EMC VNX, MIDRANGE STORAGE WITH AN ENTERPRISE HEART
FLASH STORAGE YOU CAN AFFORD

ESSENTIALS

- Midrange unified storage for all your **file and block** storage needs

- **All flash and hybrid flash configurations** available

- MCx™ multi-core optimization **unlocks the power of flash**

- Powerful **multi-core** Intel CPUs with 6-Gb/s SAS backend

- Easy storage provisioning from the #**1 provider** of VMware® integration* and the **1**st **storage platform** to support Microsoft Server 2012 Hyper-V 3.0 environments

- Dense configurations with 120 drives in 3U of space

- **Administration simplicity** with EMC Unisphere™ Management Suite

- **Efficiency features** that includes Thin Provisioning, Block & File Deduplication and Compression

- Drive level encryption with **Data-at-Rest Encryption**

- VNXe3200 is the most affordable flash-optimized hybrid flash array **starting at less than $8K**

- **Software Defined Storage with vVNX** Community Edition. [Free download available](#)

OVERVIEW

The storage landscape is trending toward a flash-centric world, with the midrange being no exception.

A flexible and affordable storage system is required that can change with your business, application, and integration needs. With the EMC® VNX®, you can go anywhere; you can start small or you can grow to up to 1500 drives, you can utilize unified storage (file and/or block), as a flash only configuration or as a hybrid flash array with mixed pools (mixture of SSDs and HDDs). VNX supports your private or hybrid cloud infrastructure, your transactional requirements or your mixed workloads.

With Enterprise features like deduplication, data-at-rest-encryption, local and remote replication, data mobility and a lot more, VNX is your economical storage choice.

VNX STORAGE ARRAY

The VNX family delivers industry-leading innovation and enterprise capabilities for file and block storage in a scalable, easy-to-use unified storage solution. VNX storage combines powerful and flexible hardware with advanced efficiency, management, and protection software to meet the affordability, efficiency, and performance needs of today's enterprises. All of this is available in a choice of systems ranging from affordable entry-level solutions to high-performance, petabyte-capacity configurations servicing the most demanding mixed workload requirements.

UNIFIED STORAGE

A robust unified hybrid flash storage platform for consolidation of block storage, file servers, and direct-attached application storage, the VNX family enables organizations to dynamically grow, share, and cost-effectively manage multi-protocol file systems and multi-protocol block storage access. As a unified array, the VNX enables Microsoft Windows and Linux/UNIX clients to share files in multi-protocol (NFS and CIFS) environments. At the same time, it supports iSCSI, Fibre Channel, and FCoE access for high-bandwidth and latency-sensitive block applications.

FLASH

The VNX flash-based architecture allows you to get the most out of your storage. The VNX is designed for flash, delivers enterprise functionality with midrange economics.

With all flash, you benefit from predictable performance. With an all flash VNX, you benefit from predictable performance, for all your mixed applications, at midrange prices.
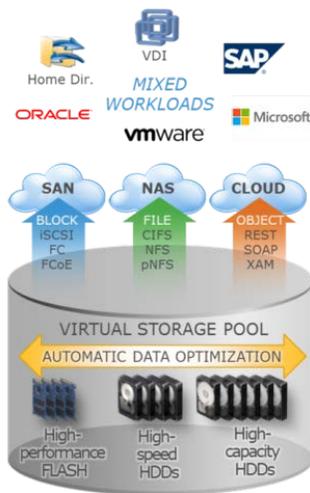
VNX also supports Fully Automated Storage Tiering (FAST) software, delivering consistent performance of Flash with the cost-effectiveness of capacity-based spinning disks. This powerful combination of hardware and policy-based software recognizes that not all data is created equal and therefore constantly auto-tuning, tiering, and caching data between flash and disk to simultaneously meet ITs performance and cost ($/GB and $/IOPS) goals. So, for cost-sensitive environments that need a balance of performance and capacity, hybrid flash is a good alternative to an all flash configuration.

If all flash configurations are not required, EMC has created guidelines for using the right amount of flash in a VNX. The guideline suggests implementing 3%, 10%, or 25% of Flash capacity to start with in a VNX hybrid Flash Array. This approach enables you to consider a broad mix of application workloads with an optimized amount of Flash to deliver the best price/performance. Customers that use these guidelines can optimize their adoption of Flash to accommodate a wide range of application needs and growth in the following manner:

- Use a Value Optimized VNX with **3% Flash**, for general purpose workloads that require the best $/GB
- Use a Balanced VNX System with **10% Flash**, for mixed, virtualized workloads requiring dynamic performance optimization
- Use a Performance Optimized VNX with **25% Flash**, for demanding workloads that require all-flash performance
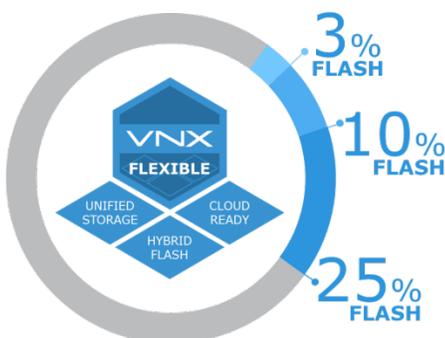
Determining which percentage of flash to start with depends on the workloads, number of users, data growth, and capacity. Many applications are not IO intensive and cannot take advantage of the increase in response and performance of flash.

So in a mixed workload environment with multiple application types, most customers can implement a balanced system with 10% VNX flash and cover the majority of their performance requirements. See how your application environment can be optimized with VNX and Flash using the VNX Hybrid Flash Calculator.

EFFICIENCIES

Compounded efficiencies is a way to easily save money by combining VNX thin provisioning, out-of-band block-deduplication and FAST tiering technologies. Improve storage utilization by allocate storage on demand with thing provisioning. Save on CAPEX with VNX Block Deduplication for both block and file environments, enable automated tiering with the FAST technology and enjoy the compounded efficiencies of; less capacity, add FAST and more IOs can be delivered from flash for an overall lower $/GB.
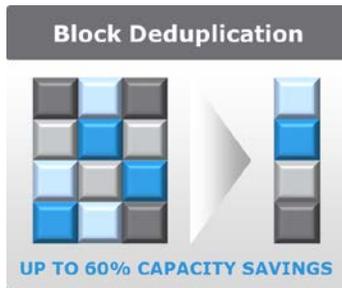
CLOUD READY

Many companies have shifted to a virtualization first model and have begun to explore how the cloud can benefit them. Many organizations, interested in the economics, performance, and integration capabilities of different cloud deployment options have turned to EMC and VNX as a leader in both private and hybrid cloud architectures. EMC has built its hybrid cloud offerings based on VMware's orchestration & automation components as part of the EMC Federation. Along with a strong installed base of data protection products - such as Data Domain, Avamar, NetWorker, and RecoverPoint – VNX is integrated into the VMware orchestration and automation ecosystem as part of the EMC hybrid cloud strategy.

EMC's VNX simplified and automated hybrid flash array is an integral part of EMC's hybrid cloud strategy enabling and accelerated path to private or hybrid cloud deployments. For organizations building private clouds, VNX was ranked #1 in virtualization integration and was the first platform to support Hyper-V 3.0 and related features like SMB3. For hybrid cloud deployments, a VNX combined with EMC ViPR™ provides a foundation for federated management and object interfaces to VNX storage for a variety of cloud frameworks. (Reference Architecture on EMC Hybrid Cloud with VMware).

For simplified and automated cloud provisioning and management, VNX platforms offer great FREE tools for VMware- and Microsoft-centric environments, including:

EMC Virtual Storage Integrator (VSI):
- VSI dramatically simplifies management of virtualized storage with the ability to map virtual machines to storage and to self-provision storage from VMware vCenter.

EMC Storage Integrator for Windows Suite (ESI):
- ESI integrates with Microsoft Management Center to provision applications in less time, monitor storage health with in-depth storage topology views, and automate storage management with rich scripting libraries. ESI also includes System Center integrations such as SCOM, SCO, and SCVMM.

DEPLOYMENT FLEXIBILITY

Many storage offerings tend to limit your deployment options by only allowing connectivity to the application you've purchased it for and nothing else. Flexibility is a mainstay value proposition of the VNX. You can deploy a VNX stand-alone, as part of an embedded solution, converged, specialized appliance, and even as a software-defined storage appliance. Start as a block storage solution and then simply include file storage utilizing VNX for your NAS requirements too.

And the VNX hybrid flash deployment flexibility extends to converged infrastructures such as VCE VBLOCK and VSPEX Reference Architectures. Additionally, VNX is available in specialized and purpose-built configurations like the all flash configurations –delivering more value at a lower price point.

SOFTWARE-DEFINED STORAGE

IT organizations are increasingly looking to software-defined infrastructure solutions to provide agility and flexibility to their operational and development environments. EMC provides customers with the ability to easily create shared storage consisting of a virtual instance of the VNX unified storage protocol and management stack, without the requirement for dedicated storage platforms. vVNX provides this initial flexibility to test and development as well as other non-production environments. With the flexibility of software-defined storage, you can:

- Create storage environments based on familiar VNX features and interface and without a dedicated system
- Create multiple virtual VNX instances cost-effectively, using standard server hardware
- Test features such as data protection and disaster recovery without the need for multiple VNX systems

Get the vVNX Community Edition: Free download

THE INDUSTRY'S MOST EXTENSIVE STORAGE SOFTWARE OFFERINGS

Storage management is a key element for success with today's data-intensive and virtualized application environments. EMC VNX software simplifies storage management and enables you to increase efficiency and application performance with advanced features like FAST, deduplication, snapshots, replication, thin, and compression that also drive down costs (opex/capex).

EMC VNX Software Essentials

The VNX family of unified hybrid flash arrays offers the most comprehensive software functionality to ensure customers have all the necessary capabilities to protect and manage their information. The VNX Software Essentials Pack includes the most requested and essential software features in one cost-effective package.

The pack includes capabilities that dynamically improve storage performance, efficiency, availability, data protection, and costs. Complete details about VNX software features can be found in the EMC Software Data Sheet.

EMC Unisphere Management

EMC Unisphere is the unified storage management platform that provides intuitive interfaces for the complete range of VNX unified hybrid flash storage arrays including VNX, VNXe, vVNX and VNX-VSS. Unisphere's approach to storage management fosters simplicity, flexibility, self-help, and automation – all key requirements for the journey to the cloud. Complete details about VNX management capabilities can be found in the EMC Unisphere Management data sheet.

EMC Storage Analytics

The EMC Storage Analytics (ESA) solution delivers a single, end-to-end view of virtualized infrastructures (servers to storage) powered by VMware vRealize Operations analytics engine. ESA delivers actionable performance analysis and proactively facilitates increased insight into storage resource pools to help detect capacity and performance issues so they can be corrected before they cause a major impact on business operations. Complete details about VNX analytics capabilities can be found in the EMC Storage Analytics data sheet.

Continuous Data Availability and Zero Data Loss

With deep integration with EMC VPLEX and VNX Virtual Data Mover (VDM) support, VNX offers block and file continuous data availability and zero data loss support. VPLEX delivers on the promise of non-disruptive migrations, efficient array life cycle management and continuous availability. While VDM's enable simple file migrations and load balancing and combined with VDM MetroSync, offers zero data loss disaster recovery.

VNX Data-At-Rest Encryption (D@RE)

Controller based D@RE provides protection from drive removal or loss, and can eliminate the need for Data Erasure services. D@RE can also be enabled at any point in time. Read more in EMC Software Essentials

VNXe Series: THE MOST AFFORDABLE HYBRID FLASH STORAGE

The newest members of the EMC VNX family are most the most affordable, namely the VNXe series – the VNXe1600 and VNXe3200. The VNXe1600 and VNXe3200 have the power compressed into an efficient, easy-to-use package designed for resource-constrained IT departments in any size company. With starting configurations at under $8K and all the Value-Add Software included, the VNXe series are a must for Small / Medium Business environments.

Storage Made Simple
PROVISION DIAGNOSE FIX
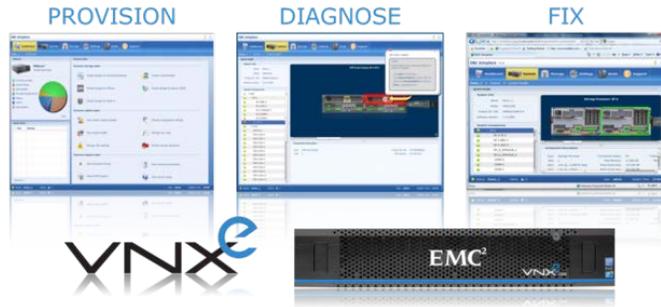
While the VNXe1600 supports block only environment and provides the best economics available, the VNXe3200 can be setup for NAS or SAN in minutes and is designed to integrate directly into your application and virtualization environments. The VNXe stores and protects your data while lowering your total costs in terms of $/IOPS and $/GB.

ALL FLASH CONFIGURATIONS

The VNX and VNXe products support all flash configurations making them EMC's most affordable unified all flash storage options. All flash configurations or all flash pools deliver sustained and predictable performance for virtual servers, databases, and transactional applications.

VNX all flash configurations with block, file and unified support allow you to start with an all flash configuration and simply add HDDs for all other workloads too.

The VNXe3200 all flash configurations is offered in 2TB, 3TB, 4TB, and 8TB slim 2 RackU form factor configurations and maintains the rich enterprise feature-set, management simplicity, and Connect Proactive Support capability of the VNXe.

MAXIMIZE THE BENEFITS OF THE VNX FAMILY WITH EMC GLOBAL SERVICES

EMC VNX platforms come standard with a three- year Enhanced support warranty, which provides customers with next business- day onsite coverage and 24x7 remote support. Customers have the option to upgrade to Premium support to receive 24x7 same-day onsite support.

Outside of support EMC delivers a full complement of services for the VNX family which include expert planning, design, implementation, consulting, migration and education. Please contact your account team for further information.

store.emc.com/vnx
store.emc.com/vnxallflash

CONTACT US

To learn more about how EMC products, services, and solutions can help solve your business and IT challenges, contact your local representative or authorized reseller—or visit the EMC Store