concerned about storage license compliance. Which IBM Spectrum Suite component should the customer use?

- A. IBM Storage Mobile Dashboard
- B. IBM Spectrum Control
- C. IBM Big Fix ComplianceD. IBM License Metric Tool

Correct Answer: D Section: (none) Explanation

Explanation/Reference:

Reference: https://www.ibm.com/us-en/marketplace/license-metric-tool

#### **QUESTION 37**

A customer is planning to implement IP-based replication. Each site has a two-node IBM Storwize V7000 cluster installed. What is the maximum number of Remote Copy Groups that can be supported using the current IBM Storwize V7000 configuration?





A. 4B. 8C. 6D. 2

Correct Answer: D Section: (none) Explanation

Explanation/Reference:

#### **QUESTION 38**

A customer has an Oracle RAC environment that requires high availability and disaster recovery in one solution. Which feature of IBM Spectrum Virtualize address these needs?

- A. Consistency groups
- B. HyperSwap
- C. Snapshot integration
- D. Transparent cloud tiering

Correct Answer: B Section: (none) Explanation

Explanation/Reference: Reference: <u>http://www.redbooks.ibm.com/abstracts/redp5459.html?Open</u>

**QUESTION 39** What is the architectural difference between virtual machines and containers?



- A. Containers abstract the underlying hardware.
- B. Virtual machines virtualize the operating system.
- C. Containers virtualize the operating system.
- D. Virtual machines are hardware independent.

Correct Answer: C Section: (none) Explanation

#### Explanation/Reference:

Reference: https://www.backblaze.com/blog/vm-vs-containers/

**QUESTION 40** A customer is installing a new IBM Storwize V7000 with 10 expansions in a single rack.

Which installation adheres to proper SAS cabling guidelines for cabling all the enclosures?



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Correct Answer: A Section: (none) Explanation

## CEplus

Explanation/Reference:

Reference: <u>https://www.ibm.com/support/knowledgecenter/en/ST3FR7 8.2.0/com.ibm.storwize.v7000.820.doc/tbrd sas cable.html</u> **QUESTION 41** A customer has requested a proposal for 350 TB of NL-SAS disk storage for its new backup system. The customer requires data availability in case of dual drive failure, fast rebuild times, and minimum capacity loss to protection overhead.

Which RAID configuration should the technical specialist recommend?

A. RAID 0

B. RAID 0+1

C. RAID 6

D. DRAID 6

Correct Answer: B Section: (none) Explanation

Explanation/Reference:

#### **QUESTION 42**

A company's legacy storage environment includes IBM DCS3700, IBM XIV, and EMC VNX 5500. The company would like to seamlessly scale capacity and manage existing storage. Cost is a consideration. Which IBM solution should the technical specialist recommend?

A. IBM Storwize V5010

- B. IBM FlashSystem V9000
- C. IBM FlashSystem A9000R
- D. IBM Storwize V7000

Correct Answer: D



Section: (none) Explanation

#### **Explanation/Reference:**

#### **QUESTION 43**

An IBM Storwize customer must update the encryption key on a regular basis. What is required to change the local master encryption key?

A. Type current key when prompted using the IBM Storwize GUI.

- B. Ensure USB flash drives containing current keys are installed.
- C. Reduce the number of encrypted arrays of zero.
- D. Allow IBM Storwize node canisters to be taken offline one at a time.

Correct Answer: B Section: (none) Explanation

Explanation/Reference:

#### **QUESTION 44**

A customer just purchased an IBM Storwize solution and needs to externally virtualize a Dell EqualLogic. Which connection protocol is required?

### A. FCoE B.

FCP C. iSCSI D. SAS Correct Answer: C Section: (none) Explanation



#### Explanation/Reference:

Reference: https://www.ibm.com/downloads/cas/ZDG6KO5O

#### **QUESTION 45**

A client requires a full disaster recovery solution be created between two data centers without direct fibre channel connection. Which feature should the technical specialist recommend to the customer?

- A. Native IP Replication
- B. vSAN
- C. HyperSwap
- D. Volume mirroring

Correct Answer: D Section: (none) Explanation

Explanation/Reference:

**QUESTION 46** Which IBM Storwize Family product offers 10 GB iSCSI connectivity as standard?



A. IBM Storwize V5020 B. IBM Storwize V7000 C. IBM Storwize V5010 D. IBM Storwize V5030

Correct Answer: D Section: (none) Explanation

**Explanation/Reference:** Reference: <u>https://www.ibm.com/us-en/marketplace/storage-consolidation/specifications</u>



