Number: D-PWF-DS-23
Passing Score: 800
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Exam Code: D-PWF-DS-23

Exam Name: Dell PowerFlex Design 2023

Exam A

QUESTION 1
Which component of the PowerFlex cluster provides server metrics such as telemetry thermal data and sets the server configuration profile?

A. PowerFlex Manager
B. CloudLink Center
C. VMware ESXi
D. iDRAC

Correct Answer: D
Section:
Explanation:
The Integrated Dell Remote Access Controller (iDRAC) is the component within a PowerFlex cluster that provides server metrics, including telemetry and thermal data, and allows for setting the server configuration profile. iDRAC is an embedded system management hardware and software solution that provides remote management capabilities, system health monitoring, and recovery capabilities. It is a key component for server lifecycle management within the PowerFlex infrastructure1.
iDRAC operates independently from the server's CPU and operating system, enabling administrators to monitor server health and manage systems even when the server is turned off or unresponsive. It provides a comprehensive set of server management features, including:
Monitoring server health and managing power usage.
Accessing logs for troubleshooting and recovery.
Updating firmware and drivers.
Configuring hardware settings and server profiles.
These capabilities are essential for maintaining the reliability and performance of PowerFlex clusters, making iDRAC a critical component for server metrics and configuration management.

QUESTION 2
A volume has a snapshot policy assigned and snapshot creation is failing What is the cause of this issue?

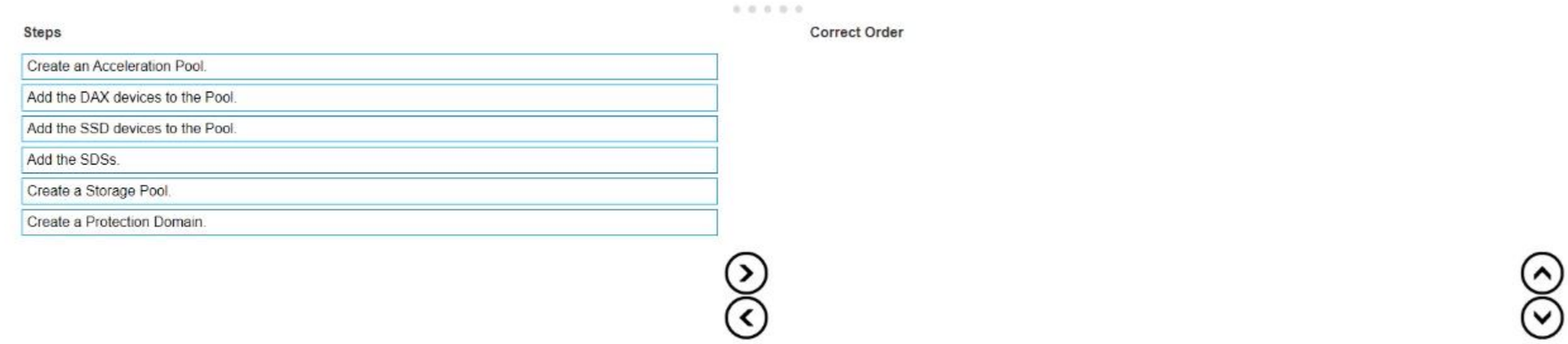
A. The requested snapshot is 126th in the vTree.
B. The snapshot name does not match the source volume.
C. The snapshot is the 61st created by the policy
D. The storage pool has 32 000 volumes plus snapshots and is at its limit

Correct Answer: C
Section:
Explanation:
The cause of the snapshot creation failure when a volume has a snapshot policy assigned is likely because the snapshot is the 61st created by the policy. According to Dell PowerFlex documentation, of the 126 user-available snapshots per volume, sixty (60) can be used for policy-based snapshot scheduling1. This means that if the policy attempts to create a snapshot beyond this limit, it will fail.
Here's a step-by-step explanation of the issue:
Snapshot Policy Limit: Each volume in a PowerFlex system can have a maximum of 126 user-available snapshots. For policy-based snapshot scheduling, the limit is 60 snapshots per volume1.
Policy-Based Snapshot Creation: When a snapshot policy is in place, it will automatically attempt to create snapshots based on the defined schedule and retention levels.
Failure Point: If the snapshot policy tries to create a snapshot and it is the 61st snapshot for that volume, the creation will fail because it exceeds the limit set for policy-based snapshots1.
Resolution: To resolve this issue, the administrator would need to adjust the snapshot policy to ensure that it does not exceed the limit of 60 snapshots. This may involve modifying the retention levels or the frequency of snapshot creation.
This explanation is based on the snapshot policy details provided in the Dell PowerFlex documentation, which outlines the restrictions and uses of snapshots within the PowerFlex storage system1.

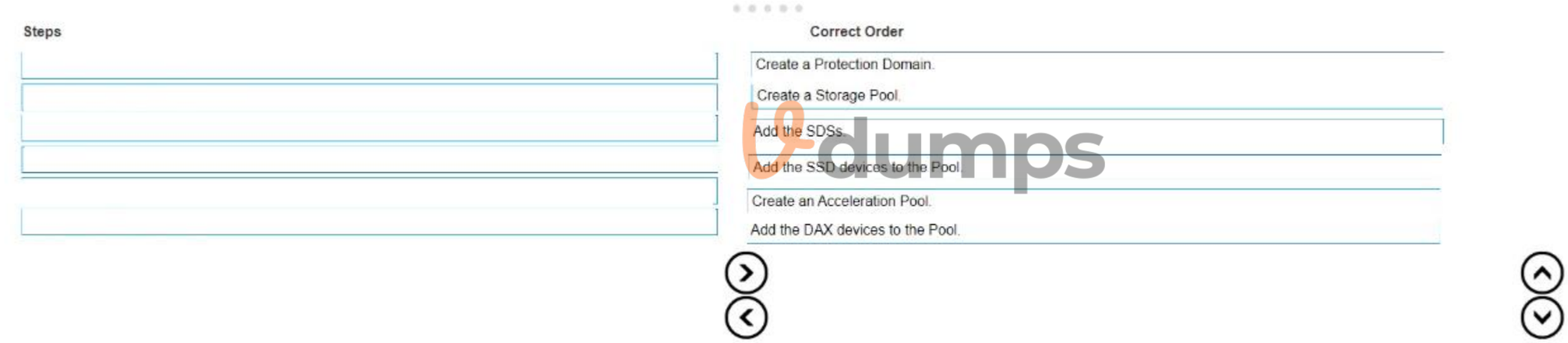
QUESTION 3

DRAG DROP
What is the correct sequence of steps to create an FG Storage Pool within a PowerFlex system?

Select and Place:



Correct Answer:



Section:
Explanation:
Create a Protection Domain.
Create a Storage Pool.
Add the SDSs.
Add the SSD devices to the Pool.
Create an Acceleration Pool.
Add the DAX devices to the Pool.

QUESTION 4
A user is attempting to write tiles to a Power Flex File share The share was created with default settings and contains approximately 15 000 files Ten days ago the number of files exceeded the soft limit quota but is still below the hard limit quota What happens if the user attempts to write a new file to the share location?

A. The file is not written as the maximum number of allowed files has been reached
B. The file is not written as the grace period has been exceeded.

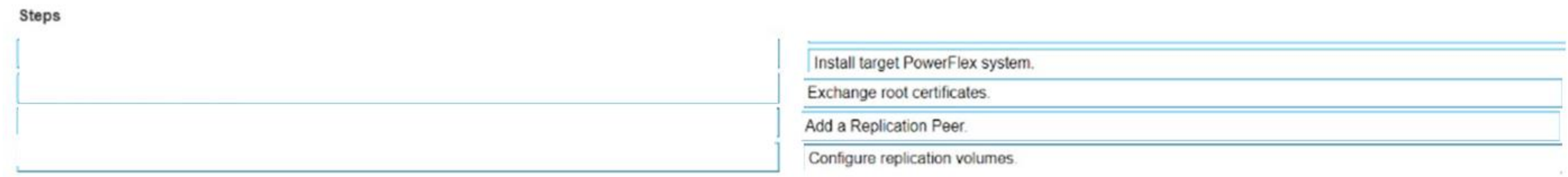
C. The file is written as the hard limit has not been reached.

Correct Answer: C
Section:
Explanation:
In PowerFlex File shares, when a soft limit quota is exceeded, it triggers a grace period during which users can still write data to the share. The grace period is a predefined time frame that allows users to either reduce the amount of stored data or to adjust the quota settings. As long as the hard limit quota has not been reached, users can continue to write files to the share, even if the soft limit has been exceeded and the grace period is in effect1.
The soft limit is essentially a warning threshold that alerts users that they are approaching the maximum allowed capacity, but it does not immediately prevent new writes. The hard limit, on the other hand, is a strict limit that, once reached, will prevent any further writes to the share until the stored data is reduced below the hard limit or the quota is increased.
Since the question states that the number of files is still below the hard limit quota, the user will be able to write a new file to the share location. Therefore, the correct answer is C. The file is written as the hard limit has not been reached.

QUESTION 5
DRAG DROP
Place the steps to set up remote replication on the Powerflex system in the correct order

Select and Place:

Correct Answer:



Section:
Explanation:

QUESTION 6
An administrator is creating a NAS server with a Standalone Windows server. Creation of trie NAS server fails What is the cause of the failure?

A. A Storage Pool lor NAS has not been created
B. The NAS server is using the same VLAN as block storage networks
C. DNS was not defined in the NAS server creation wizard
D. FSN has not been added to the cluster

Correct Answer: A
Section:
Explanation:
The creation of a NAS server requires a dedicated storage pool. If a storage pool specifically for NAS has not been created, the NAS server creation will fail. This is because the NAS server needs to allocate space from a storage pool to store the file system data. Without a designated storage pool, the NAS server cannot be configured properly1.
The other options, while important for the operation and integration of a NAS server, are not directly related to the creation process itself. For instance, using the same VLAN as block storage networks (Option B) may lead to network conflicts, but it would not prevent the creation of the NAS server. Similarly, not defining DNS in the NAS server creation wizard (Option C) could cause resolution issues later on, but it is not a prerequisite for the creation of the NAS server. Lastly, while adding FSN to the cluster (Option D) is a necessary step for enabling file system services, it is not the cause of the NAS server creation failure in this context.
Therefore, the correct answer is A. A Storage Pool for NAS has not been created, as it is a fundamental requirement for the NAS server creation process in a PowerFlex environment.

QUESTION 7
What is the default value of paths per volume when adding an NVMe host?

A. 8
B. 4
C. 2
D. 1

Correct Answer: A
Section:
Explanation:
The default value of paths per volume when adding an NVMe host to a PowerFlex system is 8. This setting is relevant for the configuration of multipathing, which is a method used to provide redundancy and increase availability for storage environments. When you add an NVMe host, the system allows up to 8 paths per volume to be configured by default. This is particularly important in VMware ESXi environments, where multipathing can be configured to handle failover and load balancing of storage traffic.
The reference for this information is found in the Dell PowerFlex specification sheet, which outlines the maximum paths in the multipathing driver per volume as 8 for ESXi 7.0u31. This document provides detailed specifications and configurations for the PowerFlex system, ensuring that the information is aligned with Dell's official documentation and design guidelines for PowerFlex systems.

QUESTION 8
Where must a customer go to generate a software troubleshooting bundle?

A. PowerFlex Manager Events and Alerts
B. PowerFlex Manager Serviceability
C. iDRAC Lrfecycle Controller
D. CloudLmk Center Console

Correct Answer: B
Section:
Explanation:
To generate a software troubleshooting bundle for PowerFlex, a customer must navigate to the PowerFlex Manager Serviceability. The steps to generate the bundle are as follows1:
Log in to PowerFlex Manager.
Choose 'Settings' from the menu.
Within the Settings menu, select 'Virtual Appliance Management'.
Choose 'Generate Troubleshooting Bundle'.
In the popup window, the customer has the option to either send the bundle to Configured Secure Remote Services (Secure Remote Services) or download it locally. If downloading locally, select the path for the downloads and enter the appropriate login information, then click 'Generate'.
This process is part of the serviceability features of PowerFlex Manager, which provides tools for system maintenance and troubleshooting. It is important to follow these steps carefully to ensure that the troubleshooting bundle is generated correctly and contains all the necessary information for diagnosing issues within the PowerFlex system.

QUESTION 9

Which two aspects must be in place before adding a Fault Set? (Select 2)

A. Protection Domain
B. Storage Pools
C. Acceleration Pool
D. Resource Group

Correct Answer: A, B
Section:
Explanation:
Before adding a Fault Set in PowerFlex, two critical aspects must be in place: a Protection Domain and Storage Pools.
Protection Domain: This is a logical grouping of storage resources that share the same protection policy and fault tolerance settings. It defines the boundaries of failure domains and is essential for ensuring data availability and resilience1.
Storage Pools: These are collections of storage media across multiple nodes within a Protection Domain. Storage Pools provide the physical storage where data is actually placed. They are necessary for the creation of volumes and for the distribution of data across the system1.
Fault Sets are used to group nodes that share a common risk of failure, such as being in the same rack or power circuit. When creating Fault Sets, it's important that they are defined within an existing Protection Domain and utilize the storage resources allocated within Storage Pools. This ensures that data remains available and protected even if a Fault Set fails, as the system can rebuild the data using the remaining Fault Sets and Storage Pools1.
The information provided here is based on the best practices and design principles outlined in Dell PowerFlex documentation, which details the requirements for setting up and configuring various components of the PowerFlex system, including Fault Sets1.

QUESTION 10
An administrator wants to track total usage on a PowerFlex File system but does not want to impose any restrictions on their users How can this be accomplished using quotas'?

A. Create a usei quota and set an indefinite grace period
B. Create a user quota and set both the soft and hard limits to zero
C. Create a tree quota and set an indefinite grace period
D. Create a tree quota and set both the soft and hard limits lo zero

Correct Answer: D
Section:
Explanation:
To track total usage on a PowerFlex File system without imposing any restrictions on users, an administrator can create a tree quota and set both the soft and hard limits to zero. This method allows the administrator to monitor usage without enforcing any quota limits, thus not restricting user behavior.
Here's how it can be accomplished:
Access the PowerFlex Management Console: Log in to the PowerFlex Management Console where you can manage quotas.
Navigate to the File System: Locate the file system for which you want to track usage.
Create a Tree Quota: Choose to create a new tree quota for the file system.
Set Limits to Zero: When setting up the quota, input zero for both the soft and hard limits. This effectively means there are no limits enforced on the users.
Apply the Quota: Save and apply the quota settings to the file system.
By setting both limits to zero, the administrator can use the quota system purely for monitoring purposes, without affecting user operations. The users will not encounter any quota warnings or limits, but the system will still track and report on the total usage, which the administrator can review.
The rationale behind using a tree quota rather than a user quota is that tree quotas are associated with a directory tree, allowing the tracking of usage across a broader scope, which is more suitable for monitoring overall file system usage.
This approach is consistent with best practices for administering PowerFlex systems as described in the Dell PowerFlex Administration Guide1, which provides detailed procedures for managing storage, including the configuration of quotas for monitoring purposes.

QUESTION 11
Which PowerFlex Manager activity can the System Admin role perform?

A. Lifecycle operations
B. Manage users
C. Update certificates

Correct Answer: A
Section:
Explanation:
The System Admin role in PowerFlex Manager is primarily responsible for performing lifecycle operations. This includes tasks such as deploying, configuring, and updating the PowerFlex system components. The role is designed to manage the operational aspects of the PowerFlex environment, ensuring that the system is running efficiently and is up to date1.
While managing users and updating certificates are important administrative tasks, they are typically associated with different roles within the PowerFlex Manager's user management system. For instance, managing users would fall under the purview of a User Admin role, which would handle the creation, modification, and deletion of user accounts. Updating certificates, on the other hand, would be more aligned with a Security Admin role, which would be responsible for maintaining the security aspects of the PowerFlex system, including certificate management1.
Therefore, the correct answer is A. Lifecycle operations, as it directly relates to the System Admin role's responsibilities within PowerFlex Manager.

QUESTION 12
A bank is creating a data center The storage solution must have integrated, fully configured hardware with a single management platform The solution must be supported end-to-end by Dell Which PowerFlex system meets these requirements?

A. PowerFlex custom node
B. PowerFlex rack
C. PowerFlex appliance

Correct Answer: B
Section:
Explanation:
The PowerFlex rack system meets the requirements of a bank creating a data center that needs integrated, fully configured hardware with a single management platform, all supported end-to-end by Dell.
Here's why the PowerFlex rack is the suitable choice:
Integrated and Fully Configured Hardware: The PowerFlex rack is a pre-configured solution that includes integrated hardware and software components. It is designed for easy deployment and management1.
Single Management Platform: PowerFlex rack systems come with a single management platform that simplifies operations and provides a unified view of the entire infrastructure1.
End-to-End Dell Support: PowerFlex rack solutions are fully supported by Dell, providing customers with a single point of contact for all support needs. This includes hardware, software, and the entire infrastructure stack2.
The PowerFlex rack is specifically designed to meet the needs of organizations like banks that require a robust, scalable, and easy-to-manage storage solution. It offers a turnkey experience with the assurance of comprehensive support from Dell, making it an ideal choice for the bank's data center requirements1.

QUESTION 13
An administrator is adding an NVMe device to an existing storage pool They provide the following details in the Add Storage Device to SDS dialog box
* Device Path /dev/disk/by-id'Dell_Express_Flash_NVMe_PM1725_V6TB_SFF_ _S2JPNA0J500141
* Device Name NVMe A. 1.6 TB
* Storage Pool SP-1
What is the result of this action'?

A. The device addition fails due to an invalid path
B. The device is named 'NVMeAt 6 TB' and added to the Storage Pool 'SP-1'.
C. The device name is truncated to 'NVMe' and added lo the Storage Pool 'SP-t'
D. The device addition tails due to invalid characters in the name

Correct Answer: A
Section:
Explanation:

When adding an NVMe device to an existing storage pool in PowerFlex, the details provided in the ''Add Storage Device to SDS'' dialog box must be accurate and follow the correct syntax. In the scenario provided, the device path contains an invalid character (an apostrophe) and an incorrect format, which would cause the device addition to fail.
Here's a breakdown of the process and where the error occurs:
Device Path: The device path should be a valid Linux device path, typically starting with/dev/disk/by-id/.The path provided contains an apostrophe (') which is not a valid character in Linux file paths and would result in an error1.
Device Name: The device name should be a simple identifier without spaces or special characters. The name provided, ''NVMe A.1.6 TB'', contains spaces and periods, which are not typical for device names and could potentially lead to issues, although the primary cause of failure is the invalid device path1.
Storage Pool: The storage pool name ''SP-1'' is a valid identifier, but it is contingent on the correct device path and name for the device to be added successfully.
The result of the action, given the invalid device path, would be that the device addition fails. It is crucial to ensure that all details entered in the dialog box adhere to the expected formats and do not contain invalid characters to avoid such failures.
This explanation is based on the standard practices for device path naming conventions in Linux systems and the configuration guidelines for PowerFlex systems as described in Dell's official documentation1. Correcting the device path by removing the invalid character and ensuring the proper format would resolve the issue and allow the device to be added to the storage pool successfully.

QUESTION 14
What maximum raw capacity can a user expect in a 1U Node while configuring a PowerFlex with an MG pool?

A. 38 4 TB
B. 307.2 TB
C. 76.8 TB
D. 153.6 TB

Correct Answer: A
Section:
Explanation:
The maximum raw capacity that can be expected in a 1U Node while configuring a PowerFlex system with an MG (Multi-Granularity) pool is 38.4 TB. This is based on the typical maximum raw storage capacity available for a 1U node configuration, which is designed to fit within the physical constraints of a 1U rack space while providing a balance of capacity and performance1.
The MG pool in PowerFlex is designed to optimize storage efficiency and performance, and the capacity of a 1U node would be aligned with the specifications that ensure the system's reliability and scalability. The other options listed provide capacities that are generally too high for a single 1U node within the PowerFlex architecture1.
Therefore, the correct answer is A. 38.4 TB, as it represents the realistic maximum raw capacity for a 1U Node in a PowerFlex system with an MG pool.

QUESTION 15
An administrator wants to migrate a volume from one storage pool to another storage pool What two volume migrations are possible ?(Select 2)

A. Prom MG storage pool volume, non-zero padded and Ihick provisioned lo FG storage pool volume zero padded: and thin provisioned
B. From MG storage pool volume, zero padded, and thick provisioned to FG storage pool volume, zero padded, and thin provisioned
C. From FG storage pool volume, zero padded, and thin provisioned to MG storage pool volume, non-zero padded and thick provisioned
D. From MG storage pool volume, non-zero padded, and thin provisioned to MG storage pool volume, zero padded, and thin provisioned

Correct Answer: B, D
Section:
Explanation:
Volume migration in PowerFlex allows for the movement of volumes between storage pools, which can be necessary for various operational reasons such as performance tuning, capacity expansion, or infrastructure upgrades. The possible migrations are:
Option B: Migrating from an MG (Medium Granularity) storage pool volume that is zero padded and thick provisioned to an FG (Fine Granularity) storage pool volume that is also zero padded and thin provisioned. This migration is possible and allows for a change in the provisioning and granularity of the volume, which can be beneficial for optimizing storage efficiency and performance1.
Option D: Migrating from an MG storage pool volume that is non-zero padded and thin provisioned to another MG storage pool volume that is zero padded and thin provisioned. This migration is within the same granularity type (MG) and involves changing the padding of the volume. It is a viable option when adjusting the volume configuration for specific storage optimization needs1.
These migrations are supported by PowerFlex's flexible architecture, which allows for non-disruptive volume movements between storage pools. The process involves using PowerFlex's management tools to initiate and monitor the migration, ensuring data integrity and system stability throughout the operation1.

The references for these migrations come from PowerFlex documentation and best practices, which detail the procedures and capabilities of the system regarding volume management and migration1. It is important to follow the recommended guidelines to ensure successful migrations that align with the system's design and operational principles.

QUESTION 16
Which policy determines the priority of reconstructing data after a failure?

A. Rebalance throttling
B. Rebuild throttling
C. Checksum Implementation
D. Checksum protection

Correct Answer: B
Section:
Explanation:
The policy that determines the priority of reconstructing data after a failure in a PowerFlex system is the Rebuild throttling policy. This policy is designed to manage the speed and resources allocated to the rebuild process, which is critical for restoring data redundancy and integrity after a failure occurs1.
The rebuild process in PowerFlex is a high-priority operation that ensures data is reconstructed across the remaining nodes and drives in the storage pool to maintain the desired levels of protection. The Rebuild throttling policy allows administrators to configure the impact of rebuild operations on the overall performance of the system, ensuring that while data reconstruction is prioritized, it does not significantly degrade the performance of production workloads1.
Rebalance throttling (Option A) is related to the process of redistributing data across the storage pool to maintain balance but is not directly concerned with the immediate reconstruction of data after a failure. Checksum Implementation (Option C) and Checksum Protection (Option D) are related to data integrity verification methods but do not determine the priority of data reconstruction.
Therefore, the correct answer is B. Rebuild throttling, as it is the policy that specifically governs the prioritization and management of data reconstruction activities following a failure in the PowerFlex system.

QUESTION 17
An administrator is migrating a vTree for a snapshot to a different storage pool What is a restriction few the migration''

A. There are volumes that are involved in the replication process.
B. The volume is a source volume of a snapshot policy between storage pools with the same data layout
C. The vTree contains an auto-created snapshot
D. The migration is between storage pools with a different data layout with multiple volumes in the vTree

Correct Answer: D
Section:
Explanation:
When migrating a vTree for a snapshot to a different storage pool in PowerFlex, one of the restrictions is that the migration cannot occur between storage pools with different data layouts if multiple volumes are involved in the vTree. This is because the data layout is fundamental to how data is organized and managed within the storage pool, and migrating multiple volumes with different data layouts could lead to inconsistencies and potential data integrity issues.
Here's a more detailed explanation:
Data Layout Compatibility: For a successful migration, the source and target storage pools should have compatible data layouts. Migrating vTrees that span multiple volumes between storage pools with different data layouts is restricted because it could disrupt the organization and accessibility of the data1.
Single Volume Migration: While it is possible to migrate a single volume vTree between storage pools with different data layouts, doing so with multiple volumes in the vTree is not supported due to the complexity and risk involved1.
This restriction ensures that the integrity of the data is maintained during the migration process and that the storage system continues to operate reliably. It is important to consult the PowerFlex documentation, such as the ''Configure and Customize Dell PowerFlex'' guide, for detailed information on supported migration scenarios and restrictions1.