Huawei
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Huawei HCSA-Presales-Storage V4.0 Exam

Latest Version: 6.0

Question: 1

Compared with HDDs, SSDs have high I/O performance and low latency.

A. TRUE
B. FALSE

Answer: A

Explanation:
According to Huawei's technical documentation on storage media, Solid State Drives (SSDs) fundamentally differ from Hard Disk Drives (HDDs) in their physical construction and data access methods. HDDs rely on mechanical components, including rotating platters and moving read/write heads. This mechanical nature introduces "rotational latency" and "seek time," which inherently limit the number of Input/Output Operations Per Second (IOPS).
In contrast, Huawei's OceanStor SSDs utilize flash memory chips (NAND Flash) and a high-performance controller. Because there are no moving parts, the "seek time" is eliminated, allowing for nearinstantaneous
data access. This results in significantly higher random IOPS and much lower latency
(often measured in microseconds rather than milliseconds). Furthermore, Huawei's FlashLink® technology further optimizes the collaboration between the storage controller and the SSDs, ensuring that even as the drive fills up, the performance remains consistent and the latency remains low. Therefore, in any performance-oriented storage environment, SSDs are the preferred choice over traditional HDDs.

Question: 2

Which RAID level cannot provide data redundancy protection?

A. RAID 5
B. RAID 6
C. RAID 1
D. RAID 0

Answer: D

Explanation:
In the Huawei OceanStor RAID 2.0+ architecture, Redundant Array of Independent Disks (RAID) levels are used to balance performance, capacity, and reliability. RAID 0, also known as "striping," distributes data blocks across multiple physical disks to maximize I/O performance. By allowing multiple disks to be read or written simultaneously, it provides the highest throughput and capacity utilization (100%).

However, the defining characteristic of RAID 0 is the complete lack of redundancy. Unlike RAID 1 (Mirroring), RAID 5 (Parity), or RAID 6 (Dual Parity), RAID 0 does not store redundant information or parity bits. Huawei documentation explicitly states that if any single physical disk in a RAID 0 group fails, the entire RAID group becomes inaccessible, and all data within that group is lost. Therefore, RAID 0 is strictly recommended only for temporary data or scenarios where data loss is acceptable and maximum performance is the sole priority. For enterprise production environments, Huawei recommends RAID 5, RAID 6, or RAID-TP.

Question: 3

What are the main application scenarios for SAN storage? (Select all that apply)

A. Big data storage
B. VMware virtualization
C. Database
D. Mass file sharing

Answer: B, C

Explanation:
Storage Area Network (SAN) storage is designed to provide block-level data access to servers, appearing to the operating system as a locally attached hard drive. Huawei OceanStor SAN solutions (both FC-SAN and IP-SAN) are optimized for high-performance, low-latency applications.
Databases (Option C), such as Oracle, SQL Server, and DB2, are primary use cases for SAN storage because they require high IOPS and low latency for transactional processing. The block-level access allows the database management system to have granular control over data placement and caching.
VMware virtualization (Option B) is another core scenario. SANs provide the shared storage necessary for advanced features like VMotion, High Availability (HA), and Distributed Resource Scheduler (DRS). In these environments, multiple ESXi hosts connect to a centralized SAN to access VMFS (Virtual Machine File System) volumes. While Option A (Big Data) and Option D (File Sharing) often use Distributed Storage (OceanStor Pacific) or NAS, the high-concurrency, structured nature of Databases and Virtualization makes them the definitive scenarios for SAN.

Question: 4

RAID 0 is actually a mirroring technology.

A. TRUE
B. FALSE

Answer: B

Explanation:
This statement is false because RAID 0 and Mirroring (RAID 1) are fundamentally different concepts in

Huawei storage technology. As defined in the Huawei technical manual, RAID 0 is "Striping." It breaks data into chunks and spreads them across multiple disks to increase performance. It has no redundancy. "Mirroring" is the terminology specifically used for RAID 1. In a RAID 1 configuration, the system writes the exact same data to two separate physical disks simultaneously. This creates a 100% redundant copy (a mirror). If one disk fails, the other continues to provide data, ensuring zero downtime and no data loss. Huawei's RAID 2.0+ virtualization technology can implement striping and mirroring across different "chunks" or "extents" within a storage pool, but it maintains the technical distinction: RAID 0 is for performance through striping, while mirroring is for reliability through duplication. Therefore, characterizing RAID 0 as a mirroring technology is a technical inaccuracy.

Question: 5

Which statements are correct about NVMe over Fabrics (NVMe-oF) (RoCE v2)? (Select all that apply)

A. Traditional Ethernet can transmit NVMe-oF (RoCE v2) data packets without packet loss.
B. NVMe-oF (RoCE v2) significantly improves performance by using Remote Direct Memory Access (RDMA).
C. Lossless Ethernet can transmit NVMe-oF (RoCE v2) data packets.
D. The cost of NVMe-oF (RoCE v2) is generally higher than that of NVMe-oF (Fibre Channel).

Answer: B, C

Explanation:
NVMe over Fabrics (NVMe-oF) using the RoCE v2 (RDMA over Converged Ethernet) protocol is a highspeed communication technology supported by Huawei OceanStor Dorado systems. Option B is correct because RoCE v2 utilizes RDMA, which allows data to be transferred directly from the memory of one computer to another without involving the CPU of either system. This significantly reduces latency and CPU overhead compared to traditional iSCSI.
Option C is correct because RoCE v2 requires a "Lossless Ethernet" environment to function correctly. Traditional Ethernet (Option A) is a "best-effort" delivery system that allows for packet drops during congestion; however, RDMA protocols are highly sensitive to packet loss. To support RoCE v2, the network must implement Data Center Bridging (DCB) features like Priority Flow Control (PFC) and Enhanced Transmission Selection (ETS) to ensure a zero-packet-loss environment. Regarding cost (Option
D), RoCE v2 often leverages existing Ethernet infrastructure, making it generally more cost-effective than deploying a dedicated Fibre Channel (FC) fabric, which requires specialized HBAs and FC switches.

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