EMC VNX SERIES GATEWAY

Reach new heights of performance, availability, scalability, and flexibility with EMC VNX Series Gateway platforms: VG2 and VG8

ESSENTIALS

- Experience NAS simplicity and efficiency with the world's #1 trusted storage platform in Symmetrix, VNX series, and/or CLARiiON FC/iSCSI SAN efficiency and performance
- Experience efficiency-driven storage technologies, including: simple and efficient storage management, tiered storage (Flash, high-performance and high-capacity drives), FAST Cache, file system deduplication and compression, automated volume management, virtual provisioning, and asynchronous replications
- Maximize capacity utilization by adding an EMC VNX Series Gateway to your EMC Symmetrix, EMC VNX series, and/or EMC CLARiiON SAN, and enjoy the full benefits of NAS (CIFS and NFS including pNFS) and MPFS
- A choice of up to four back-end storage arrays (Symmetrix, VNX series, and/or CLARiiON) with automated tiering, increased capacity utilization, and record-breaking performance lets businesses meet precise performance, scalability, cost, and energy requirements
- Enable your Microsoft Windows and UNIX users to share files through extensive multi-protocol support

MEETING THE INFORMATION-SHARING CHALLENGE

Performance bottlenecks, security issues, and the high cost of data protection and management associated with deploying file servers using general-purpose operating systems become non-issues with the EMC® VNX™ Series Gateway. Each VNX Series Gateway product—the VG2 or VG8—is a dedicated network server optimized for file access and advanced functionality in a scalable, easy-to-use package. The world's number-one trusted storage platform found in best-in-class EMC Symmetrix®, the EMC VNX series, and EMC CLARiiON® back-end array technologies, combined with the VNX series impressive I/O system architecture, deliver industry-leading availability, scalability, performance, and ease of management to your business.

The VNX series follows a modular unified approach with separate block storage processors of varying capacities and performance, scalable X-Blades, and single or dual Control Stations across the series. This flexibility enables customers to scale block storage pool processors and file system processors independently to meet their unique business needs. Utilizing this architecture, the VNX Series Gateway delivers record-breaking file system performance.

VNX Series Gateway platforms extend the value of existing EMC storage array technologies, delivering a comprehensive, consolidated storage solution that adds IP storage (NAS and iSCSI) in a centrally managed information storage system, enabling you to dynamically grow, share, and cost-effectively manage file systems with multi-protocol file access.

Take advantage of simultaneous support for NFS (including NFSv4.1 with pNFS support) and CIFS protocols by letting UNIX and Microsoft Windows clients share files using the VNX Operating Environment for File sophisticated file-locking mechanisms. The high-end features offered with the VNX Series Gateway platform enable entry-level data center consolidation resulting in lower total cost of ownership (TCO) of your server and storage assets—while enabling you to grow your IP storage environment into the hundreds of terabytes from a single point of management. You can also improve performance over standard NAS by enabling pNFS for your NFS requirements; or simply add VNX Multi-Path File System (MPFS) to your environment for your NFS and CIFS requirements without application modification.

- Ensure no-compromise availability through advanced failover while accelerating the value of a virtualized infrastructure with the flexibility of an NFS deployment
- Capitalize on industry-leading performance, availability, and scalability with up to eight X-Blades in the front-end and up to four storage arrays at the back-end
- Enjoy the comfort of knowing your EMC solution is serviced by the number-one-rated vendor in the industry

FLEXIBLE SOLUTIONS TO MEET A WIDE RANGE OF REQUIREMENTS

EMC VNX Series Gateway platforms combine a NAS head with industry-leading SAN storage for a flexible, cost-effective implementation that maximizes the utilization of your existing resources. This approach offers the utmost in configuration options, including:

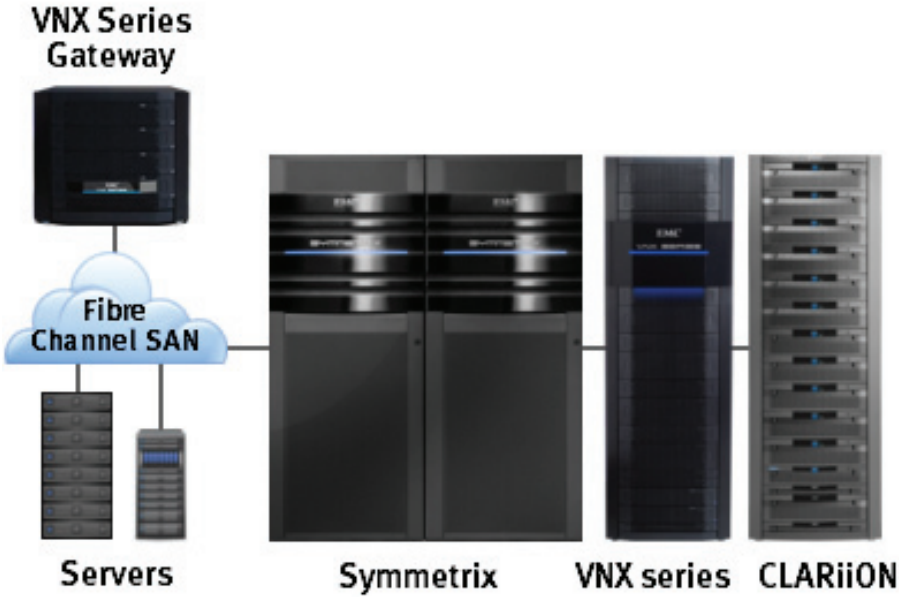
- One-to-eight X-Blade configurations
- Flash high-performance, high-capacity drives with EMC Fully Automated Storage Tiering for Virtual Pools (FAST VP) functionality automatically optimizes performance while reducing TCO
- Performance, availability, and capacity flexibility
- EMC Symmetrix, VNX series, and/or CLARiiON storage
- Native integration with Symmetrix, VNX series, and CLARiiON replication software offerings provides a single replication solution for all your SAN and IP storage disaster recovery requirements with support for "24 x Forever availability"

VNX VG2

- One or two X-Blades
- Four core 2.40 GHz Intel Xeon® 5600 processors with 6 GB memory
- 64 TB usable capacity per X-Blade (128 TB per system)

VNX VG8

- Two to eight X-Blades
- Six Core 2.83 GHz Intel Xeon 5600 processors with 24 GB memory
- 256 TB usable capacity per X-Blade (1,792 TB per system)



- Shared storage
- Add NAS and MPFS to Fibre Channel or FCoE SAN
- Leverage existing storage investment
- Scale performance and capacity

START SMALL AND UPGRADE NON-DISRUPTIVELY

If you are looking for an entry-level EMC IP storage solution to extend your existing storage investment or want a low-cost, SAN-plus-NAS platform, choose the VG2 Gateway product and receive the same high-end features as the massively scalable VG8 platform.

As your requirements grow, simply upgrade your system online from a single to a dual X-Blade (VG2) or from two to eight X-Blade configurations in single-blade increments (VG8). This solution enables you to easily leverage the benefits of a growth path to more performance, scalability, and a higher level of availability.

EMC VNX SERIES GATEWAY PLATFORM SYSTEM ELEMENTS

The VNX Series Gateway comprises one or more autonomous servers called X-Blades which connect via Fibre Channel or Fibre Channel over Ethernet (FCoE) SAN to a Symmetrix, VNX series, or CLARiiON storage array. The X-Blades control data movement from the disks to the network. Each X-Blade consists of an Intel-based server with redundant data paths, power supplies, and optional multiple-gigabit Ethernet ports and/or optional, multiple 10 gigabit Ethernet optical ports. X-Blades run EMC's VNX Operating Environment for File, designed and optimized for high-performance and multi-protocol network file access. All of the X-Blades in a system are managed by the Control Station which operates out of the data path and provides a single point of configuration management and administration. It also handles X-Blade failover and maintenance support. Two Control Stations for high availability are also supported.

UNEQUALED AVAILABILITY FEATURES

The VNX Series Gateway platforms provide flexible availability configurations with the option of non-stop file access achieved through transparent, dynamic failover to a hot standby X-Blade. Depending on your operational needs, you can deploy in several operating modes including primary/standby or primary/primary for the VG2, or advanced N+1 or N+M failover for the VG8 (where N is the number of active X-Blades and M is the number of X-Blades in the standby pool).

Primary/standby is designed for environments that cannot tolerate any system downtime due to a hardware failure. In this mode, one of the X-Blades operates in standby mode while the primary one manages all of the data movement between the network and storage. For the VG8, one or more X-Blades can be configured as standby (N+M advanced failover model) for the active blades, providing a pool of blades for the highest levels of availability. The standby blade(s) seamlessly take over the operation of any failing blade, delivering equal performance to the primary system after a failover, thus allowing the system to fully scale without concern for managing potential resource constraints in the event of a failover.

In the event of an X-Blade failover, VNX Operating Environment for File uses a metadata logging facility to recover. The advanced failover capabilities allow the hot spare to take over the full workload, running at the same performance and service levels as before the failure.

For information protection, VNX Series Gateway systems offer EMC SnapSure™ software for creating read-only/read-write snaps of file systems. The snapshot can be used for online backups as well as for quick recovery of deleted files. With the addition of Microsoft Volume Shadow Copy Client Services integration, this capability is taken a step further, enabling the end user to leverage the functionality in Windows XP clients to recover deleted files directly from the Windows Explorer user interface.

For an even higher degree of information protection, EMC VNX Replicator asynchronously creates a point-in-time copy of a production file system on either a local or geographically remote VNX series system. Replicator provides multi-site protection, simplifies administration with easy-to-define business policies—including recovery point objectives (RPOs)—and uses standard IP-based networks for maintaining consistent replicas between the two sites.

The dedicated, hardware-based RAID controllers in Symmetrix, VNX series, and/or CLARiiON mean that there is minimal performance degradation during a rebuild. The VNX Series Gateway platform defines enterprise-level high availability delivered with X-Blade failover, hardware RAID protection, non-disruptive component replacement, storage processor battery backup, and advanced volume management.

Native LUN replication in the form of EMC MirrorView™/S with VNX series/CLARiiON or SRDF®/S with Symmetrix is also supported for your most critical data requiring zero-data-loss availability in the event of a disaster.

EMC UNISPHERE

- Next-generation storage management
- Common experience for your mid-range SAN and NAS
- Pluggable architecture
- Built-in access to support community

OBTAIN ALL OF THE BENEFITS OF SYMMETRIX, VNX SERIES, AND/OR CLARIION FEATURES WHILE LEVERAGING THE SIMPLICITY AND EFFICIENCY OF THE FOLLOWING IP FEATURES

- **EMC Unisphere™** provides a simple, consolidated interface to manage VNX, CLARiiON, and EMC Celerra® platforms. From one screen, you can now take advantage of task-based navigation and dashboard views for at-a-glance management and reporting. Unisphere's flexible design enables additional element managers to be plugged in, and it offers built-in, online access to key support tools including software downloads, online customer communities, and live chat support.
- **EMC Ionix™ ControlCenter®** can discover, monitor, and launch native management applications, like Unisphere, as part of an enterprise infrastructure.
- **Command-line interface (CLI)** is supported for administrators preferring to work with UNIX-like commands and scripts.
- **VNX data deduplication** with compression delivers the maximum storage efficiency for primary and archived file systems.
- **FAST Cache for VNX series/CLARiiON** is a performance-optimization feature that accelerates application performance. Using Enterprise Flash drives to extend existing cache capacities, FAST Cache automatically absorbs unpredicted "spikes" in application workloads.
- Provide file-based tiering with **Cloud Tiering Appliance or Cloud Tiering Appliance/VE** within a single platform or to a secondary platform (to a VNX, EMC Centera®, EMC Atmos™, or EMC Data Domain®) with concurrent support for ultra-performance Flash drives, high-performance, and cost-efficient high-capacity drives.
- **VNX Virtual Provisioning™** enables file systems to be logically sized to required capacities and physically provisioned with less, so storage does not sit idly in a file system or LUN until it is used. Automatic file system extension and Dynamic iSCSI LUN extension allow the physical allocation to be increased on the fly.
- **VNX Automated Volume Management** lets you quickly and painlessly provision file systems by workload in only four clicks.
- **VNX quotas** let system administrators allocate disk space on a per-user, per-group, and per-directory tree basis, leveraging a VNX array's extensive support for byte, block-level, and directory quotas.
- **VNX Multi-Path File System (MPFS)** improves performance and scalability over traditional NAS without application changes.
- **EMC VNX SnapSure** software creates read-only/read-write copies of file systems and iSCSI LUNs for backups and quick recovery of deleted files or file systems. Since SnapSure isn't mirroring your data, it saves disk space and time.
- **EMC VNX Replicator** creates a point-in-time copy of a production file system on either a local or geographically remote VNX system. VNX Replicator provides multi-site protection, simplifies administration with easy-to-define business policies—including recovery-point objectives (RPOs), and uses standard IP-based networks for maintaining consistent replicas between the sites. VNX Replicator is integrated with VMware® Site Recovery Manager to provide failover and failback of virtual infrastructures.
- **EMC Replication Manager** provides host-based management of array-based copies of data. Replication Manager leverages VMware, Oracle, and Microsoft integration to produce application-consistent copies of Microsoft Exchange, SQL Server, and SharePoint, as well as Oracle database data deployed on NFS, iSCSI, or Fibre Channel storage.
- **VNX FileMover API** enables transparent policy-based movement of files between tiers of storage. It is leveraged by EMC File Management Appliance and third-party vendors for a seamless file archiving solution.
- **VNX Event Enabler (VEE)** suite, which comprises:

  - **Anti-Virus** provides on-demand anti-virus support through tight integration with industry-leading anti-virus vendors such as Symantec, McAfee, Computer Associates, Trend Micro, Kaspersky, and Sophos.
  - **Event Publishing** provides on-demand, event-driven functionality via tight integration with industry-leading quota management and auditing vendors such as Northern Parklife, NTP Software, and Veronis.
- **VNX file-level retention** delivers disk-based WORM requirements with an Enterprise and Compliant option.
- **Full VMware certification**, multi-protocol (NFS, iSCSI, FC) support for VMware, including:
  - VMware Site Recovery Manager Integration for NFS with failover and automated failback for reliable disaster recovery.
  - VNX Plug-in for VMware on NFS providing provisioning of NFS data stores.
  - Copying virtual machines and virtual machine storage optimization leveraging VNX data deduplication with compression capabilities.
  - Data protection with Replication Manager, which offers the maximum flexibility to support the broadest set of support requirements.
- **Common criteria** EAL 3+ Assurance Level certification through successful testing by an independent and accredited evaluation laboratory; conforming to IT security standards sanctioned by the International Standards Organization.
- **Microsoft certified for Windows Server 2008 R2 with Native Microsoft Management**, including full Active Directory support, native share and quota management tools, GPO support, Access-Based Enumeration, Identity Management for UNIX, custom-built VNX MMC snap-ins, and more, provides a Windows "look and feel" in managing any member of the VNX family.

MAXIMIZE THE BENEFITS OF EMC VNX SERIES GATEWAY PLATFORMS WITH EMC SERVICES

EMC delivers the full complement of services for VNX Series Gateway products to ensure they perform as expected in your IP storage environment while minimizing risk to your business and your budget. Expert planning, design, and implementation services help you quickly realize the value of your investment in your environment, no matter how simple or complex.

After implementation, EMC's data migration services can help you plan, design, and safely migrate your critical data over any distance to your new system. EMC will also help you integrate your new system into your information architecture and applications such as Oracle and Microsoft, and man-age your new environment when it is complete.

Extensively trained professional services personnel and project management teams—leveraging EMC's extensive storage deployment best practices and guided by our proven methodology—accelerate the business results you need without straining the resources you have.

EMC VNX SERIES GATEWAY SERVICES FIT YOUR NEEDS

EMC can assess your environment to determine the optimum configuration and integration of your VNX Gateway platform into your infrastructure; create a detailed technical design; and review the lifecycle of your data assets to help you define and develop the ideal IT organization for your storage environment—and the best-practice policies to support it.

CONTACT US

For more information on how EMC VNX Series Gateway platforms can meet your networked information sharing needs and bring increased value to your business, contact your EMC sales representative or authorized EMC value-added systems integrator. Or visit our website at www.EMC.com.

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