

Simplify your Virtual Storage

ETERNUS AF and ETERNUS DX with VMware VVOL

More enterprises than ever are discovering the benefits of virtualization for their storage and servers. Yet managing virtualized storage arrays can place extra demand on IT professionals. ETERNUS AF series and the ETERNUS DX S4/S3 series storage running VMware vSphere Virtual Volumes (VVOL) make virtualized storage almost as easy to manage as a local hard drive.

Virtual Volumes (VVOL) by VMware vSphere are new, virtual disk containers enabling easier allocation of storage to applications in VMware environments. With predefined policies ETERNUS AF and ETERNUS DX capabilities are managed directly in VMware vCenter, providing benefits such as:

- Improved granularity level (per Virtual Machines (VM) or VVOL instead of per physical volume),
- Freeing the storage administrator from virtualization tasks.

VVOL policies allow allocating performance, capacity, and availability levels for each application, with the appropriate virtual storage identified and assigned automatically. The usual operational dependencies between vSphere and storage administrators are eliminated. Storage provisioning is faster and change management significantly easier. ETERNUS AF and ETERNUS DX with support for VMware vSphere Virtual Volumes (VVOL)

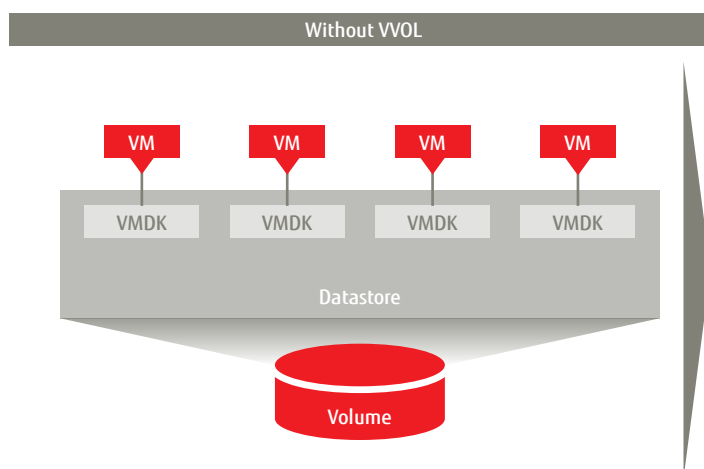
combines ETERNUS storage capabilities, performance, and reliability with the extra speed and simplicity of handling the new VVOL storage landscape.

What is VVOL?

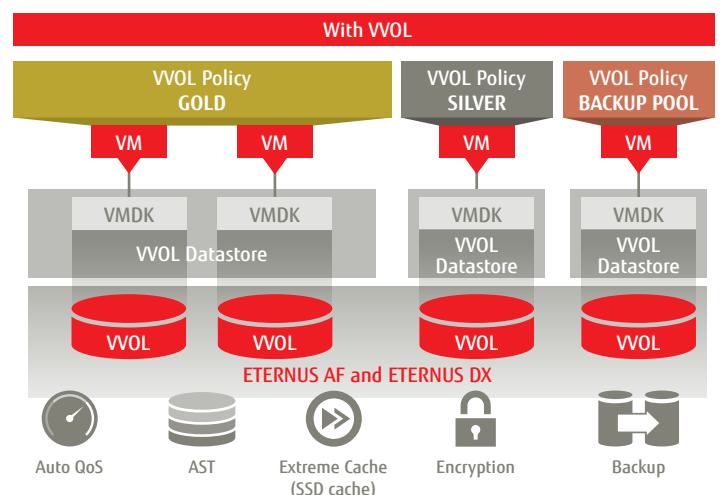
VMware vSphere Virtual Volumes, commonly referred to as VVOL, is a development of Software Defined Storage (SDS) implemented to simplify deployment and management of Virtual Machines.

It virtualizes the storage devices by creating logical pools of capacity – the VVOL datastores – and offers these benefits:

- Simplified operations through policy-driven automation
- Simplified delivery of storage service levels to individual applications
- Improved resource utilization by enabling more flexible consumption of storage resources



VM: Virtual Maschine
VMDK: Virtual Machine Disk



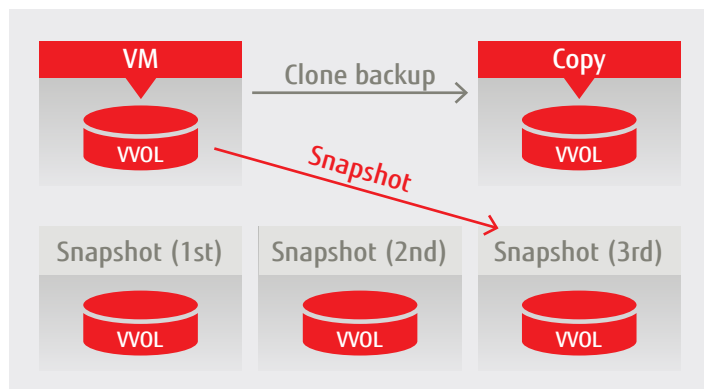
Allocation of ETERNUS AF and ETERNUS DX capabilities (Auto QoS, AST, Extreme Cache, Encryption, Backup) to VVOL policies (here: GOLD, SILVER, BACKUP POOL). Gold datastore policy stores systems such as database servers that have frequently updated data. Silver datastore policy stores systems such as AP servers that do not require storage performance.

Business Benefits of VVOL with ETERNUS AF and ETERNUS DX

ETERNUS AF and ETERNUS DX storage with VVOL support provides an outstanding, powerful combination of storage array capabilities with the advantages of a virtualized environment. The outcome: reliable, streamlined deployment of virtual storage to serve all business applications, more agile storage consumption, and easier management of VMware storage environments.

Benefits of ETERNUS AF and ETERNUS DX Capabilities

The **Virtual Machine Backup** provides a granular definition of the VVOL snapshot schedule. These snapshots can be used to backup individual VMs using array based snapshot technology (SnapOPC+). Additionally an array based clone (QuickOPC) can be created simultaneously offering protection against raid group failures. Not only individual VMs but even single files can be restored (and without stopping the VM).



Automated Storage Tiering (AST) allows moving chunks of data between different disk types and RAID levels to meet the right balance between performance and space usage. Frequently accessed data can be moved to high speed drives such as SSDs and less frequently accessed data to cost-effective disks with large capacities.

Automated Quality of Service (Auto QoS) ensures that particular applications always get a certain, predefined performance level. Adjusting bandwidth and performing an automatic tuning of the I/O performance makes sure the required response time per application will be achieved.

Extreme Cache expands the system cache (with flash storage located directly in the controller enclosure or SSDs located in the disk enclosure). It provides higher performance while using fewer disk drives, optimizing system-wide costs and power consumption.

With **Data Encryption** controller based encryption can be enabled per VVOL.

Why choose ETERNUS AF and ETERNUS DX with VVOL support

Virtual environments rely on the performance and capabilities of the underlying physical layer. ETERNUS AF and ETERNUS DX deliver outstanding performance, proven by a long history of benchmark records. The extraordinary ETERNUS AF and ETERNUS DX capabilities combined with VMware provide the highest levels of integration, offering benefits such as:

- Fast, predictable response times for business-critical applications
- Advanced automation and reduced complexity
- Simplified deployment and individual management of VMs
- Simultaneous creation of both snapshots and clones
- Granular restore of VMs and even single files

The integration of ETERNUS AF and ETERNUS DX capabilities in VMware environment significantly reduces complexity. In addition to its outstanding performance, ETERNUS AF and ETERNUS DX offers advanced and automated management of the array within with VMware VVOL.

Published by
Fujitsu Limited

Copyright 2018 FUJITSU LIMITED

www.fujitsu.com/eternus

All rights reserved, including intellectual property rights. Technical data subject to modifications and delivery subject to availability. Any liability that the data and illustrations are complete, actual or correct is excluded. Designations may be trademarks and/or copyrights of the respective manufacturer, the use of which by third parties for their own purposes may infringe the rights of such owner.