EMC VPLEX FAMILY
Continuous Availability and Data Mobility Within and Across Data Centers

DELIVERING CONTINUOUS AVAILABILITY AND DATA MOBILITY FOR MISSION CRITICAL APPLICATIONS

Storage infrastructure is evolving to deliver new methods of making data mobile, freeing it from physical device limitations. Virtualizing storage extends the benefits of server virtualization, providing automation, integration with existing infrastructure and growth on demand. In the past, application data was tied to a single array. Providing Availability/mobility was challenging and doing so without application interruption was impossible.

The EMC VPLEX family delivers data availability and mobility across arrays in a single data center and across arrays in data centers separated by distance. VPLEX is a continuous availability and data mobility platform that enables mission-critical applications to remain up and running during a variety of planned and unplanned downtime scenarios, even in the event of a data center site failure. VPLEX enables non-disruptive data mobility, leveraging technologies like VMware and other clusters that were built assuming a single storage instance and enabling them to function across arrays in a single data center and across distance.

So, how does VPLEX work? VPLEX enables the exact same data to be read/write accessible across two arrays at the same time. The arrays can be in a single data center, or separated by distance. The way this is accomplished is via VPLEX’s unique implementation of distributed cache coherency. This enables transparent load sharing
between multiple arrays while providing the flexibility of relocating workloads between arrays in anticipation of planned events.

VPLEX completely changes the way IT is managed and delivered - particularly when deployed with server virtualization. The VPLEX family breaks down technology silos and enables IT to be delivered as a service by enabling new models for operating and managing IT, with the ability to dynamically move applications and data across sites.

The ability to read and write data to multiple locations simultaneously delivers new capabilities under a number of use cases:

- Stretch cluster hosts and applications across distance including Oracle RAC, VMware ESX, Microsoft Failover Cluster and Linux Cluster
- Non-disruptively move virtual server and storage resources within and across data centers including VMware vMotion and Microsoft Hyper-V Live Migration
- Maintain a single cache consistent image of federated storage at multiple sites
- Create a single point of control for a consolidated pool of federated resources
- Turn a diverse heterogeneous storage infrastructure into a centrally managed storage pool
- Transparently balance and relocate workloads in anticipation of planned events and maintenance
- Provide high availability for mission critical applications
- Perform data migrations to new arrays without scheduled downtime, during working hours, by the customer, without migration services
- Enable the use of resources at a passive site by creating an active/active environment between two data centers
- Deliver unmatched continuous availability and disaster recovery through EMC RecoverPoint native splitter technology for VPLEX Local and VPLEX Metro
A SCALABLE ARCHITECTURE TO MEET FUTURE REQUIREMENTS

EMC VPLEX introduces a scalable architecture, which incorporates lessons learned from more than 20 years of expertise in designing, implementing, and perfecting enterprise-class intelligent cache and distributed data protection solutions.

Built on a foundation of scalable and highly available processor engines, EMC VPLEX is designed to seamlessly scale from small to large configurations. VPLEX is an appliance that resides between the servers and heterogeneous storage assets and uses unique clustering architecture that enables servers at multiple data centers to have read/write access to shared block storage devices. Unique characteristics of this architecture include:

- Scale-out clustering hardware which lets you start small and grow big with predictable service levels
- Advance data caching utilizes large-scale SDRAM cache to improve performance and reduce I/O latency and array contention
- Distributed cache coherence for automatic sharing, balancing, and failover of I/O across the cluster
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- An active-active infrastructure fully utilizing all resources
- Resource pooling from multiple data centers, separated either by a few feet within a data center or across synchronous or asynchronous distances, enabling new models of continuous availability and workload relocation

With its unique scale-up and scale-out architecture, VPLEX advanced data caching and distributed cache coherency provides workload resiliency, automatic sharing, balancing, and failover of storage domains and enable both local and remote data access with predictable service levels.

A SOLUTION FOR ONE OR MULTIPLE DATA CENTERS

The VPLEX family consists of two products: EMC VPLEX Local and EMC VPLEX Metro

- EMC VPLEX Local delivers data mobility and availability across arrays. VPLEX is a unique virtual storage technology that enables mission critical applications to remain up and running during any of a variety of planned and unplanned downtime scenarios. VPLEX permits painless, non-disruptive data movement, taking technologies like VMware and other clusters that were built assuming a single storage instance and enabling them to function across arrays

- EMC VPLEX Metro delivers data mobility and availability across sites. VPLEX is a unique virtual storage technology that enables mission critical applications to remain up and running during any of a variety of planned and unplanned downtime scenarios. VPLEX permits painless, non-disruptive data movement, taking technologies like VMware and other clusters that were built assuming a single storage instance and enabling them to function across synchronous distance
A VPLEX Local configuration is defined by up to four VPLEX engines, which are integrated into a single cluster image through their fully redundant inter-engine fabric interconnections. The cluster interconnect functionality enables the online addition of VPLEX engines, providing exceptional scalability for all three VPLEX product configurations. All connectivity between VPLEX cluster nodes and across VPLEX Metro configuration is fully redundant, ensuring protection against single points of failure.

A VPLEX cluster can scale up through the addition of more engines, and scale out by connecting two VPLEX clusters within synchronous metro distances for a Metro configuration. VPLEX Metro helps transparently move and share workloads - including entire virtual machines - consolidate data centers, and optimize resource utilization across data centers. In addition, it provides non-disruptive data mobility, heterogeneous storage management, and continuous application availability. VPLEX Metro supports up to two clusters, which can be in the same data center or at two different sites within synchronous distances.

At a single site or across sites, the VPLEX family improves data and storage resiliency. VPLEX enables you to mirror volumes within and across locations, providing continuous application availability in the event of a disaster. This capability can increase protection and availability for critical applications while leveraging your existing storage resources - without requiring host resources.

VPLEX Metro, in combination with VMware®, provides a unique capability that enables you to extend VMware HA, FT and DRS across distance and move application data without taking CPU cycles of the hosts. Combined with vMotion, enables transparent movement and relocation of virtual machines and their corresponding data over distance.
As EMC helps customers build and implement their private clouds, VPLEX will provide the flexibility, availability, and automation to increase data access while simultaneously reducing cost and increasing efficiencies.