

# Path failover solutions for HP StorageWorks Enterprise Virtual Arrays



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## HP looks to native multipathing

In your business, you cannot afford to experience any instances in which you cannot communicate with your stored data. HP path failover solutions help ensure that you always have access to your data while:

- Reducing cost associated with high availability
- Eliminating proprietary failover solutions
- Reducing the complexity of adding failover capabilities
- Eliminating the need for different solutions for different arrays
- Simplifying deployment of HP StorageWorks Enterprise Virtual Arrays (EVAs) into new and existing environments
- Where possible, preserving your investment in HP StorageWorks Secure Path

HP path failover solutions provide simplicity without compromise. They help ensure that your data and systems will be accessible at all times, even when you have different types of arrays or there is an issue and one of the paths goes down. Path failover is a critical component for storage area network (SAN) high availability. Failover capabilities reside on host systems and provide automatic switching of I/O to another available path if an existing path becomes unavailable. Path failover solutions prevent lost data or system downtime caused by a failed I/O path on your network.

In the past, you might have had multiple path failover solutions. The variety of solutions has created many issues for operating system vendors, and many of these vendors are now offering path failover capabilities within their operating systems. HP now supports path failover built into operating systems for Microsoft® Windows® (MPIO), HP-UX (pvlinks), Sun Solaris (MPxIO), IBM AIX (MPIO), and Novell Netware (MPIO). HP also supports open source path failover on Linux (QLogic failover driver). By taking advantage of these new failover capabilities, you can reduce your total cost of ownership (TCO), simplify your environment, and easily implement this component of a high availability solution.

With the new HP StorageWorks EVAs comes the new HP multipath solutions, which will provide a single platform solution across all of the new HP arrays. Current multipath solutions will continue to be supported as long as the older arrays are supported by HP.

- The HP and Microsoft strategic alliance provides seamless integration of MPIO into total Windows solutions.
- The HP and QLogic strategic alliance provides open source path failover for Linux as part of Linux total solutions.
- HP follows operating system vendor specifications for AIX, Solaris, and Netware as part of their total solutions.
- The HP and VERITAS strategic alliance provides support for the VERITAS path failover solutions (DMP) with the new EVAs.
- Customers running Oracle as a business-critical application do not have to worry about disruptions to their businesses caused by the loss of an I/O path. Paths taken down for maintenance or repairs no longer need to be scheduled in advance or during off-hours.

## Industry supported multipathing optimizes flexibility

Currently, the HP StorageWorks Enterprise Virtual Array 3000 (EVA3000) and HP StorageWorks Enterprise Virtual Array 5000 (EVA5000) systems use Secure Path technology as a multipath solution. With the release of the HP StorageWorks Enterprise Virtual Array 4000, 6000, and 8000 (EVA4000, EVA6000, and EVA8000) systems, HP will provide you with choices and recommendations specific to your multipath solutions. This flexibility enables customers to choose

which type of failover system depending on their particular datacenter environment. Simplicity and flexibility provide you with the following multipath solution benefits:

- Industry supported and native multipath implementations have the potential to provide fewer customer configuration issues because of broader compatibility testing.
- Reduced testing requirements for HP can assist in getting array products to market faster. Because the products are third-party and not developed, the testing time is reduced.
- A wider range of multipath options will drive costs down and help customers to standardize their environments. TCO will also improve.
- Less complex multipath solutions will simplify array deployment for customers.

## The HP StorageWorks Enterprise Virtual Array portfolio

The new EVA excels at putting information to work:

- Simplicity without compromise
  - Industry-leading array simplicity, while leading or matching the best industry performance for the midrange array market
  - Industry-leading array simplicity, with industry superior midrange array availability
  - Industry-leading array simplicity, with industry-leading disk space utilization
- Change without chaos
  - Online logical unit number (LUN) and disk group growth with industry leading ease and control
  - Automated array balancing initially and as grow the array
- Growth without limits
  - **Usable** capacity increased to 200 TB opens future growth
  - Increased performance enables greater server count and I/O growth
  - Ease of upgrade from EVA4000 to EVA6000 to EVA8000 enables an easy growth path
  - Use of industry operating system MPIO utilities frees server growth

The EVA systems provide a high-performance, high availability virtual RAID storage solution that removes the time, space, and cost boundaries of traditional storage.

- HP StorageWorks EVA4000—Entry level
- HP StorageWorks EVA6000—Mid-size
- HP StorageWorks EVA8000—Enterprise-class

The EVA family is designed for departmental and enterprise-class, open-systems environments in which IT challenges must be met head on. They help eliminate storage shortfalls that can produce a domino effect across your network.

Key features of the EVA4000, EVA6000, and EVA8000 include:

- Integrated virtualization—Helps put more disks to work for improved performance and provides easy expansion and excellent ranges of virtual disk/LUN sizes and RAID types.
- High performance—Excellent controller architecture and virtualization features that put more disks to work achieving high random I/O performance and excellent bandwidth.
- High capacity—Up to 240 drives, totaling 200 TB with the Fibre Channel drives available today.
- High availability—Designed with redundant, hot-pluggable components that can easily be replaced with redundant disk RAID options and designed with redundant paths to the SAN or hosts with redundant paths to each disk drive.
- Excellent return on investment (ROI)—With the use of native path failover solutions, the cost to acquire and manage the new EVA arrays will be reduced, resulting in a lower total cost of ownership and improved return on investment.

The HP StorageWorks EVA products provide excellent growth options. The following table shows a comparison of the EVA families and the increased capacity of the new HP EVA offerings. You are also assured a compatible growth path because all future offerings will be designed to fit inside existing HP cabinets.

	<b>EVA3000/5000</b>	<b>EVA4000/6000/8000</b>
Cache (per controller pair)	2 GB/2 GB	2 GB/2 GB/4 GB
Host ports (per controller pair)	4/4	4/4/8
Host ports, speed	2/2	2/2/2
Device ports (per controller pair)	4/8	4/4/8
Device ports, speed	2/2	2/2/2
Back-end switch	No/Yes	No/Yes/Yes
3.5-inch Fibre Channel device (shelf per number of disks)	3U/14	3U/14
Fibre Channel bulk drives (shelf per number of disks)	3U/14	3U/14
Device shelves	1 to 4/2 to 18	1 to 4/4 to 8/2 to 18
Max SS # disks	8 to 56/8 to 240	8 to 56/16 to 112/8 to 240
Max number drives	56/240	56/112/240
Max capacity	16.8 TB/35 TB	16.8 TB/33.6 TB/72 TB
Higher read bandwidth	340 MB/s/525 MB/s	360 MB/s /650 MB/s /1,300 MB/s
Higher write bandwidth	145 MB/s/160 MB/s	290 MB/s /500 MB/s /600 MB/s

Highlights of the new EVA family include:

- New controllers—The HSV200 for the EVA4000 and EVA6000 and the HSV210 for the EVA8000 offer more capacity, faster performance, and the ability to increase connectivity to servers.
- New models of the EVA, including a mid-size EVA6000 model, which provides an updated array that is sized to meet the needs of the enterprise that has outgrown the capacity of the EVA5000.
- Higher performance—Read and write bandwidths of the EVA 8000 are more than double the read/write bandwidths of the EVA5000.
- Larger capacities—The EVA6000 supports up to 112 drives, twice the EVA4000 and EVA3000. The EVA8000 supports 240 drives with no addressing limits. All models have the ability to support larger disk drives in the future.
- Large selection of disk drives—The new EVA family of storage arrays support the following drives:
  - 72-GB, 146-GB, and 300-GB 10,000-rpm drives
  - 72-GB and 146-GB 15,000-rpm drives
  - 250-GB FATA drive
- Supported in most environments supported with the current EVA3000s and EVA5000s—With HP StorageWorks Virtual Arrays (VAs), HP StorageWorks Modular Arrays (MAs), HP StorageWorks Enterprise Modular Arrays (EMAs), HP StorageWorks Modular Smart Arrays (MSAs), and HP StorageWorks XP Disk Arrays, the supported operating systems and host bus adapters (HBAs) do need to be checked to ensure that the different arrays are supported on those operating systems or HBAs.

The following table shows the EVA families and the failover products that support each one.

Host operating system	EVA3000/EVA5000	EVA4000/EVA6000/EVA8000
Microsoft Windows	Secure Path 4.0C SP1 Microsoft Windows MPIO DSM (Basic)	Microsoft Windows MPIO DSM (Full-featured)
HP-UX	Secure Path for HP-UX 3.0F	PVLinks Secure Path for HP-UX 3.0F VERITAS DMP (future)
Linux	Secure Path for Linux 3.0C SP1 QLogic FO driver	QLogic FO driver
Sun Solaris	Secure Path for SUN Solaris 3.0D	MPxIO for Sun Solaris VERITAS DMP
IBM AIX	Secure Path for IBM AIX 2.0D SPx AntemetA	MPIO for IBM AIX
Novell NetWare	Secure Path for Novell NetWare 3.0C SP2	MPIO for Novell NetWare (future)

## EVA3000 and EVA5000 coexistence with the EVA4000, EVA6000, and EVA8000

It is intention of HP to allow both Secure Path and the new “native” path failover solutions to coexist on the same server using the same pair of HBAs. For specific configurations, consult the *HP StorageWorks SAN Design Reference Guide* and other HP SAN technical documentation before implementing any combination.

These documents are available on the HP website at <http://h1806.www1.hp.com/products/storageworks/san/documentation.html>.

## Microsoft Windows operating system support

Multipath I/O (MPIO) is the ability to use more than one physical path to access a storage device, providing improved system reliability and availability through fault tolerance, load balancing of the I/O traffic, or both. In the case of storage management, for which the preservation of data is vital, MPIO provides extra support points that can protect against data loss or system failure. The introduction of Microsoft's MPIO delivers a standard and interoperable path for communication between storage products and Microsoft Windows Server.

The Microsoft Windows MPIO is designed to work in conjunction with HP device-specific modules (DSMs). MPIO does not work alone; it is designed to work in conjunction with an HP DSM which provides a software interface between MPIO and the hardware device.

## EVA3000 and EVA5000 systems

Secure Path for Windows 4.0C-7 SP1 will be maintained as a supported product on the current EVA3000 and EVA5000 storage arrays. However, future Secure Path releases will only contain new firmware or operating system upgrades and will not have new features or enhancements.

If you are not using Secure Path for Windows, then you can download Microsoft Windows MPIO Basic DSM free of charge from the HP Multi-Path Options website at <http://h18006.www1.hp.com/products/storage/software/multipathoptions/index.html>.

This Windows MPIO only provides basic failover functionality. Some of the limitations of the Windows MPIO Basic DSM include:

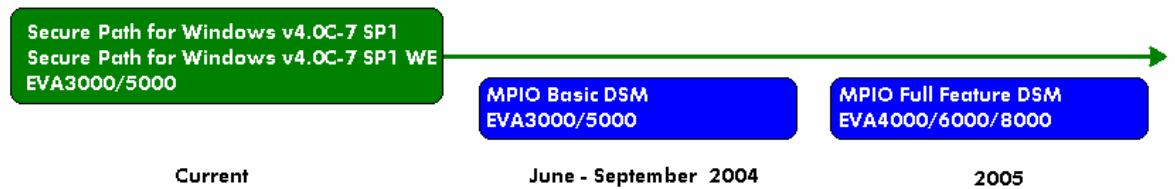
- No load balancing is supported in Microsoft Windows MPIO Basic DSM.
- The Microsoft Windows MPIO Basic DSM kits do not have a graphical user interface (GUI).
- A maximum of two HBAs per server is supported.
- All LUNs should be configured on all paths to the controllers on a disk array (for example, no selective configuration of LUNs on specific paths are supported).

## EVA4000, EVA6000, and EVA8000 systems

The Microsoft Windows MPIO Full Feature DSM is the multipathing specification from Microsoft that enables customers to utilize failover capabilities that are native to the Windows operating systems.

The initial release of the Windows MPIO Full Feature DSM will not contain support for cluster load balancing. This support will be added in the near future.

**Figure 1.** HP multipathing strategy for Microsoft Windows



Secure Path	MPIO basic	MPIO full-featured
Up to 8 HBAs supported per host	2 HBAs supported per host	8 HBAs supported per host
Max 32 paths on EVA	Max 4 paths on EVA DSM	Max 32 paths on EVA DSM
GUI, Web-based, SAN view	No user interface	GUI, MMC Snap-In, server view
Auto failback	No failback but bidirectional failover	Auto failback
Static and dynamic load balancing	No load balancing	Static and dynamic load balancing
Command line interface (CLI)	No CLI	CLI

## HP-UX operating system support

The HP-UX operating system is a unique environment in that you have basic failover features today, but the current EVAs cannot take advantage of this native support. The next generation EVAs are designed to utilize PVLlinks to gain the native HP-UX failover features.

### EVA3000 and EVA5000 systems

Secure Path for HP-UX will be maintained as a supported product on the current EVA3000 and EVA5000 storage arrays. Support has been added to this product to allow its use with the next generation EVA4000, EVA6000, and EVA8000 storage arrays. At some point in the future, Secure Path will be replaced with full-featured multipathing support within the HP-UX operating system.

### EVA4000, EVA6000, and EVA8000 systems

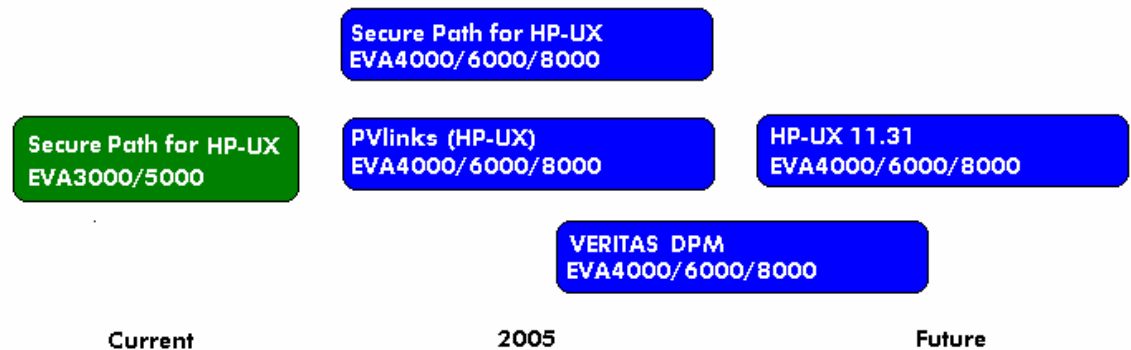
PVLlinks, which is a component of HP-UX, provides basic failover protection to the next generation EVA4000, EVA6000, and EVA8000 storage arrays.

Secure Path for HP-UX has added support to allow its use with the next generation EVA4000, EVA6000, and EVA8000 storage arrays.

Full-feature native multipath support will be included in a future release of HP-UX (HP-UX v11.31).

HP will support HP-UX installations that are already standardized on the VERITAS DMP failover solution in the near future. Customers can easily add an EVA4000, EVA6000, or EVA8000 into these environments.

**Figure 2.** HP multipathing strategy for HP-UX



## Linux operating system support

The Linux open source community has pushed for open source multipath products. Understanding this desire, HP has formed a strategic alliance with QLogic to deliver the QLogic failover drivers that supports QLogic HBAs.

## EVA3000 and EVA5000 systems

Secure Path for Linux 3.0C SP1 will be maintained as a supported product on the current EVA3000 and EVA5000 storage arrays. However, future Secure Path releases will only contain new firmware or operating system upgrades and will not have new features or enhancements.

Secure Path for Linux does not support Linux kernel 2.6. Customers who want to utilize the Linux 2.6 kernel must migrate to the QLogic failover driver. To migrate from Secure Path for Linux to the QLogic failover driver, you must download and run the LUN Persistence and Migration Kit from the HP SecurePath for Linux website at <http://h18006.www1.hp.com/products/sanworks/secure-path/index.html>.

The QLogic failover driver is a driver that you can download from the HP Multi-Path Options website at <http://h18006.www1.hp.com/products/storage/software/multipathoptions/index.html>. There are two versions of this driver, depending on which version of the Linux kernel you have installed:

- QLogic Failover Driver 7—This open source driver supports QLogic HBAs and path failover capabilities for Linux kernel 2.4.
- QLogic Failover Driver 8—This open source driver supports QLogic HBAs and path failover capabilities for Linux kernel 2.6.

## EVA4000, EVA6000, and EVA8000 systems

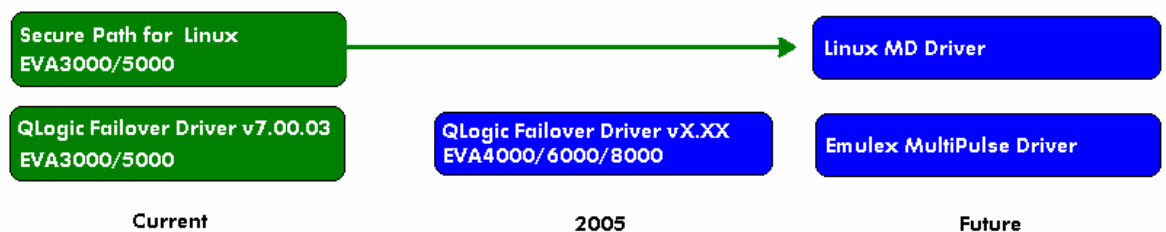
QLogic has added support for EVA4000, EVA6000, and EVA8000 storage arrays in the newest versions of the QLogic failover driver. These new drivers are available for download from the HP Multi-Path Options website at <http://h18006.www1.hp.com/products/storage/software/multipathoptions/index.html>. There are two versions of this driver, depending on which version of the Linux kernel you have installed:

- QLogic Failover Driver 7.X—This open source driver supports QLogic HBAs and path failover capabilities for Linux kernel 2.4.
- QLogic Failover Driver 8.X—This open source driver supports QLogic HBAs and path failover capabilities for Linux kernel 2.6.

**NOTE:** To migrate from Secure Path for Linux to the QLogic failover driver, you must download and run the LUN Persistence and Migration Kit from the HP Secure Path for Linux website at <http://h18006.www1.hp.com/products/sanworks/secure-path/index.html>.

Future opportunities for additional open source support include the multipath device (MD) driver and Emulex MultiPulse driver.

**Figure 3.** HP multipathing strategy for Linux





## Linux feature comparison

The following table compares the multipath features of Secure Path for Linux on the current EVA3000 and EVA5000 storage arrays with the QLogic failover driver on the next generation EVA4000, EVA6000, and EVA8000 storage arrays.

Features	Secure Path for Linux	QLogic failover driver
Multiple path (max per LUN)	32	8
<b>Adapter support</b>		
Single adapter	yes	yes
Max adapter per host—Qualified	16	16
Max adapter per host—Supported	sys lim	sys lim
Licensing (FlexLM)	no	no
<b>Configuration</b>		
Fibre Channel Arbitrated Loop	no	no
Fibre Channel Switched Fabric	yes	yes
Parallel SCSI	no	no
<b>Maximum number of LUNs</b>		
Number of LUNs per target	sys lim	256
Total number of LUNs per host	sys lim	sys lim
Transparent failover mode support	no	no
<b>Number of storage systems per host</b>		
Minimum	1	1
Maximum qualified	8	8
Maximum supported	128	128
<b>Management Interface</b>		
Path Mgt CLI	yes	no
Path Mgt GUI	no	XP/VA only
Web UI	no	no
<b>Event notification</b>		
SNMP	no	no
Syslog entry added for error tracking	yes	yes
E-mail notification	yes	no
<b>Boot from SAN</b>		
32-bit	no	yes
64-bit	no	no

Features	Secure Path for Linux	QLogic failover driver
<b>Storage system support</b>		
XP 48/512,XP128/1024 v01.19.26.00/00 v01.19.51.00/00; v21.08.05, 21.08.23	no	yes
VA7400/7100, VA7410/7110 va120	no	yes
HSV100/110 VCS 3.010	yes	yes
HSV100/110 VCS 3.020	yes	yes
MSA1000	yes	yes
MSA1500	no	no
HSG60/80 ACS 8.7	yes	no
Voyager EL /LP952	no	no
EMC Symmetric	no	no
IBM Shark	no	no
VersaStor	no	no
<b>Load balancing</b>		
Round robin	yes	no
Static	yes	yes
Least outstanding I/O	no	no
Least bandwidth	no	no
Cluster	no	no
<b>Path verification</b>		
Failed paths	yes	XP/VA only
Standby paths	yes	XP/VA only
All paths	yes	XP/VA only
LUN expansion (capacity change)	yes	yes
<b>Add/delete without host reboot</b>		
Path	no	no
LUN	no	yes
RAID controller	no	yes
HBA	no	no
Storage system	no	no
Rolling upgrades	yes	?
Auto failback	yes	yes
Quiesce/remove paths	yes	no
Activate quiesced paths	yes	no

Features	Secure Path for Linux	QLogic failover driver
Select active paths for I/O	yes	XP/VA only
Select preferred paths	yes	XP/VA only
Restore preferred paths	yes	?
CA	yes	no
BC	no	no
SanSurfer	no	yes
Logical Volume Manager	yes	yes
Cluster	MC/SG 2-4	MC/SG 2-4
	Life Keeper 2-16	Life Keeper 2-4

## Sun Solaris operating system support

HP continues to support the Sun Solaris platform with new EVAs.

### EVA3000 and EVA5000 systems

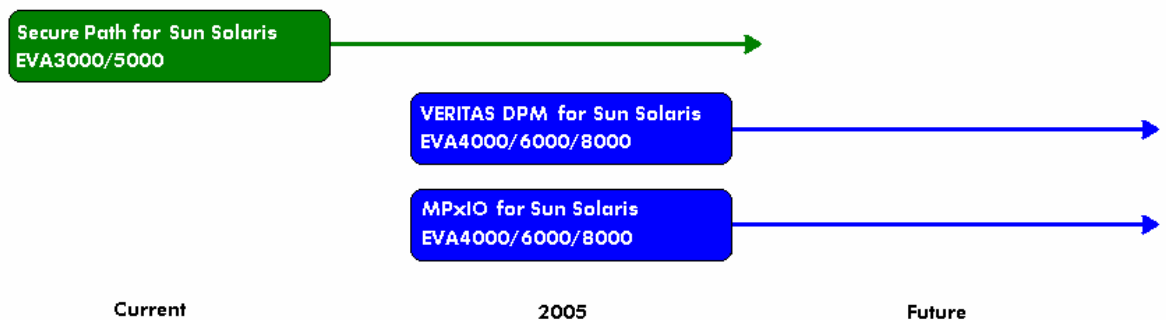
Secure Path for SUN Solaris 3.0D will be maintained as a supported product on the current EVA3000 and EVA5000 storage arrays. However, future Secure Path releases will only contain new firmware or operating system upgrades and will not have new features or enhancements.

### EVA4000, EVA6000, and EVA8000 systems

MPxIO for Sun Solaris is the multipathing specification from SUN that enables customers to utilize failover capabilities that are native to the Sun Solaris operating system.

HP will support Sun Solaris installations that are already standardized on the VERITAS DMP failover solution. Customers can easily add an EVA4000, EVA6000, or EVA8000 into these environments.

**Figure 4.** HP multipathing strategy for Sun Solaris



## Sun Solaris feature comparison

The following table compares the multipath features of Secure Path for Sun Solaris on the current EVA3000 and EVA5000 storage arrays with the MPxIO for Sun Solaris on the next generation EVA4000, EVA6000, and EVA8000 storage arrays.

Features	MPxIO for Sun Solaris	VERITAS DMP for Sun Solaris	Secure Path for Sun Solaris
Failover	x	x	x
SAN boot	x	x	
Syslog Msg	x	x	x
Add/Delete LUN w/o reboot			
path	x	x	x
LUN	x	x	x
RAID controller	x	x	
HBA (pre-existing)	x	x	x
HBA (new to sxstem)			
storage sxstem	x	x	
Autorestore		x	x
Preferred path (per lun)		x	x
Load Balancing			
Least I/O		x	x
Round Robin	x	x	x
least bandwidth		x	x
Cluster (across servers)		x	x
co-existence			
same adapter	w/ MPxIO/XP	w/ Ver/XP	
same server	x	x	x
same cluster			
AA	x	x	
Rolling Upgrades	x	x	x
<b>CLI</b>			
Display w/ Options	x	x	x
Add/Delete			
path	x	x	x
LUN	x	x	x
RAID controller	x	x	

Features	MPxIO for Sun Solaris	VERITAS DMP for Sun Solaris	Secure Path for Sun Solaris
HBA (pre-existing)	x	x	x
HBA (new to system)			
storage system	x	x	
Load Balancing	x	x	x
Autorestore		x	x
Path Preference		x	x
Email Notification		x	x
Path Verification	x	x	x
Path frequency		x	x
Manual Restore		x	x
Selecting Path		x	x
Quiesce		x	x
Preserves configuration w/reboot	x	x	x
aliases			x
Logging	x	x	x
<b>GUI</b>			
Display w/ Options		x	
Add/Delete			
path		x	
LUN		x	
RAID controller		x	
HBA (pre-existing)		x	
HBA (new to system)			
storage system		x	
Load Balancing		x	
Autorestore		x	
Path Preference		x	
Email Notification		x	
Path Verification		x	
Path frequency		x	
Manual Restore		x	
Selecting Path		x	
Quiesce		x	

Features	MPxIO for Sun Solaris	VERITAS DMP for Sun Solaris	Secure Path for Sun Solaris
Preserves configuration w/reboot aliases		x	
Logging		x	
CA	x	x	
BC	x	x	

## IBM AIX operating system support

HP continues to support the IBM AIX platform with new EVAs.

### EVA3000 and EVA5000 systems

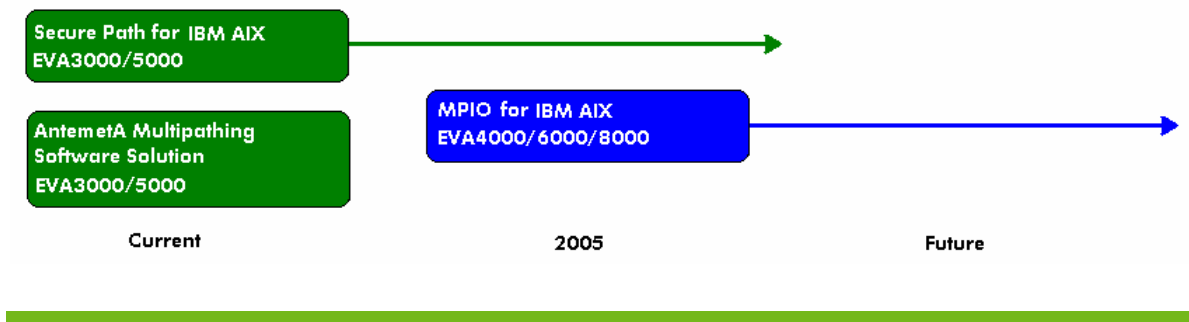
Secure Path for IBM AIX 2.0D SPx will be maintained as a supported product on the current EVA3000 and EVA5000 storage arrays. However, future Secure Path releases will only contain new firmware or operating system upgrades and will not have new features or enhancements.

AntemetA Multi-pathing Software Solution is available today to support connections to native IBM HBAs for the EVA3000 and EVA5000 only.

### EVA4000, EVA6000, and EVA8000 systems

MPIO for IBM AIX is the multipathing specification from IBM that enables customers to utilize failover capabilities that are native to the IBM AIX operating system.

**Figure 5.** HP multipathing strategy for IBM AIX



## IBM AIX feature comparison

The following table compares the multipath features of Secure Path for IBM AIX and AntemetA on the current EVA3000 and EVA5000 storage arrays with the MPIO for IBM AIX on the next generation EVA4000, EVA6000, and EVA8000 storage arrays.

Features	MPIO for IBM AIX EVA4000/6000/8000	AntemetA EVA3000/EVA5000	Secure Path for IBM AIX EVA3000/EVA5000
Failover	x	x	x
SAN boot	x	x	
Syslog Msg	x	x	x
Static load balancing	x (manual)	x(manual)	x(manual)
Add/delete LUN without reboot	x	x	x
Path	x	x	x
LUN	x	x	x
RAID controller	x	x	x
HBA	x	x	x
Storage system	x	x	x
Autorestore	x		x
Preferred path			x
<b>Load balancing</b>			
Least I/O			
Round robin			
Least bandwidth			
Cluster			
<b>Coexistence</b>			
Same adapter	w/ MPIO/XP		
Same server	w/Cambex & w/MPIO XP		w/MPIO/XL/XP
Same cluster			
AA	x		
Rolling upgrades	x		
<b>GUI</b>			
Display with options	x	x	
Add/delete	x	x	x
Load balancing			
Autorestore	x	x	
Path preference			x
E-mail notification (with			

Features	MPIO for IBM AIX EVA4000/6000/8000	AntemetA EVA3000/EVA5000	Secure Path for IBM AIX EVA3000/EVA5000
SNMP)			
Path verification	x		x
Path frequency	x		
Manual restore	x	x	
Selecting path	x	x	x
Quiesce	x		
Preserves configuration with reboot	x	x	
Logging		x	x
<b>CLI</b>			
Display with options	x	x	
Add/delete	x	x	x
Load balancing			
Autorestore	x	x	
Path Preference		x	x
E-mail notification		x	
Path verification	x		x
Path frequency	x		
Manual restore	x	x	
Selecting path	x	x	
Quiesce	x		
Preserves configuration with reboot	x	x	
Aliases			
Logging		x	x
CA	x	x	x
BC	x		x



# Novell NetWare operating system support

HP continues to support the Novell NetWare platform with new EVAs.

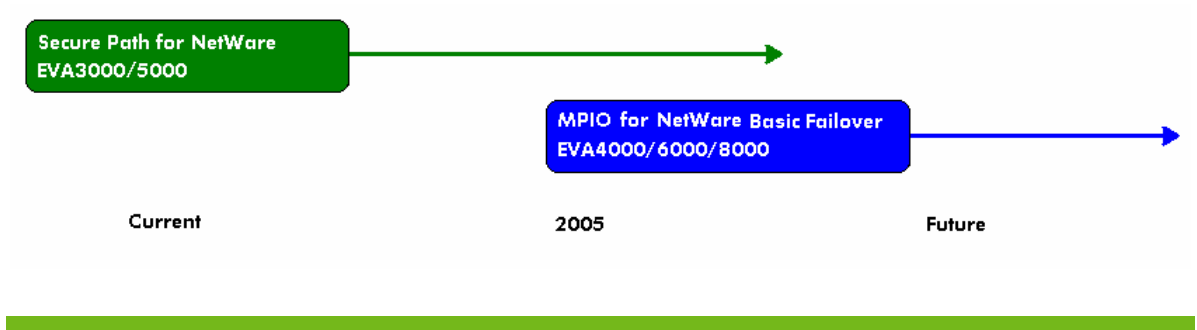
## EVA3000 and EVA5000 systems

Secure Path for Netware V3.0C will be maintained as a supported product on the current EVA3000 and EVA5000 storage arrays. However, future Secure Path releases will only contain new firmware or operating system upgrades and will not have new features or enhancements.

## EVA4000, EVA6000, EVA8000 systems

Novell NetWare MPIO is the multipathing specification from Novell that enables customers to utilize failover capabilities that are native to the Novell NetWare operating system. This will not be available at the time of EVA4000, EVA6000, and EVA8000 launch, but it will be available shortly after.

**Figure 6.** HP multipathing strategy for Novell NetWare



## For more information

Refer to the Other Multi-Path Options for HP Arrays website at <http://h18006.www1.hp.com/products/storage/software/multipathoptions/index.html>.

For information on the next generation EVA4000, EVA6000, and EVA8000 systems, refer to the following websites:

- <http://www.hp.com/go/eva4000>
- <http://www.hp.com/go/eva6000>
- <http://www.hp.com/go/eva8000>

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