

Server Consolidation and Containment with Virtual Infrastructure and BlueArc

Computing Challenges Today

To meet the constant demand to deploy, maintain and grow a broad array of services and applications, IT organizations must continually add new servers. However, as a consequence of purchasing more and more servers, organizations face a growing server sprawl presenting challenges that include:

- **Rising Costs.** In addition to the expense of adding new hardware, organizations pay more for power, cooling, network infrastructure, storage infrastructure, server administration, data center upgrades and new data centers.
- **Poor return on investment.** The common practice of dedicating a single server to each x86 application and sizing it for peak loads has led to severe underutilization of server assets in most data centers.
- **Decreasing manageability.** Managing servers becomes increasingly difficult as the number of servers grows and the number of applications continue to multiply.
- **Reduced efficiency.** As server sprawl increases, IT organizations are forced to spend more time on reactive tasks such as server provisioning, configuration, monitoring and maintenance.

Consolidating and Containing Servers

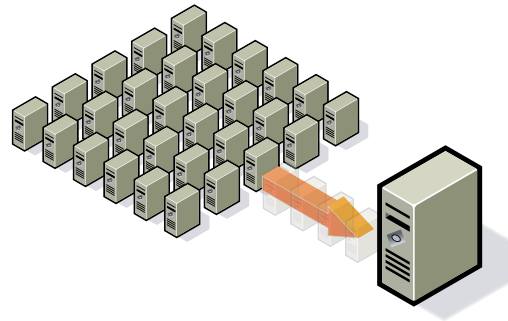
VMware® Infrastructure meets the challenges of server sprawl and underutilization by reducing hardware and operating costs by as much as 50%. A virtual infrastructure also simplifies server deployment and automates resource management to optimize capacity and infrastructure management.

VMware virtualization technology makes it possible to package a complete x86 server into a portable virtual machine package. Multiple virtual machines can then run simultaneously and independently on a single x86 server with consolidation ratios often exceeding five virtual machines per host processor.

Benefits of Server Consolidation and Containment

More than 100,000 customers—including 100% of the Fortune 100—rely on VMware virtualization solutions and realize benefits such as:

- **Dramatically lower costs.** IT organizations can reduce hardware and operating costs by as much as 50% from implementing a VMware server consolidation solution. Fewer servers also means lower costs for administration, power, cooling and data center infrastructure.



- **Boosted utilization and availability.** VMware Infrastructure aggregates x86 server resources into pools that can reliably support CPU utilization exceeding 80% with the continuous load balancing provided by VMware DRS. If a physical server goes down, all the virtual machines on that hardware will migrate automatically and restart upon another physical server within the resource pool, via VMware High Availability (HA).
- **Improved manageability and reliability.** VMware Infrastructure reduces data center complexity by reducing the number of servers that IT organizations need to manage. Meanwhile, the VMware hypervisor sets the standard for reliability. Instances of ESX Server have been running in production customer environments for more than three years without a second of downtime.
- **Simplified server provisioning and workload deployment.** IT departments can reduce the time it takes to provision new servers by 50-70%. Virtual machines are as easy to copy as software files and are hardware independent, so deploying new workloads takes minutes instead of days.
- **Increased IT efficiency.** A VMware solution streamlines and eliminates common administrative tasks enabling IT organizations to manage a growing server environment with existing resources.
- **Improved ability to handle future growth.** Because a VMware solution eliminates the need to dedicate a physical server to each workload (or server application), organizations can more effectively monitor growth in relation to utilized capacity.

Learn More

To learn more about VMware solutions and products, visit <http://www.vmware.com> or call 1-877-4VMWARE.



BlueArc Corporation
www.bluearc.com

Partner Overview

BlueArc is a leading provider of high performance unified network storage systems to enterprise markets, as well as data intensive markets.

Key Business Needs

IT environments looking to achieve new efficiencies through the following infrastructure approaches: server virtualization with VMware, server consolidation, business continuity with VMware® VMotion™, scalable and high performance VMware environments.

Key market verticals are: electronic discovery, entertainment, federal government, higher education, Internet services, oil and gas and life sciences.

Key Business Benefits

The simplicity of a virtualized shared storage resource like BlueArc parallels the VMware approach to a shared server using VMware ESX. When the two are used in tandem it provides powerful economic advantages and operational flexibility. This ensures resources are efficient at all levels of IT infrastructure from application to storage.

Business Results

BlueArc enables companies to expand the ways they explore, discover, research, create, process and innovate in data-intensive environments. Our products replace complex and performance-limited products with high performance, scalable and easy to use systems capable of handling the most data intensive applications and environments.

VMware and BlueArc

The virtual-on-virtual approach of VMware and BlueArc creates the perfect tandem for consolidation solutions that span the complete spectrum from application to storage.

Products

The BlueArc Titan Server is verified through VMware testing for the following VMware connectivity options:

- VMware with software iSCSI
- VMware with hardware TOE iSCSI
- VMware with NAS based NFS
- VMware ESX, VMware Infrastructure 3, VMware HA, DRS

Partner Products

- BlueArc Titan Servers and Software

Consolidate with Confidence when Using a BlueArc Titan Storage Solution

Optimize VMware Infrastructure with BlueArc high performance to maximize server consolidation

Industry Overview

The economic benefits of both server and storage consolidation are both well understood but often separate drivers behind saving cost and simplifying application growth challenges associated with IT infrastructure. VMware provides the virtualization essential to server consolidation to optimize resource utilization that achieves improved levels of cost and energy efficiency. BlueArc provides the perfect compliment solving the storage side of this solution by providing an efficient means to address storage consolidation that maps directly to the needs of a VMware Infrastructure. When combined together VMware and BlueArc provide a winning strategy to maximize consolidation and improve application growth and performance.

Solution Overview

The BlueArc Titan Server is an IP-based network storage solution with connectivity for VMware through standard NAS protocols like NFS and iSCSI block based protocol. The BlueArc Titan can be used to consolidate the needs of multiple VMware instances to fully shared and virtualized storage resources on the BlueArc Titan. Customers can enjoy the combined flexibility of NAS and iSCSI connectivity without the worry of performance impacts related to application growth. The unique, hardware-accelerated architecture of the BlueArc Titan Server delivers upon diverse storage needs from multiple simultaneous VMware ESX instances and is adaptable to changing VMware virtual machine mobility and data protection needs. Unique in its performance potential, the storage virtualization properties and automated thin provisioning capabilities of the Titan Server can ensure the effective sharing and flexibility of workload demands from an ever changing and growing VMware environment. Whether you are scaling up or scaling out your VMware Infrastructure, the Titan Servers or Titan

Clusters can provide seamless capacity and performance growth over time with simplified provisioning for each VMware ESX instance, including the ability to seamlessly integrate all core data protection steps necessary like snapshots, replication and native NDMP backups.

Solution Benefits

Applications hosted by VMware software benefit immensely from virtualization techniques that allow the sharing of server resources for consolidation. When these applications require external access to storage, a corresponding virtualized approach to a share storage resource for consolidation makes for a perfect match. The BlueArc solution is a unique high performance architecture combined with tremendous scalability that offers both NAS and iSCSI connectivity for VMware environments. Rigorously tested through the VMware certification program means customers can rely on the stability and scalability of a BlueArc solution to consolidate multiple VMware ESX instances and their corresponding applications.

VMware and BlueArc

The combination of VMware server consolidation with BlueArc storage consolidation enables the best of both technologies and a compelling virtual-on-virtual approach. VMware enables optimized server virtualization and server resource efficiency and BlueArc enables optimized storage virtualization and storage resource efficiency. Combined, their impact on overall resource utilization and efficiency can have a multiplying effect on the total cost of ownership and drive new competitive opportunities by achieving improved overall IT infrastructure benefits. BlueArc provides the connectivity that provides end users the perfect match to storage that is easy to configure and manage when backing a VMware Infrastructure.