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Dell EMC PowerVault ME4 Seriesand Citrix XenServer

Abstract

This document provides best practices for deploying Citrix XenServer with Dell EMC™ PowerVault™ ME4 Series storage.

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Dell EMC Best Practices

Revisions

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March 2020	Initial release

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Contents

1 Introduction

This document provides examples, tips, recommended settings, and other storage guidelines a system administrator can follow while configuring a Citrix® XenServer® environment to connect to Dell EMC™ PowerVault ME4 Series storage. Frequently asked questions regarding various Dell EMC PowerVault ME4 Series storage features are also addressed.

For additional installation and configuration information, Dell EMC recommends reviewing related XenServer and XenCenter documentation, which is publicly available on the Citrix Product Documentation website.

1.1 Scope

This paper covers the steps required to configure a Citrix XenServer environment to use Dell EMC PowerVault ME4 Series storage and includes best practices for iSCSI environments. This document is focused on XenServer 7.6 and its related features.

1.2 Audience

This paper is intended for storage administrators, network administrators, SAN system designers, storage consultants, or anyone tasked with configuring a SAN infrastructure for Dell EMC PowerVault ME4 Series storage when used to support a Citrix XenServer environment.

It is assumed that readers have received formal training or have advanced working knowledge of:

- Installation and configuration of Citrix XenServer
- Configuration and operation of Dell EMC PowerVault ME4 Series storage
- Guest operating systems in use (such as Microsoft® Windows Server® or Linux®)
- Citrix XenServer 7.6 Administrator's Guide

Note: The specific information contained within this document is based on the test environment built for the creation of this document. Actual configuration details may vary in any other environment.

1.3 Document conventions

Table 1 lists the formatting conventions used in this document.

Table 1   Document conventions

Format	Description	Example
`Command-line text`	User command-line input	`iscsiadm -m node --login`
`Italic command-line text`	Placeholder or variable	*`new_initiator_iqn`*

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1.4 Terminology

The following terms are used throughout this document:

> **Note**: Definitions identified with an asterisk (*) are provided by the *Citrix XenServer 7.6 Administrator's Guide*, which is available on the [Citrix Product Documentation](#) website.

Fault domain (FD): A set of hardware components that share a single point of failure. For controller-level redundancy, fault domains are created for Dell EMC PowerVault ME4 Series storage to maintain connectivity in the event of a controller failure. In a dual-switch topology, each switch acts as a fault domain with a separate subnet and VLAN. Failure of any component in an FD will not impact the other FD.

iSCSI offload engine (iSOE): Technology that can free processor cores and memory resources to increase I/O operations per second (IOPS) and reduce processor utilization.

iSCSI Qualified Names (IQNs): Unique iSCSI initiator (host server) or iSCSI target (storage) addresses are referred to as iSCSI Qualified Names (IQNs). IQNs are the identifiers used for iSCSI connectivity between host servers and iSCSI storage platforms.

Link aggregation group (LAG): A group of Ethernet switch ports configured to act as a single high-bandwidth connection to another switch. Unlike a stack, each individual switch must still be administered separately and function independently.

Local area network (LAN): A network carrying traditional IP-based client communications.

Logical unit (LUN): A number identifying a logical device, usually a volume that is presented by an iSCSI or Fibre Channel storage controller.

Multipath I/O (MPIO): A host-based software layer that manages multiple paths for load balancing and redundancy in a storage environment.

Native VLAN and default VLAN: The default VLAN for a packet that is not tagged with a specific VLAN or has a VLAN ID of 0 or 1. When a VLAN is not specifically configured, the switch default VLAN will be utilized as the native VLAN.

Network interface card (NIC): A network interface card or network interface controller is an expansion board inserted into the computer/server so that the computer/server can connect to a network. Most NICs are designed for a particular type of network (typically Ethernet) protocol (typically TCP/IP) and media.

Physical Block Devices (PBDs)*: Physical Block Devices represent the interface between a physical server and an attached Storage Repository (SR). PBDs are connector objects that allow a given SR to be mapped to a XenServer host. PBDs store the device configuration fields that are used to connect to and interact with a given storage target.

Storage area network (SAN): A Fibre Channel, Ethernet, or other specialized network infrastructure specifically designed to carry block-based traffic between one or more servers to one or more storage and storage inter-process communications systems.