

**v-IP SAN™**

**Virtual iSCSI Storage Appliance**

**Snapshot, Mirroring, Data Migration, Encryption and Replication Services Quickly Creates Dynamic Storage Infrastructure at Low Cost**

**Affordable**

Traditional SANs are very expensive, complex and required special SAN skills and training. Finally, all the storage management and storage services you have always wanted are available with high speed at low cost - and are easy to install, setup and manage.

**Virtual Storage Pool**

A centrally managed console lets you consolidate your storage into a single, scalable and flexible pool that you can carve up into iSCSI logical volumes for physical and virtual servers that can be assigned, expanded and returned to the pool for optimal utilization.

**Storage Services**

Volumes can be mirrored locally or replicated remotely either synchronously or asynchronously, and optionally encrypted, to protect data and provide for business continuity and disaster recovery. Snapshots allow rollbacks in time at specified intervals to recover lost or corrupted data and provide host agents to quiesce databases and other applications to obtain coherent images. Existing volumes can be migrated to new storage on-the-fly with no disruption to applications servers or end users. Multiple iSCSI ports can be "teamed" for higher data throughput and load balancing of data requests for increased performance to servers and end users.

**High Availability Clusters**

Multiple appliances can be configured in a failover cluster to provide high availability storage services. If an appliance fails, another appliance takes over the storage access and continues operation transparently to application servers.



**v-IP SAN delivers previously expensive storage functionality for data protection over IP at low cost.**

**v-IP SAN Appliance**

**Key Benefits**

- Easy to Learn, Install and Manage
- Improved Storage Utilization
- Simple, Scalable, Flexible Storage Management
- Premium Functionality at Low Cost: Snapshot, Mirroring, Data Migration, Encryption, Replication
- Business Continuity, Disaster Recovery
- Eliminates Downtime for Data Migration
- Reduced or Eliminates "Backup Windows"
- Rapid Data Restoration from Disk Images
- Mountable, Writable Snapshots Provide Virtual Copies for Data Analysis and Testing
- High Availability Clustered Appliances
- Single Low Price - Not Capacity Priced

**Features**

- Logical Volume Manager
- Virtualization Engine
- High Speed Appliance with Dual Intel Processors for Low Latency and Wire Speed Data Transfer
- Clustered Appliances for High Availability
- Supports up to 256 Disk per Appliance

**Storage Support**

- FlashDisk RAID Disk Arrays
- Data Migration from all Open Storage Devices

**Clustering**

- High Availability Failover Clusters

**Server Virtualization Support**

- VMware, Citrix XenServer, Virtual Iron, Microsoft Hyper-V

**Compatibility**

- Windows 2000/2003/2008, Solaris, Red Hat Linux, Novell, Macintosh, AIX, other open O/S

**Application Integration**

- Microsoft VSS, Exchange Server, SQL Server, Oracle Databases, Backup Software

**Appliance Specifications**

Hosts sessions per appliance or cluster: 250  
 Number of volumes: 200  
 Number of mirror volumes: 40  
 Snapshots per volume: 63  
 Total number of snapshots: 2,250 (40 \* 63)  
 Synchronous mirror images per volume: 4  
 Asynchronous mirror images per volume: 3  
 Total number of asynchronous images: 120  
 Number of iSCSI hosts: 200  
 Number of snapshot enabled volumes: 40  
 Maximum number of hosts per volume: 32

**Functional Capacity**

250  
 200  
 40  
 63  
 2,250 (40 \* 63)  
 4  
 3  
 120  
 200  
 40  
 32

**v-IP SAN Appliance Storage**

Standard ports:  
 Expansion ports:  
 PCI-e port options:

**Storage Ports**

3 GbE ports  
 2 PCI-e slots  
 2 SAS, 2 FC, 2 10-Gb iSCSI,  
 2 GbE or 4 GbE iSCSI

**FlashDisk® Storage Overview**

FC-3400 Series - FC ports  
 SX-3400 Series - FC/SAS ports  
 RAID controllers:

**Storage Specifications**

224 FC/SATA/SSD disks  
 112 SAS/SATA/SSD disks  
 Single or dual active/active with auto failover/failback  
 Up to 2 GB per controller  
 0, 1, 3, 5, 6, 1+0, 15, 16, 30, 50, 60  
 Hot swappable components

Controller cache:  
 RAID levels supported:

Fault tolerance:

**Storage Reliability & Serviceability**

Hardware ASICs  
 Hardware fault tolerance  
 Hot spares

**Storage Fault Tolerance**

Hardware parity for high speed  
 Hot-swappable components  
 Hot spares, auto drive rebuilds

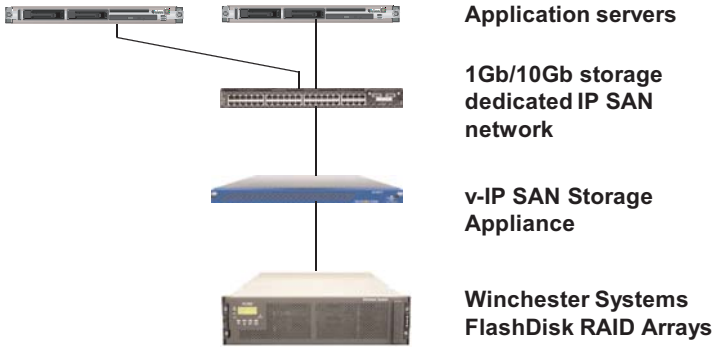
**Centralized & Remote Management**

FlashView:  
 FlashAlert:  
 Management out of band:  
 Alarms:

**Storage Management**

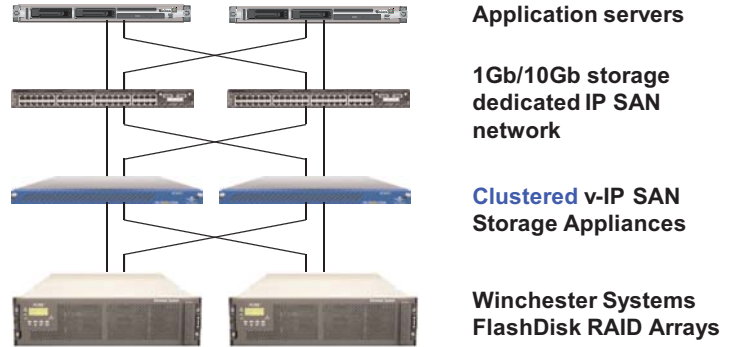
Embedded storage management  
 24-hour "call-home" service  
 Ethernet, Telnet  
 Audible and visual alerts

## Basic IP SAN



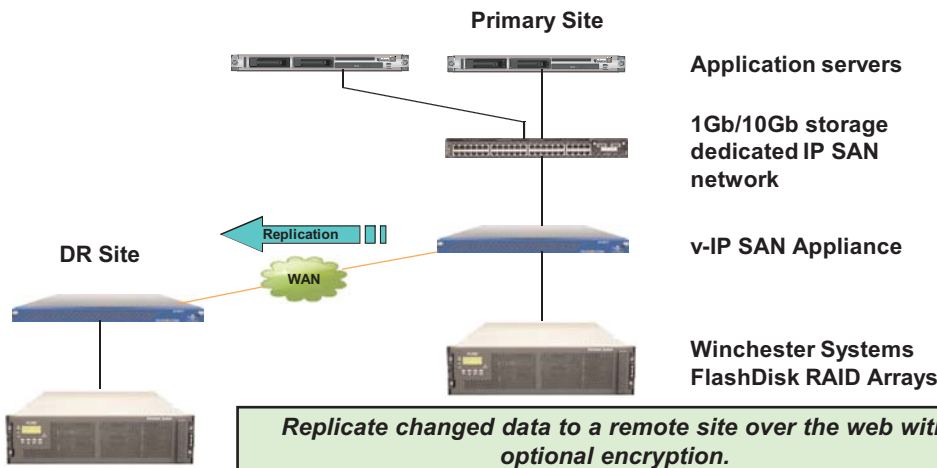
*v-IP Appliance provides virtualization, volume management, snapshots, mirroring and more . . .*

## Clustered High Availability IP SAN



*Create High Availability environments with No Single Point of Failure with two or more v-IP appliances in a cluster.*

## IP SAN with Replication



## v-IP Appliance Functionality

### iSCSI Management

- Storage Virtualization
- Logical Volume Provisioning
- Volume Level Access Control and Management
- Support for 200 Host Connections
- Support for 250 Concurrent iSCSI Sessions
- System-Wide Reporting
- AES-256 Volume Encryption
- Jumbo frame support

### Clustering Services

- Active/Active Clustering
- Load Balancing
- Seamless Failover Operations

### Snapshot

- Delta-based Snapshots
- Mountable Snapshot Volumes
- Centralized Snapshot Management
- Snapshot Scheduler

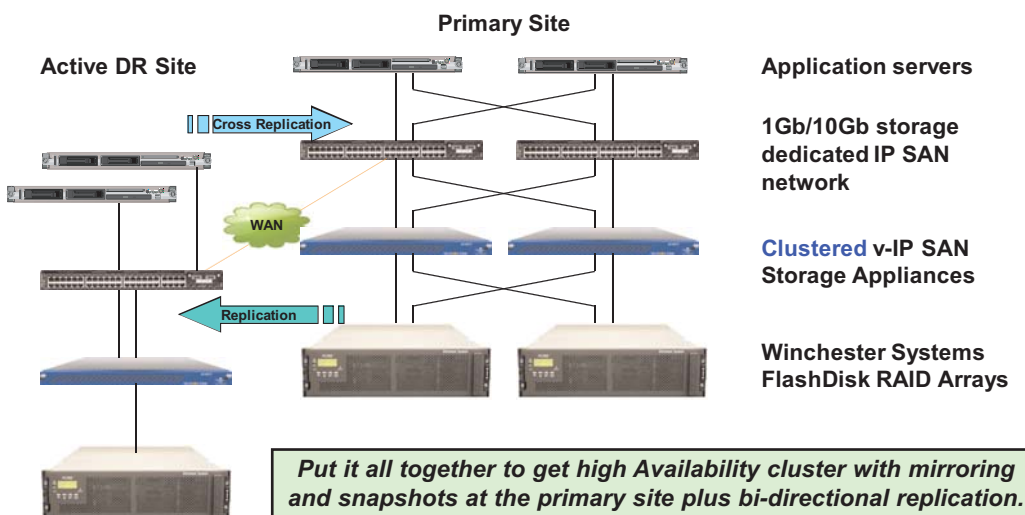
### Mirroring

- Real-time Local and Campus Synchronous Volume Mirroring
- Scheduled Asynchronous Volume Mirroring across the WAN
- Centralized Mirror Management

### System Management

- System-wide Reporting
- Email and SMS Notifications
- Command Line Utility for Snapshot Management
- SNMP Support

## Clustered High Availability IP SAN with Cross Replication



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