

# IBM System Storage™ DS4000 Interoperability Matrix

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## **Important Disclaimer Information:**

The following compatibility/interoperability information provided by IBM should be used as a reference guide only, because hardware and software levels and releases may vary, and numerous hardware and software combinations are possible. IBM makes no representation or guarantee regarding the compatibility of specific hardware or software products.

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To take full advantage of the constant improvements in the DS4000 code and firmware, you should upgrade to the latest code levels as soon as it is available. This is recommended, to ensure current and comprehensive DS4000 support. Ongoing support for operating systems and software is at the major version level and sub-release noted, plus the next most recent supported sub-release within the major version level noted.

The latest code levels are available by selecting the Product Support link from the appropriate DS4000 model page at:  
<http://www-1.ibm.com/servers/storage/disk/ds4000/index.html>

## **Special Note For the DS4000 Interoperability Matrix:**

This version of the DS4000 Interoperability file will be sunsetting, please begin to use and familiarize yourself with the System Storage Interoperation Center (SSIC):

<http://www-01.ibm.com/systems/support/storage/config/ssic/index.jsp>

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## DS4800 - Models 80A/H, 82A/H, 84A/H, and 88A/H Supported Operating Systems with Expansion Units\*

	IBM xSeries	Intel & AMD IBM BladeCenter	Power IBM BladeCenter	IBM pSeries	HP ProLiant (Netserver)	HP Integrity	Dell PowerEdge	HP 9000 (PA- RISC)	Sun Fire & Netra (SPARC)	Notes	EXP810, EXP710 <sup>4</sup> and EXP100
Windows Server 2003 w/SP2 R2, and x64	✓	✓			✓	✓	✓			1	✓
Windows 2000 Server & Adv.Server w/SP4	✓	✓			✓		✓				✓
Novell NetWare 6.5 w/SP6	✓	✓			✓		✓				✓
Red Hat Enterprise Linux 3.8	✓	✓	✓	✓	✓	✓	✓			5	✓
Red Hat Enterprise Linux 4.4	✓	✓	✓	✓	✓	✓	✓			5	✓
SuSE Linux Enterprise Server 9 SP3	✓	✓	✓	✓	✓	✓	✓			5	✓
SuSE Linux Enterprise Server 10	✓	✓	✓	✓	✓	✓	✓			5	✓
VMWare ESX 2.5.3, and 3.0.1	✓	✓			✓		✓			2	✓
AIX 5.1, 5.2, 5.3			✓ <sup>3,1</sup>	✓						3,2, 5	✓
HP-UX 11.11i and 11.23 with PVLinks								✓		7	✓
Solaris 8, 9, 10									✓	6	✓

\* - This chart includes the following DS4000 series with DS4000 Storage Manager (SM) levels:

DS4800 Models 80A/H, 82A/H, 84A/H, 88A/H - SMv9.23 with firmware 06.23 or later, supports attachment of EXP810, EXP710, and EXP100 expansion units, as well as supports intermix of both Fibre Channel and/or SATA drives within EXP810 expansion units. Note, "Intermix Activation" feature must be applied when DS4800 disk array system includes both Fibre Channel and SATA disk drives types, within the combination of attached EXP810, EXP710, EXP100 expansion units.

### Footnotes:

1. Microsoft Windows Server 2003 w/SP2 R2, and x64 – Enterprise, Standard, Web, and Storage Server editions, 32bit and 64bit versions of the operating system (see chart on page 14, section DS4000 with Storage Manager - Intel/AMD Hardware Platform & Operating System Support, for details regarding 32bit and 64bit versions of supported server hardware).
2. Windows guests using MSCS or VMotion (but not guests using MSCS and VMotion concurrently) are supported with VMware ESX 2.5.3 and 3.0.1. ( ESX 3.0 supports 4Gb FC speeds ) ESX Server Clusters support applies to Windows 2000, its service packs, and Windows 2003 RTM, but not Windows 2003 SP1. Please refer to KB article 2021 for the latest information.  
[http://kb.vmware.com/vmtknk/search.do?cmd=displayKC&docType=kc&externalId=2021&sliceId=SAL\\_Public](http://kb.vmware.com/vmtknk/search.do?cmd=displayKC&docType=kc&externalId=2021&sliceId=SAL_Public)
3. Note 3.1 - BladeCenter JS20 support with AIX 5.2 and 5.3. Note 3.2 - AIX 5.1, 5.2, 5.3 supported within AIX Partition (LPAR) hosted on i5 iSeries servers.
4. When a EXP700 is upgraded with fc#3501 or pn:25R0166, it is supported in the same manner as a EXP710,
5. pSeries support for AIX and LoP also includes an AIX or LoP partition on an i5 iSeries server.
6. Veritas DMP and Sun's MPXIO multipathing driver are supported with Solaris 8,9,10.
7. Support for HP-Itanium based servers with HP-UX 11.23 may be requested via RPQ process.

### General Notes:

- When running a mix of expansion chassis', like expansions should be grouped together, and 810's next to 710's when possible. Please refer to the README files for additional configuration details, limitations, and "Installation User's and Maintenance Guide" found at:  
<http://www-03.ibm.com/servers/storage/disk/ds4000/ds4800/index.html>
- Support based on Minimum Server Requirements, shown later in this document.
- Refer to Storage Manager Operating System Support & Advanced Features page, shown later in this document, for additional details.
- pSeries support includes Open Power series servers.
- Intel and AMD support includes servers manufactured by Sun.
- GPFS and HACMP are supported on DS4800 model controllers, with supported expansion and drives.

## DS4700 - Models 70A/H and 72A/H

### Supported Operating Systems with Expansion Units\*

	IBM xSeries	Intel & AMD IBM BladeCenter	Power IBM BladeCenter	IBM pSeries	HP ProLiant (Netserver)	HP Integrity	Dell PowerEdge	HP 9000 (PA- RISC)	Sun Fire & Netra (SPRAC)	Notes	EXP810, EXP710 <sup>3</sup> and EXP100
Windows Server 2003 w/SP2 R2, and x64	✓	✓			✓	✓	✓			1	✓
Windows 2000 Server & Adv. Server w/SP4	✓	✓			✓		✓				✓
Novell NetWare 6.5 w/SP6	✓	✓			✓		✓				✓
Red Hat Enterprise Linux 3.8	✓	✓	✓	✓	✓	✓	✓			4	✓
Red Hat Enterprise Linux 4.4	✓	✓	✓	✓	✓	✓	✓			4	✓
SuSE Linux Enterprise Server 9 SP3	✓	✓	✓	✓	✓	✓	✓			4	✓
SuSE Linux Enterprise Server 10	✓	✓	✓	✓	✓	✓	✓			4	✓
VMWare ESX 2.5.3 and 3.0.1	✓	✓			✓		✓			7	✓
AIX 5.1, 5.2, 5.3			✓ <sup>2,1</sup>	✓						2.2, 4	✓
HP-UX 11.11i and 11.23 with PVLinks								✓		6	✓
Solaris 8, 9, 10									✓	5	✓

\* - This chart includes the following DS4000 series with DS4000 Storage Manager (SM) levels:

DS4700 - SMv9.23 with firmware 06.23 or later, supports attachment of EXP810, EXP710, and EXP100 expansion units, as well as supports intermix of both Fibre Channel and/or SATA drives within DS4700 and/or within EXP810 expansion units.

Note, "Intermix Activation" feature must be applied when DS4700 disk array system includes both Fibre Channel and SATA disk drive types, within the combination of DS4700 and attached EXP810, EXP710, EXP100 expansion units.

#### Footnotes:

1. Microsoft Windows Server 2003 w/SP2 R2, x64 – Enterprise, Standard, Web, and Storage Server editions, 32bit and 64bit versions of the operating system (see chart on page 14, section DS4000 with Storage Manager - Intel/AMD Hardware Platform & Operating System Support, for details regarding 32bit and 64bit versions of supported server hardware).
2. Note 2.1 - BladeCenter JS20 support with AIX 5.2 and 5.3. Note 2.2 - AIX 5.1, 5.2, 5.3 supported within AIX Partition (LPAR) hosted on i5 iSeries servers.
3. When a EXP700 is upgraded with fc#3501 or pn:25R0166, it is supported in the same manner as a EXP710.
4. pSeries support for AIX and LoP also includes an AIX or LoP partition on an i5 iSeries server.
5. Veritas DMP and Sun's MPXIO multipathing driver are supported with Solaris 8,9,10.
6. Support for HP-Itanium based servers with HP-UX 11.23 may be requested via RPQ process.
7. Windows guests using MSCS or VMotion (but not guests using MSCS and VMotion concurrently) are supported with VMware ESX 2.5.3 and 3.0.1. ( ESX 3.0 supports 4Gb FC speeds )  
ESX Server Clusters support applies to Windows 2000, its service packs, and Windows 2003 RTM, but not Windows 2003 SP1. Please refer to KB article 2021 for the latest information.  
[http://kb.vmware.com/vmtknkb/search.do?cmd=displayKC&docType=kc&externalId=2021&sliceId=SAL\\_Public](http://kb.vmware.com/vmtknkb/search.do?cmd=displayKC&docType=kc&externalId=2021&sliceId=SAL_Public)

#### General Notes:

- When running a mix of expansion chassis', like expansions should be grouped together, and 810's next to 710's when possible. Please refer to the README files for additional configuration details, limitations, and "Installation User's and Maintenance Guide" found at:  
<http://www-03.ibm.com/servers/storage/disk/ds4000/ds4700/index.html>
- Support based on Minimum Server Requirements, shown later in this document.
- Refer to Storage Manager Operating System Support & Advanced Features page, shown later in this document, for additional details.
- pSeries support includes Open Power series servers.
- Intel and AMD support includes servers manufactured by Sun.
- GPFS and HACMP are supported on DS4700 model controllers, with supported expansion and drives.

## DS4200 - Models 7VA/H and 7VA/H

### Supported Operating Systems with Expansion Units\*

	IBM xSeries	Intel & AMD IBM BladeCenter	Power IBM BladeCenter	IBM pSeries	HP ProLiant (Netserver)	HP Integrity	Dell PowerEdge	HP 9000 (PA- RISC)	Sun Fire & Netra (SPARC)	Notes	EXP420 Only
Windows Server 2003 w/SP2 R2, and x64	✓	✓			✓	✓	✓			1	✓
Windows 2000 Server & Adv.Server w/SP4	✓	✓			✓		✓				✓
Novell NetWare 6.5 w/SP6	✓	✓			✓		✓				✓
Red Hat Enterprise Linux 3.8	✓	✓	✓	✓	✓	✓	✓			3	✓
Red Hat Enterprise Linux 4.4	✓	✓	✓	✓	✓	✓	✓			3	✓
SuSE Linux Enterprise Server 9 SP3	✓	✓	✓	✓	✓	✓	✓			3	✓
SuSE Linux Enterprise Server 10	✓	✓	✓	✓	✓	✓	✓			3	✓
VMWare ESX 2.5.3 and 3.0.1	✓	✓			✓		✓			6	✓
AIX 5.1, 5.2, 5.3			✓ <sup>2.1</sup>	✓						2.2, 3	✓
HP-UX 11.11i and 11.23 with PVLinks								✓		5	✓
Solaris 8, 9, 10									✓	4	✓

\* - This chart includes the following DS4000 series with DS4000 Storage Manager (SM) levels:

DS4200 - SMv9.23 with firmware 06.23 or later.

Note - DS4200 only supports attachment to EXP420.

Note - Both DS4200 and EXP420 only use "DS4200 500GB and/or 750GB SATA EV-DDM" drives.

Note - DS4200 with EXP420 and "DS4200 500GB and/or 750GB SATA EV-DDM" provides SATA-Only Value Solution.

#### Footnotes:

1. Microsoft Windows Server 2003 w/SP2 R2, x64 – Enterprise, Standard, Web, and Storage Server editions, 32bit and 64bit versions of the operating system (see chart on page 14, section DS4000 with Storage Manager - Intel/AMD Hardware Platform & Operating System Support, for details regarding 32bit and 64bit versions of supported server hardware).
2. Note 2.1 - BladeCenter JS20 support with AIX 5.2 and 5.3. Note 2.2 - AIX 5.1, 5.2, 5.3 supported within AIX Partition (LPAR) hosted on i5 iSeries servers.
3. pSeries support for AIX and LoP also includes an AIX or LoP partition on an i5 iSeries server.
4. Veritas DMP and Sun's MPXIO multipathing driver are supported with Solaris 8,9,10.
5. Support for HP-Itanium based servers with HP-UX 11.23 may be requested via RPQ process.
6. Windows guests using MSCS or VMotion (but not guests using MSCS and VMotion concurrently) are supported with VMware ESX 2.5.3 and 3.0.1. ( ESX 3.0 supports 4Gb FC speeds )  
ESX Server Clusters support applies to Windows 2000, its service packs, and Windows 2003 RTM, but not Windows 2003 SP1. Please refer to KB article 2021 for the latest information.  
[http://kb.vmware.com/vmtknkb/search.do?cmd=displayKC&docType=kc&externalId=2021&sliceId=SAL\\_Public](http://kb.vmware.com/vmtknkb/search.do?cmd=displayKC&docType=kc&externalId=2021&sliceId=SAL_Public)

#### General Notes:

- When running a mix of expansion chassis', like expansions should be grouped together, and 810's next to 710's when possible. Please refer to the README files for additional configuration details, limitations, and "Installation User's and Maintenance Guide" found at:  
<http://www-03.ibm.com/servers/storage/disk/ds4000/ds4200/index.html>
- Support based on Minimum Server Requirements, shown later in this document.
- Refer to Storage Manager Operating System Support & Advanced Features page, shown later in this document, for additional details.
- pSeries support includes Open Power series servers.
- Intel and AMD support includes servers manufactured by Sun.
- GPFS and HACMP are supported on DS4200 model controllers, with supported expansion and drives.

## DS4300 - Models (FASTT600) Dual / Single Controller, and DS4300 with Turbo Supported Operating Systems with Expansion Units\*

	IBM xSeries	Intel & AMD BladeCenter	IBM Power BladeCenter	IBM pSeries	HP ProLiant (Netserver)	HP Integrity	Dell PowerEdge	HP 9000 (PA- RISC)	Sun Fire & Netra (SPRAC)	Notes	EXP810, EXP710 and EXP100 <sup>4,5</sup>
Windows Server 2003 w/SP2 R2, and x64	✓	✓			✓	✓	✓			1	✓
Windows 2000 Server & Adv. Server w/SP4	✓	✓			✓		✓				✓
Novell NetWare 6.5 w/SP6	✓	✓			✓		✓				✓
Red Hat Enterprise Linux 3.8	✓	✓	✓	✓	✓	✓	✓				✓
Red Hat Enterprise Linux 4.4	✓	✓	✓	✓	✓	✓	✓				✓
SuSE Linux Enterprise Server 9 SP3	✓	✓	✓	✓	✓	✓	✓				✓
SuSE Linux Enterprise Server 10	✓	✓	✓	✓	✓	✓	✓				✓
VMWare ESX 2.5.3 and 3.0.1 (DS4300 Dual Controller or Turbo)	✓	✓			✓		✓			2	✓
AIX 5.1, 5.2, 5.3 (DS4300 Dual Controller or Turbo)			✓ <sup>3.1</sup>	✓						3.2	✓
HP-UX 11.11i and 11.23 with PVLinks								✓		7	✓
Solaris 8, 9, 10									✓	6	✓

\* - This chart includes the following DS4000 series with DS4000 Storage Manager (SM) levels:

- DS4300 (single controller) – SMv9.23 (firmware level 05.34)
- DS4300 (dual controller) – SMv9.23 (firmware level 06.23)
- DS4300 with Turbo – SMv9.23 (firmware level 06.23)

DS4300 Dual and Turbo with FW 06.23 supports attachment of EXP810, EXP710, and EXP100 expansion units, as well as supports intermix of both Fibre Channel and/or SATA drives within EXP810 expansion units.

Note, "Intermix Activation" feature must be applied when DS4300 disk array system includes both Fibre Channel and SATA disk drive types, within the combination of DS4300 and attached EXP810, EXP710, EXP100 expansion units.

### Footnotes:

- Microsoft Windows Server 2003 w/SP2 R2 and x64 – Enterprise, Standard, Web, and Storage Server editions, 32bit and 64bit versions of the operating system (see chart on page 14, section DS4000 with Storage Manager - Intel/AMD Hardware Platform & Operating System Support, for details regarding 32bit and 64bit versions of supported server hardware).
- Windows guests using MSCS or VMotion (but not guests using MSCS and VMotion concurrently) are supported with VMware ESX 2.5.3 and 3.0.1. (ESX 3.0 supports 4Gb FC speeds)  
ESX Server Clusters support applies to Windows 2000, its service packs, and Windows 2003 RTM, but not Windows 2003 SP1. Please refer to KB article 2021 for the latest information.  
[http://kb.vmware.com/vmtknkb/search.do?cmd=displayKC&docType=kc&externalId=2021&sliceId=SAL\\_Public](http://kb.vmware.com/vmtknkb/search.do?cmd=displayKC&docType=kc&externalId=2021&sliceId=SAL_Public)
- Note 3.1 - BladeCenter JS20 support with AIX 5.2 and 5.3. Note 3.2 - AIX 5.1, 5.2, 5.3 supported within AIX Partition (LPAR) hosted on i5 iSeries servers.
- When a EXP700 is upgraded with fc#3501 or pn:25R0166, it is supported in the same manner as a EXP710. Also, when attaching EXP100s to the DS4300 dual controller, the optional FC/SATA Enclosure Intermix feature is required to use fibre channel disks within the DS4300 enclosure, and to attach EXP710 and EXP700 enclosures. Firmware level 06.12 or later is required.
- DS4000 EXP expansion units can not attach to single controller DS4300 without the upgrade to dual or Turbo.
- Veritas DMP and Sun's MPXIO multipathing driver are supported with Solaris 8,9,10.
- Support for HP-Itanium based servers with HP-UX 11.23 may be requested via RPQ process.

### General Notes:

- When running a mix of expansion chassis', like expansions should be grouped together, and 810's next to 710's when possible. Please refer to the README files for additional configuration details, limitations, and "Installation User's and Maintenance Guide" found at:  
<http://www-03.ibm.com/servers/storage/disk/ds4000/ds4300/index.html>
- Support based on Minimum Server Requirements, shown later in this document.
- Refer to Storage Manager Operating System Support & Advanced Features page, shown later in this document, for additional details.
- pSeries support includes Open Power series servers.
- Intel and AMD support includes servers manufactured by Sun.
- GPFS and HACMP are supported on DS4300 model controllers, with supported expansion and drives.

## DS4500 - Models (FAST900)

### Supported Operating Systems with Expansion Units\*

	IBM xSeries	Intel & AMD IBM BladeCenter	Power IBM BladeCenter	IBM pSeries	HP ProLiant (Netserver)	HP Integrity	Dell PowerEdge	HP 9000 (PA- RISC)	Sun Fire & Netra (SPARC)	Notes	EXP500 <sup>1</sup>	EXP810, EXP710, & EXP100 <sup>4</sup>
Windows Server 2003 w/SP2 R2 and x64	✓	✓			✓	✓	✓			<sup>1</sup>	✓	✓
Windows 2000 Server & Adv.Server w/SP4	✓	✓			✓		✓				✓	✓
Novell NetWare 6.5 w/SP6	✓	✓			✓		✓				✓	✓
Red Hat Enterprise Linux 3.8	✓	✓	✓	✓	✓	✓	✓				✓	✓
Red Hat Enterprise Linux 4.4	✓	✓	✓	✓	✓	✓	✓				✓	
SuSE Linux Enterprise Server 9 SP3	✓	✓	✓	✓	✓	✓	✓				✓	✓
SuSE Linux Enterprise Server 10	✓	✓	✓	✓	✓	✓	✓				✓	✓
VMWare ESX 2.5.3 and 3.0.1	✓	✓			✓		✓			<sup>2</sup>	✓	✓
AIX 5.1, 5.2, 5.3			✓ <sup>3.1</sup>	✓						<sup>3.2</sup>	✓	✓
HP-UX 11.11i and 11.23 with PVLinks								✓		<sup>6</sup>	✓	✓
Solaris 8, 9, 10									✓	<sup>5</sup>	✓	✓

\* - This chart includes the following DS4000 series with DS4000 Storage Manager (SM) levels:

DS4500 - SMv9.23 with firmware level = 06.23, supports attachment of EXP810, EXP710, and EXP100 expansion units, as well as supports intermix of both Fibre Channel and/or SATA drives within EXP810 expansion units. Note, "Intermix Activation" feature must be applied when DS4500 disk array system includes both Fibre Channel and SATA disk drives types, within the combination of attached EXP810, EXP710, EXP100 expansion units.

#### Footnotes:

1. Microsoft Windows Server 2003 w/SP2 R2 and x64 – Enterprise, Standard, Web, and Storage Server editions, 32bit and 64bit versions of the operating system (see chart on page 14, section DS4000 with Storage Manager - Intel/AMD Hardware Platform & Operating System Support, for details regarding 32bit and 64bit versions of supported server hardware).
2. Windows guests using MSCS or VMotion (but not guests using MSCS and VMotion concurrently) are supported with VMware ESX 2.5.3 and 3.0.1. ( ESX 3.0 supports 4Gb FC speeds )  
ESX Server Clusters support applies to Windows 2000, its service packs, and Windows 2003 RTM, but not Windows 2003 SP1. Please refer to KB article 2021 for the latest information.  
[http://kb.vmware.com/vmtknkb/search.do?cmd=displayKC&docType=kc&externalId=2021&sliceId=SAL\\_Public](http://kb.vmware.com/vmtknkb/search.do?cmd=displayKC&docType=kc&externalId=2021&sliceId=SAL_Public)
3. Note 3.1 - BladeCenter JS20 support with AIX 5.2 and 5.3. Note 3.2 - AIX 5.1, 5.2, 5.3 supported within AIX Partition (LPAR) hosted on i5 iSeries servers.
4. When a EXP700 is upgraded with fc#3501 or pn:25R0166, it is supported in the same manner as a EXP710. Also, when attaching both EXP700 and EXP500 to the same DS4500 or DS4400 (FAST900/700), the EXP700 must be set to 1Gb mode. When attaching both EXP710/700 and EXP100 to the DS4500 or DS4400, firmware level 06.10 or later and the optional FC/SATA Enclosure Intermix feature is required with the enclosures set to 2Gb mode. EXP500 can not be used when connecting EXP100, or EXP710.
5. Veritas DMP and Sun's MPXIO multipathing driver are supported with Solaris 8,9,10.
6. Support for HP-Itanium based servers with HP-UX 11.23 may be requested via RPQ process.

#### General Notes:

- When running a mix of expansion chassis', like expansions should be grouped together, and 810's next to 710's when possible. Please refer to the README files for additional configuration details, limitations, and "Installation User's and Maintenance Guide" found at:  
<http://www-03.ibm.com/servers/storage/disk/ds4000/ds4500/index.html>
- Support based on Minimum Server Requirements, shown later in this document.
- Refer to Storage Manager Operating System Support & Advanced Features page, shown later in this document, for
- pSeries support includes Open Power series servers.
- Intel and AMD support includes servers manufactured by Sun.
- GPFS and HACMP are supported on DS4500 model controllers, with supported expansion and drives.



For online DS4000 interoperability information please go to <http://www-01.ibm.com/systems/support/storage/config/ssic/index.jsp>

## Supported HBAs - DS4800, DS4700, DS4200, DS4500, and DS4400

	IBM xSeries	IBM BladeCenter	IBM pSeries	HP Proliant (Netserver)	HP Integrity	Dell PowerEdge	HP 9000 (PA-RISC)	Sun Fire & Netra (SPARC)
IBM FC - 00N6881/fc#2102	✓			✓	✓	✓		
IBM FC2/66-19K1246/fc#2103	✓			✓	✓	✓		
IBM FC2/133-24P0960/fc#2104	✓			✓	✓	✓		
IBM FC 4Gbps PCI-X Single Port HBA (39M5894/fc#2105) and Dual Port HBA (39M5895/fc#2106)	✓			✓	✓	✓		
IBM 2Gb QLogic Blade Exp Cards 48P7061, 13N2203 (std) 26K4841 (Sff), 73P6113 (JSx only)		✓						
IBM 4Gb QLogic Blade Exp Cards 26R0884 (std), 26R0890 (sff), 41Y8527 (cfffv)		✓						
Emulex 2Gb Blade Exp Card LP1005DC		✓						
IBM 4Gb Emulex Blade Exp Cards 39Y9186 (sff)		✓						
IBM QLogic 4Gb FC/Gb Enet Combo CFFh Exp Card (39Y9306) note, requires RPQ for support.		✓						
IBM pSeries fc#6227/6228			✓					
IBM pSeries fc#6239			✓					
IBM pSeries fc#5716, 1957, 1977			✓					
IBM pSeries fc#1905, 5758, 1910, 5759			✓					
IBM pSeries fc# 5773, 5774 - 4 Gigabit PCI-E Single & Dual FC HBA - System p 570 server with POWER6™ dual-core processors			✓ <sup>4</sup>					
HP D8602B				✓				
HP A3740, A5158A							✓	
HP A3591B, A6795A, A6826A							✓	
JNI FCE-6410, FCE-6460, FCE2-6412								✓ <sup>3</sup>
JNI FCX-6562, FCX2-6562,								✓ <sup>3</sup>
JNI FCC-6562, FCC2-6562								✓ <sup>3</sup>
Qlogic QLA2200F <sup>1</sup>	✓			✓	✓	✓		
Qlogic QLA2300F <sup>2</sup>	✓			✓	✓	✓		✓
Qlogic QLA2310F <sup>2</sup>	✓			✓	✓	✓		✓
Qlogic QLA2340 and QLA2342L <sup>2</sup>	✓			✓	✓	✓		✓
Qlogic QLA2460, QLA2462 Single and Dual Port HBAs <sup>2</sup>	✓			✓	✓	✓		
IBM 39R6525 (QLE2460) note, requires RPQ for support	✓							
IBM 39R6527 (QLE2462) note, requires RPQ for support.	✓							
Emulex LP9002, LP9402, LP9802, LP10000, LP1050	✓			✓	✓	✓		✓
Emulex LP11000, LP11002	✓			✓	✓	✓		
Emulex LPE11000, LPE11002	✓				✓	✓		
IBM 42C2069 (LPE11000) note, requires RPQ for support.	✓							
IBM 42C2071 (LPE11002) note, requires RPQ for support.	✓							
IBM 42D0405 (LP11000)	✓							
IBM 42D0407 (LP11002)	✓							
Sun SG-XPCI2FC-QF2 (QLA2342)								✓
Sun SG-XPCI2FC-QF4 (QLA2462)								✓
Sun SG-XPCIE2FC-QF4 (QLE2462)								✓
Sun SG-XPCI1FC-EM2 (LP10000-S)								✓
Sun SG-XPCI2FC-EM2 (LP10000DC-S)								✓

### Footnotes:

1. Qlogic adapters are only supported if used in conjunction with IBM FASTt BIOS and Device Driver, plus the QLA2202F is only supported in the IBM NAS 300G.
2. Qlogic adapters are only supported if used in conjunction with IBM FASTt FC-2/133 BIOS and Device Driver.
3. JNI adapters on SUN servers with Solaris 7, 8 and 9 only. JNI adapters are not supported on solaris 10.
4. System p 570 server with POWER6™ dual-core processors supported on AIX 5.2 & 5.3 RDAC, and supported on RHEL 4.5 RDAC (Note RHEL 4.5 RDAC is only supported on System p 570 server with POWER6, not on any other server type or platform).

### Note:

1Gb HBA will operate at 1Gb speed when attached to 2Gb devices. When attaching 1Gb HBAs directly to a 2Gb FASTt controller the ports on the DS4000 controller must be manually set to 1Gb to allow the HBA to see the DS4000 controller.

For information on configurations with IBM eServer BladeCenter refer to: <http://www-03.ibm.com/servers/eserver/serverproven/compat/us/>



## Supported HBAs - DS4300, DS4100 (dual / single ctrl), DS4300 w/Turbo

	IBM xSeries	IBM BladeCenter	IBM pSeries	HP Proliant (Netserver)	HP Integrity	Dell PowerEdge	HP 9000 (PA-RISC)	Sun Fire & Netra (SPARC)
IBM FC - 00N6881/fc#2102	✓			✓	✓	✓		
IBM FC2/66-19K1246/fc#2103	✓			✓	✓	✓		
IBM FC2/133-24P0960/fc#2104	✓			✓	✓	✓		
IBM FC 4Gbps PCI-X Single Port HBA (39M5894/fc#2105) and Dual Port HBA (39M5895/fc#2106)	✓			✓	✓	✓		
IBM 2Gb QLogic Blade Exp Cards 48P7061, 13N2203 (std) 26K4841 (Sff), 73P6113 (JSx only)		✓						
IBM 4Gb QLogic Blade Exp Cards 26R0884 (std), 26R0890 (sff), 41Y8527 (cfff)		✓						
Emulex 2Gb Blade Exp Card LP1005DC		✓						
IBM 4Gb Emulex Blade Exp Cards 39Y9186 (sff)		✓						
IBM QLogic 4Gb FC/Gb Enet Combo CFFh Exp Card (39Y9306) note, requires RPQ for support.		✓						
IBM pSeries fc#6227/6228			✓ <sup>5</sup>					
IBM pSeries fc#6239			✓ <sup>5</sup>					
IBM pSeries fc#5716, 1957, 1977			✓ <sup>5</sup>					
IBM pSeries fc#1905, 5758, 1910, 5759			✓ <sup>5</sup>					
IBM pSeries fc# 5773, 5774 - 4 Gigabit PCI-E Single & Dual FC HBA - System p 570 server with POWER6™ dual-core processors			✓ <sup>6</sup>					
HP A5158A							✓	
HP A6795A, A6826A							✓	
JNI FCE-6410, FCE-6460, FCE2-6412								✓ <sup>4</sup>
JNI FCX-6562, FCX2-6562,								✓ <sup>4</sup>
JNI FCC-6562, FCC2-6562								✓ <sup>4</sup>
Qlogic QLA2200F <sup>1,2</sup>	✓			✓	✓	✓		
Qlogic QLA2300F <sup>1,3</sup>	✓			✓	✓	✓		✓
Qlogic QLA2310F <sup>1,3</sup>	✓			✓	✓	✓		✓
Qlogic QLA2340 and QLA2342L <sup>1,3</sup>	✓			✓	✓	✓		✓
Qlogic QLA2460, QLA2462 Single and Dual Port HBAs <sup>1,3</sup>	✓			✓	✓	✓		
IBM 39R6525 (QLE2460) note, requires RPQ for support.	✓							
IBM 39R6527 (QLE2462) note, requires RPQ for support.	✓							
Emulex LP9002, LP9402, LP9802, LP10000, LP1050,	✓			✓	✓	✓		✓
Emulex LP11000, LP11002	✓			✓	✓	✓		
Emulex LPE11000, LPE11002	✓				✓	✓		
IBM 42C2069 (LPE11000) note, requires RPQ for support.	✓							
IBM 42C2071 (LPE11002) note, requires RPQ for support.	✓							
IBM 42D0405 (LP11000)	✓							
IBM 42D0407 (LP11002)	✓							
Sun SG-XPCI2FC-QF2 ( QLA2342 )								✓
Sun SG-XPCI2FC-QF4 ( QLA2462 )								✓
Sun SG-XPCIE2FC-QF4 ( QLE2462 )								✓
Sun SG-XPCI1FC-EM2 ( LP10000-S )								✓
Sun SG-XPCI2FC-EM2 ( LP10000DC-S )								✓

### Notes:

DS4300 (FASTt600, dual, single and Turbo) supports 1/2Gb host and fabric connections. The DS43000 dual and single controller models must be at firmware level 05.34 or later.

- Please refer to the README files for supported versions of these adapters and additional configuration details and limitations found at: <http://www-03.ibm.com/servers/storage/support/disk/ds4300/hbadrivers1.html>
- Qlogic adapters are only supported if used in conjunction with IBM FASTt BIOS and Device Driver.
- Qlogic adapters are only supported if used in conjunction with IBM FASTt FC-2/133 and IBM FC 4Gbps PCI-X BIOS and Device Drivers.
- JNI adapters on SUN servers with Solaris 7, 8 and 9 only. JNI adapters are not supported on solaris 10.
- pSeries/AIX support with single controller DS4300 model requires the upgrade to dual or Turbo; single controller DS4100 model is not supported.
- System p 570 server with POWER6™ dual-core processors supported on AIX 5.2 & 5.3 RDAC, and supported on RHEL 4.5 RDAC (Note RHEL 4.5 RDAC is only supported on System p 570 server with POWER6, not on any other server type or platform).

For information on configurations with IBM eServer BladeCenter refer to: <http://www-03.ibm.com/servers/eserver/serverproven/compat/us/>

## Supported SAN Fabrics, Routers, and Gateways <sup>2</sup>

	DS4100 (FAST100)	FAST200	DS4300 (FAST600)	FAST500	DS4400 (FAST700)	DS4500 (FAST900)	DS4200	DS4700	DS4800
<b>IBM System Storage SAN Switch</b>									
IBM System Storage SAN10Q-2 (6918-10X) 3	✓		✓			✓	✓	✓	✓
<b>IBM TotalStorage SAN Switches and Director</b>									
IBM 3534-F08	✓	✓	✓	✓	✓	✓	✓	✓	✓
IBM 2005-B16/B32/B64/B5K/H08/H16/R18	✓	✓	✓	✓	✓	✓	✓	✓	✓
IBM 2006L10	✓		✓			✓	✓	✓	✓
IBM 2109-F16/F32	✓	✓	✓	✓	✓	✓	✓	✓	✓
IBM 2109-S08/S16	✓	✓	✓	✓	✓	✓	✓	✓	✓
IBM 2109-M12/M14/M48	✓	✓	✓	✓	✓	✓	✓	✓	✓
IBM 2109-A16	✓		✓			✓	✓	✓	✓
<b>McDATA Switches and Directors</b>									
2026-416/432	✓	✓	✓	✓	✓	✓	✓	✓	✓
2027-140/256	✓	✓	✓	✓	✓	✓	✓	✓	✓
2027-R04/R16	✓		✓			✓	✓	✓	✓
2031-016/032	✓	✓	✓	✓	✓	✓	✓	✓	✓
2031-216/232, 2027-232	✓	✓	✓	✓	✓	✓	✓	✓	✓
2031-224, 2026-224	✓	✓	✓	✓	✓	✓	✓	✓	✓
2032-064	✓	✓	✓	✓	✓	✓	✓	✓	✓
2032-140,	✓	✓	✓	✓	✓	✓	✓	✓	✓
2034-212, 2026-E12/12E	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>CNT FC/9000 (Inrange) Directors</b>									
2042-001	✓	✓	✓	✓	✓	✓	✓	✓	✓
2042-128	✓	✓	✓	✓	✓	✓	✓	✓	✓
2042-256	✓	✓	✓	✓	✓	✓	✓	✓	✓
2042-N16, 2045-N16	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>Cisco MDS 9000 Switches</b>									
2061-020, 2061-040 (MDS 9120, 9140), 2061-420 (MDS 9020), 2053-424 (MDS 9124)	✓	✓	✓	✓	✓	✓	✓	✓	✓
2062-D1A 2054-D1A (MDS 9216A), 2062-D1H 2054-D1H (MDS 9216i)	✓	✓	✓	✓	✓	✓	✓	✓	✓
2062-D04/T04 2054-E04 (MDS9506)	✓	✓	✓	✓	✓	✓	✓	✓	✓
2062-E11 2054-E11 (MDS9513)									
2062-D07/T07 2054-E07 (MDS9509)	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>IBM System Storage N series Gateways</b>									
N5200 (2864-G10/G20)			✓ <sup>4</sup>		✓ <sup>5</sup>	✓ <sup>4</sup>	✓ <sup>6</sup>	✓ <sup>7</sup>	✓ <sup>8</sup>
N5300 (2869-G10/G20)			✓ <sup>4</sup>		✓ <sup>5</sup>	✓ <sup>4</sup>	✓ <sup>6</sup>	✓ <sup>7</sup>	✓ <sup>8</sup>
N5500 (2865-G10/G20)			✓ <sup>4</sup>		✓ <sup>5</sup>	✓ <sup>4</sup>	✓ <sup>6</sup>	✓ <sup>7</sup>	✓ <sup>8</sup>
N5600 (2868-G10/G20)			✓ <sup>4</sup>		✓ <sup>5</sup>	✓ <sup>4</sup>	✓ <sup>6</sup>	✓ <sup>7</sup>	✓ <sup>8</sup>
N7600 (2866-G10/G20)			✓ <sup>4</sup>		✓ <sup>5</sup>	✓ <sup>4</sup>	✓ <sup>6</sup>	✓ <sup>7</sup>	✓ <sup>8</sup>
N7800 (2867-G10/G20)			✓ <sup>4</sup>		✓ <sup>5</sup>	✓ <sup>4</sup>	✓ <sup>6</sup>	✓ <sup>7</sup>	✓ <sup>8</sup>
<b>FC Managed Hub</b>									
IBM 3534-1RU		✓		✓	✓				

### Notes:

- DS4300 (FAST600) Single & Dual Controller models, require firmware level 05.34 or later for auto sense 1 or 2Gb host connections.
- More detailed SAN Fabric info is available at: <http://www.storage.ibm.com/ibmsan/index.html>
- IBM System Storage SAN10Q is not supported if exists with Brocade switches on same SAN.
- DS4300 and DS4500 supported only at fw levels 06.23.05.00, 06.19.20.00, and 06.12.40.00
- DS4400 supported only at fw level 06.12.40.00
- DS4200 supported only at fw levels 06.23.05.00 and 06.16.92.00
- DS4700 supported only at fw levels 06.23.05.00 and 06.16.92.00
- DS4800 supported only at fw levels 06.23.05.00

See next page for IBM eServer BladeCenter support.

For online DS4000 interoperability information please go to <http://www-01.ibm.com/systems/support/storage/config/ssic/index.jsp>

## Supported SAN Fabrics, with IBM eServer BladeCenter

With one of the Fibre Channel Switch modules <sup>1</sup> listed installed in the BladeCenter chassis, the following external Fibre Channel switches are supported when connected to the DS4000 storage devices listed at right:									
1) IBM eServer BladeCenter 2-port FC Switch Module (48P7062)									
2) QLogic 6-port Enterprise FC Switch Module (26K6477)									
3) Brocade Entry SAN Switch Module (26K5601)									
4) Brocade Enterprise SAN Switch Module (90P0165)									
5) <u>McDATA 6-port Fibre Channel Switch Module (32R1790)</u>									
6) IBM eServer BladeCenter Optical Pass-thru Module (02R9080)									
7) BladeCenter 4Gbps Fibre Channel Switch Modules (note 2 below)									
8) Cisco 20pt 4Gb FC Blade Switch Module (39Y9280)									
9) Cisco 10pt 4Gb FC Blade Switch Module (39Y9284)									
<b>IBM TotalStorage SAN Switches and Director</b>									
IBM 3534-F08	X	X	X	X	X	X	X	X	X
IBM 2005-B16/B32/B64/H08/H16/R18	X	X	X	X	X	X	X	X	X
IBM 2006-L10									
IBM 2109-F16/F32	X	X	X	X	X	X	X	X	X
IBM 2109-S08/S16		X		X	X	X	X	X	X
IBM 2109-M12/M14/M48	X	X	X	X	X	X	X	X	X
2109-A16	X		X		X	X	X	X	X
<b>McDATA Switches and Directors</b>									
2026-416/432	X	X	X	X	X	X	X	X	X
2027-140/256	X	X	X	X	X	X	X	X	X
2027-R04/R16	X		X		X	X	X	X	X
2031-016/032	X	X	X	X	X	X	X	X	X
2031-216/232, 2027-232	X	X	X	X	X	X	X	X	X
2031-224, 2026-224	X	X	X	X	X	X	X	X	X
2032-064	X	X	X	X	X	X	X	X	X
2032-140, 2027-140	X	X	X	X	X	X	X	X	X
2034-212, 2026-E12/12E	X	X	X	X	X	X	X	X	X
<b>CNT FC/9000 (INRANGE) Directors</b>									
2042-001	X	X	X	X	X	X	X	X	X
2042-128	X	X	X	X	X	X	X	X	X
2042-256	X	X	X	X	X	X	X	X	X
2042-N16, 2045-N16	X	X	X	X	X	X	X	X	X
<b>Cisco MDS 9000 Switches</b>									
2061-020, 2061-040 (MDS 9120, 9140), 2061-420 (MDS 9020)	X	X	X	X	X	X	X	X	X
2062-D1A (MDS 9216A), 2062-D1H ( MDS 9216 ) (MDS 9216i)	X	X	X	X	X	X	X	X	X
2062-E11 ( MDS9513 )									
2062-D04/T04 (MDS9506)	X	X	X	X	X	X	X	X	X
2062-D07/T07 (MDS9509)	X	X	X	X	X	X	X	X	X

Refer to:

- For additional details on configuring BladeCenter with DS4000 series storage refer to the BladeCenter Interoperability Guide at:  
<http://www-03.ibm.com/servers/eserver/serverproven/compat/us/>  
For BladeCenter Switch Modules/External Switch Interoperability refer to individual switch Interoperability Guides at:  
<http://www-1.ibm.com/servers/storage/support/>

Footnotes:

- Refer to the necessary BladeCenter Server hba prerequisites for attachment to the BladeCenter Switch Modules.
  - QLogic (10-port) 32R1904, QLogic (20-port) 26R0881, McDATA (10-port) 32R1905, McDATA (20-port) 32R1833, Brocade (10-port) 32R1813, and Brocade (20-port) 32R1812.
- For BladeCenter Switch Modules/External Switch Interoperability refer to individual switch Interoperability Guides at:  
<http://www-1.ibm.com/servers/storage/support/>

## DS4000 (FAStT) series - Clustering Support

	DS4100	FAStT200	DS4300 single	DS4300 dual	DS4300 w/ Turbo feature	FAStT500	DS4400	DS4500	DS4200	DS4700	DS4800
IBM SAN Volume Controller (SVC) 3.1.0, 4.1.x, and 4.2.x	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
System x e1350 Linux Cluster Solution										✓	✓
Microsoft Cluster Services (1)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Novell Cluster Services	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
IBM HACMP (3, 4)	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
PSSP, GPFS/RVSD Support (3, 4)	✓			✓	✓	✓	✓	✓	✓	✓	✓
Continuous Availability solutions (7)	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
SteelEye – Lifekeeper 5.3, 6.0 2	✓		✓	✓	✓		✓	✓	✓	✓	✓
GPFS for Linux v1.3 (3, 4)	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
Veritas Cluster Server – (See Veritas support section for details)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
HP MC/Service Guard 11.16	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

### Notes:

- Multiple Windows Cluster configurations are supported with DS4000 (FAStT) Windows Server 2003 SP1 RDAC level 08403500 or later
- Refer to the specific DS4000 series support for RedHat Enterprise Linux 3.0, and SuSE Linux Enterprise Server 8 . SteelEye's Lifekeeper support of a certain Linux Distribution level requires DS4000(FAStT) series support of that distribution.
- GPFS and HACMP supported on DS4800, DS4700 and DS4200 controller firmware version 06.23 and later.
- GPFS and HACMP supported on DS4500 and DS4300 controller firmware version 6.23 and earlier. GPFS and HACMP supported on DS4100 controller firmware version 6.12 and earlier.
- GPFS for Linux supported on selected xSeries and BladeCenter servers. Refer to the IBM Linux and eServer Cluster support pages.
  - <http://www-1.ibm.com/servers/eserver/clusters/software/gpfs.html>
  - <http://www.ibm.com/servers/eserver/clusters>
  - <http://www.ibm.com/linux>
- IBM Continuous availability solutions, [http://www-03.ibm.com/servers/storage/solutions/business\\_continuity/continuous\\_availability/technical\\_details.html#windows](http://www-03.ibm.com/servers/storage/solutions/business_continuity/continuous_availability/technical_details.html#windows)

For online DS4000 interoperability information please go to <http://www-01.ibm.com/systems/support/storage/config/ssic/index.jsp>

## DS4000 Storage Manager Operating System Support & Advanced Feature

	Microsoft Windows	Novell Netware	RedHat Enterprise Linux	SuSE Linux Enterprise Server	VMware ESX	AIX	RHEL / SLES for Power	SAN Volume	NAS Gateway	HP-UX <sup>4</sup>	HP-UX Itanium	Solaris
<b>DS4100 single controller</b> (fw: 06.12)												
Storage Manager 9.23	✓	✓	✓	✓						✓	5	✓
FlashCopy	✓	✓	✓	✓						✓	✓	✓
<b>DS4100 (dual) with EXP100</b> (fw: 06.12)												
Storage Manager 9.23	✓	✓	✓	✓	✓	✓	✓	✓		✓	5	✓
FlashCopy	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓
VolumeCopy	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓
Enhanced Remote Mirror <sup>2</sup>	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓
<b>DS4300 single controller</b> (fw: 05.34)												
Storage Manager 9.23	✓	✓	✓	✓					✓	✓	5	✓
FlashCopy <sup>1</sup>	✓	✓	✓	✓					✓	✓	✓	✓
SAN Boot <sup>3</sup>	✓		✓	✓		✓	✓					
<b>DS4300 (dual controller)</b> (fw: 06.23)												
Storage Manager 9.23	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	5	✓
FlashCopy	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
VolumeCopy	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
Intermix (FC & SATA enclosures)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SAN Boot <sup>3</sup>	✓		✓	✓		✓	✓					
<b>DS4300 with Turbo</b> (fw: 06.23)												
Storage Manager 9.23	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	5	✓
FlashCopy	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
VolumeCopy	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
Enhanced Remote Mirror <sup>2</sup>	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
Intermix (FC & SATA enclosures)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SAN Boot <sup>3</sup>	✓		✓	✓		✓	✓					
<b>DS4400</b> (fw: 06.12)												
Storage Manager 9.23	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	5	✓
FlashCopy	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
VolumeCopy	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
Enhanced Remote Mirror <sup>2</sup>	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
Intermix (FC & SATA enclosures)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SAN Boot <sup>3</sup>	✓		✓	✓		✓	✓					
<b>DS4500</b> (fw: 06.23)												
Storage Manager 9.23	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	5	✓
FlashCopy	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
VolumeCopy	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
Enhanced Remote Mirror <sup>2</sup>	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
Intermix (FC & SATA enclosures)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SAN Boot <sup>3</sup>	✓		✓	✓		✓	✓					
<b>DS4200</b> (fw: 06.23)												
Storage Manager 9.23	✓	✓	✓	✓		✓	✓	✓	✓	✓	5	✓
FlashCopy	✓	✓	✓	✓		✓	✓		✓	✓	✓	✓
VolumeCopy	✓	✓	✓	✓		✓	✓		✓	✓	✓	✓
Enhanced Remote Mirror <sup>2</sup>	✓	✓	✓	✓		✓	✓		✓	✓	✓	✓
<b>DS4700</b> (fw: 06.23)												
Storage Manager 9.23	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	5	✓
FlashCopy	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
VolumeCopy	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
Enhanced Remote Mirror <sup>2</sup>	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
Intermix (FC & SATA enclosures)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SAN Boot <sup>3</sup>	✓		✓	✓		✓	✓					
<b>DS4800</b> (fw: 06.23)												
Storage Manager 9.23	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	5	✓
FlashCopy	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
VolumeCopy	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
Enhanced Remote Mirror <sup>2</sup>	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
Intermix (FC & SATA enclosures)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SAN Boot <sup>3</sup>	✓		✓	✓		✓	✓					

For online DS4000 interoperability information please go to <http://www-01.ibm.com/systems/support/storage/config/ssic/index.jsp>

**Notes:**

1. DS4300 (FAStT600), dual controller model, require firmware level 06.10 or later to enable FlashCopy.
2. Enhanced Remote Mirror feature provides Metro Mirror, Global Copy, and Global Mirror capabilities
3. SAN Boot support for other operating systems not listed is via the RPQ process.
4. Storage Manager is not supported on HP-UX Itanium servers

## DS4000 (FAStT) series – Multi-pathing Support

	DS4100	FAStT200	DS4300 single	DS4300 dual	DS4300 w/ Turbo feature	FAStT500	DS4400	DS4500	DS4200	DS4700	DS4800
RDAC	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Windows MPIO <sup>1</sup>			✓	✓	✓			✓	✓	✓	✓
DMP	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SDDDSM <sup>2</sup>			✓	✓	✓			✓			

**Notes:**

1. MPIO support requires Storage Manager 9.19 or later
2. SDD support for Windows and HP-UX is available through the RPQ process.

## DS4000 with Storage Manager v9.23 – Intel / AMD HW Platform & O/S Support

HW Platform	IA-32	IA-64	EM64T	AMD64
Windows Server 2003	Y <sup>1</sup> /na	na/ Y <sup>2</sup>	Y/Y <sup>3</sup>	Y/Y <sup>3</sup>
RDAC Multipath Drvr	Y/na	na/Y	Y/ Y <sup>3</sup>	Y/ Y <sup>3</sup>
Windows MPIO (5)	Y/na	na/Y	Y/Y	Y/Y
RHEL 3 and 4	Y/na	na/Y	Y/Y	Y/Y
RDAC Multipath Drvr	Y/na	na/Y	Y/Y	Y/Y
Qlogic Multipath Drvr (4)	N/na	na/N	N/N	N/N
SLES 8	Y/na	na/Y	Y/N	Y/N
RDAC Multipath Drvr	Y/na	na/Y	Y/N	Y/N
Qlogic Multipath Drvr (4)	N/na	na/N	N/N	N/N
SLES 9	Y/na	na/Y	Y/Y	Y/Y
RDAC Multipath Drvr	Y/na	na/Y	Y/Y	Y/Y
Qlogic Multipath Drvr (4)	N/na	na/N	N/N	N/N

**Legend: 32 bit OS version / 64 bit OS version**

**Y=supported, N=not supported, n/a=not applicable**

**Notes:**

1. For x86 (IA-32) Intel/AMD Platforms, Windows Server 2003 with Service Pack 1, Enterprise, Standard Web and Storage Server Editions.and Windows Server 2003 R2, Enterprise and Standard Editions are supported.
2. For IA-64 (Itanium), Windows Server 2003 for Itanium, Enterprise Edition is supported.
3. Support for Windows Server 2003 x64 edition requires StorPort Hot Fix KB916048, which is identified in the most recent README (applies to DS4100, DS4300, DS4400, DS4500, DS4200, DS4700, and DS4800). The DS4800 and DS4700 with firmware code level 6.16.82.00 and DS4200 with firmware code level 6.16.88.00 or later attached to EXP810/EXP710 is now supported with Windows 2003 w/SP1, R2 and x64 editions for the EM64T and AMD64 processor systems.. The DS4800 with firmware code level 06.15.20.55 attached to EXP710/EXP100 is also supported with Windows 2003 w/SP1, R2 and x64 editions for the EM64T and AMD64 processor systems. The DS4100, with firmware code level 6.12.23.00 or later attached to EXP100, and DS4300, DS4400, and DS4500 with firmware code level 6.12.27.00 or later attached to EXP710/EXP100 is also supported with Windows 2003 w/SP1, R2 and x64 editions for the EM64T and AMD64 processor systems.
4. The Qlogic multipath driver ( also know as the fail over driver ) is no longer tested as of 6.19
5. MPIO support with SM 9.19 is currently at MPIO Device Specific Module (DSM) v01.01.35.13, supported with DS4300 and DS4500.

For online DS4000 interoperability information please go to <http://www-01.ibm.com/systems/support/storage/config/ssic/index.jsp>

## **DS4000 series – Dynamic Functions**

- o **DSS – Dynamic Segment Sizing**
- o **DRM – Dynamic RAID Migration**
- o **DCE – Dynamic Capacity Expansion**
- o **DVE – Dynamic Volume Expansion**

**DS4000 Dynamic Functions are supported in the operating environments listed with the following exceptions. Refer to the specific DS4000 models support matrix above for additional details on supported platforms and operating system levels. Exceptions are:**

1. DVE support for AIX requires AIX 5.2 or later.
2. DVE is not supported by SUN Solaris or HP-UX operating systems.
3. Dynamic function support is not available for SUSE Linux Enterprise Server 8 for pSeries.
4. DVE is not supported by SAN Volume Controller

## **Minimum Server Hardware Requirements**

	Processor	Memory
Intel Compatible Servers	Pentium II 450MHz and ABOVE	512MB
SUN	250MHz SPARC	1GB
HP PA-RISC	440 MHz	1GB
IBM pSeries	All pSeries, RS/6000, RS/6000 SP servers with fc #5716, #1957, #1977, #6239, #6228 #6227, 1905, 5758, 1910, or 5759.	

Note:

Refer to the IBM Server Proven web site for the latest compatibility information for xSeries servers:

<http://www-03.ibm.com/servers/eserver/serverproven/compat/us/>

- Standard IBM xSeries servers (xSeries 206, 226, 346 and HS20 blade) are supported with Microsoft Windows 2003 w/ SP1 Storage Server edition.
- pSeries support includes Open Power series servers.
- Intel and AMD support includes servers manufactured by Sun.

## **DS4000 Downloadable Product Code Updates**

To be notified of DS4000 code updates, you can register for automatic notifications via the IBM Support and Download web site at:

<http://www.ibm.com/servers/storage/support/disk>

In the "Personalized Support" box, click on "My Support."

Next, enter your IBM Registration ID and Password; or if necessary, register for this service.

On the Welcome page, select "Computer Storage" on the pull down menu, and click on "Go." Scroll down to "Disk Storage Systems" category and select the DS4000/FASTT product(s) of interest. At bottom of the page, select "Save and Return."

On the main page select your mail preferences. It is recommended that you select "Flashes" and "Downloadable files to receive important product information, select "Submit." You should receive a confirmation indicating that "Your profile was successfully updated."

Note, you are responsible for downloading or obtaining from IBM, and installing designated Machine Code (microcode, basic input/output system code (called "BIOS"), utility programs, device drivers, and diagnostics delivered with an IBM Machine) and other software updates in a timely manner from an IBM Internet website or from other electronic media, and following the instructions that IBM provides. You may request IBM to install Machine Code changes, however, you may be charged for that service.



## Veritas Storage Solution Products (from Symantec) and DS4000 Interoperability

	DS4100 (FAST100)	DS4300 <sup>1</sup> (FAST600)	DS4400 (FAST700)	DS4500 (FAST900)	DS4200	DS4700	DS4800
<b>Veritas Volume Manager (VxVM), Veritas Cluster Server (VCS), &amp; Storage Foundation for Oracle RAC (SFRAC)</b>							
<b><u>Windows</u></b>							
<b><u>Windows Server 2003</u></b>							
VxVM 4.2 - VCS 4.2	✓	✓	✓	✓			✓
VxVM 4.3 - VCS 4.3					✓	✓	✓
VxVM 5.0 <sup>2</sup> - VCS 5.0		✓		✓	✓	✓	✓
<b><u>Windows 2000 Server &amp; Adv. Server w/SP4</u></b>							
VxVM 4.2 - VCS 4.2	✓	✓	✓	✓			✓
VxVM 4.3 - VCS 4.3					✓	✓	✓
<b><u>Solaris</u></b>							
<b><u>7</u></b>							
VxVM 3.5 - VCS 3.5	✓	✓	✓	✓			
<b><u>8 &amp; 9</u></b>							
VxVM 3.5 - VCS 3.5	✓	✓	✓	✓			
VxVM 4.0 - VCS 4.0 – SFRAC 4.0	✓	✓	✓	✓	✓	✓	✓
VxVM 4.1 - VCS 4.1 <sup>3</sup> – SFRAC 4.1	✓	✓	✓	✓	✓	✓	✓
VxVM 5.0 - VCS 5.0 – SFRAC 5.0		✓		✓	✓	✓	✓
<b><u>10</u></b>							
VxVM 4.1 - VCS 4.1 <sup>2</sup> – SFRAC 4.1	✓	✓	✓	✓	✓	✓	✓
VxVM 5.0 - VCS 5.0 – SFRAC 5.0		✓		✓	✓	✓	✓
<b><u>AIX<sup>4</sup></u></b>							
<b><u>5.1</u></b>							
VxVM 4.0 - VCS 4.0	✓	✓	✓	✓			✓
<b><u>5.2</u></b>							
VxVM 4.0 - VCS 4.0 – SFRAC 4.0	✓	✓	✓	✓	✓	✓	✓
<b><u>5.3<sup>5</sup></u></b>							
VxVM 4.0 - VCS 4.0 – SFRAC 4.0	✓	✓	✓	✓	✓	✓	✓
VxVM 5.0 - VCS 5.0 – SFRAC 5.0		✓		✓	✓	✓	✓
<b><u>Linux</u></b>							
<b><u>Red Hat 4.3 / SLES 9.3</u></b>							
VxVM 4.1 - VCS 4.1	✓	✓	✓	✓	✓	✓	✓
<b>Veritas Command Central Storage</b>							
CCStor 4.2	✓	✓	✓	✓			
CCStor 5.0		✓		✓	✓	✓	✓

### Notes:

1. For DS4300 Single Controller firmware level 05.3x and prior, refer to document <http://www-01.ibm.com/support/docview.wss?uid=psg1MIGR-57485&rs=555> for details.
2. Symantec DSM only for MPIO supported.
3. Fencing not supported.
4. RDAC multipathing required for multipath configurations.
5. TL5 or later only.

For online DS4000 interoperability information please go to <http://www-01.ibm.com/systems/support/storage/config/ssic/index.jsp>

**Appendix A: DS4000 Supported Enclosure Attachment Configurations and Cable Guidelines:**

**[Link to Enclosure configuration and cabling guidelines diagrams](#)**

Reference this document, [DS4000 Fibre Channel and Serial ATA Intermix premium feature installation overview](#) at <http://www-03.ibm.com/servers/storage/support/disk/ds4500/installing.html>

**DS4200 Enclosure Limits and Combination Guide:**

DS4200 supports up to six EXP420 storage expansion units (up to maximum of 112 DS4200 500GB and/or 750GB SATA EV-DDMs).

DS4200 only supports attachment to EXP420 expansion trays.

Both DS4200 and EXP420 only use "DS4200 500GB and/or 750GB SATA EV-DDM" drive.

DS4200 with EXP420 and "DS4200 500GB and/or 750GB SATA EV-DDM" provides a SATA-Only Value Solution.

**DS4300 Enclosure Limits and Combination Guide:**

**DS4300 Dual and Turbo with FW 06.23** supports attachment of EXP810, EXP710, and EXP100 expansion units, as well as supports intermix of both Fibre Channel and/or SATA drives within EXP810 expansion units.

Note, "Intermix Activation" feature must be applied when DS4300 disk array system includes both Fibre Channel and SATA disk drive types, within the combination of DS4300 and attached EXP810, EXP710, EXP100 expansion units.

**DS4300 with FW 06.23  
Supported enclosure  
limits and combinations**

DS4300 supports up to  
seven (7) EXP100s

DS4300 supports up to  
seven (7) EXP710s

DS4300 supports  
combinations of up to  
seven (7) EXP100s and/or EXP710s

DS4300 supports up to  
six (6) EXP810s

DS4300 supports  
combinations of up to  
six (6) EXP810s, EXP100s, and/or EXP710s

**Supported number  
of drives per  
DS4300 System**

Maximum of 112 drives  
(may require intermix feature)

Maximum of 112 drives

Maximum of 112 drives  
(requires intermix feature)

Maximum of 112 drives  
(may require intermix feature)

Dependent upon number  
of EXP810, EXP100, and/or EXP710  
enclosures attached  
(requires intermix feature)

For online DS4000 interoperability information please go to <http://www-01.ibm.com/systems/support/storage/config/ssic/index.jsp>

## **DS4500 Enclosure Limits and Combination Guide:**

**DS4500 with FW 06.23** supports attachment of EXP810, EXP710, and EXP100 expansion units, as well as supports intermix of both Fibre Channel and/or SATA drives within EXP810 expansion units.

Note, "Intermix Activation" feature must be applied when DS4500 disk array system includes both Fibre Channel and SATA disk drive types, within the combination of attached EXP810, EXP710, EXP100 expansion units.

### **DS4500 with FW 06.23 Supported enclosure limits and combinations**

DS4500 supports up to  
sixteen (16) EXP100s

DS4500 supports up to  
sixteen (16) EXP710s

DS4500 supports  
combinations of up to  
sixteen (16) EXP100s and/or EXP710s

DS4500 supports up to  
fourteen (14) EXP810s

DS4500 supports  
combinations of up to  
fourteen (14) EXP810s, EXP100s, and/or EXP710s  
.

### **Supported number of drives per DS4500 System**

Maximum of 224 drives

Maximum of 224 drives

Maximum of 224 drives  
(requires intermix feature)

Maximum of 224 drives  
(may require intermix feature)

Dependent upon number  
of EXP810, EXP100, and/or EXP710  
enclosures attached  
(requires intermix feature)

## **DS4700 Enclosure Limits and Combination Guide:**

**DS4700 with FW 06.23** supports attachment of EXP810, EXP710, and EXP100 expansion units, as well as supports intermix of both Fibre Channel and/or SATA drives within DS4700 and/or within EXP810 expansion units.

Note, "Intermix Activation" feature must be applied when DS4700 disk array system includes both Fibre Channel and SATA disk drive types, within the combination of DS4700 and attached EXP810, EXP710, EXP100 expansion units.

### **DS4700 with FW 06.16 Supported enclosure limits and combinations**

DS4700 supports up to  
six (6) EXP710s

DS4700 supports  
combinations of up to  
six (6) EXP100s and/or EXP710s

DS4700 supports up to  
six (6) EXP810s

DS4700 supports  
combinations of up to  
six (6) EXP810s, EXP100s, and/or EXP710s

### **Supported number of drives per DS4700 System**

Maximum of 100 drives  
(may require intermix feature)

Maximum of 100 drives  
(requires intermix feature)

Maximum of 112 drives  
(may require intermix feature)

Dependent upon number  
of EXP810, EXP100, and/or EXP710  
enclosures attached  
(requires intermix feature)

## DS4800 Enclosure Limits and Combination Guide:

**Note: DS4800 with FW 06.23** supports attachment of EXP810, EXP710, and EXP100 expansion units, as well as supports intermix of both Fibre Channel and/or SATA drives within EXP810 expansion units.

Note, "Intermix Activation" feature must be applied when DS4800 disk array system includes both Fibre Channel and SATA disk drive types, within the combination of attached EXP810, EXP710, EXP100 expansion units.

Supported enclosure limits and combinations -----	Supported number of drives per drive channel pair -----	Supported number of drives per DS4800 -----
DS4800 supports up to eight (8) EXP100s on each drive channel pair.	Maximum of 112 drives per drive channel pair.	Maximum 224 drives per DS4800 system.
DS4800 supports up to eight (8) EXP710s on each drive channel pair.	Maximum of 112 drives per drive channel pair.	Maximum 224 drives per DS4800 system.
DS4800 supports combinations up to eight (8) EXP710s and or EXP100s on each drive channel pair.	Maximum of 112 drives per drive channel pair.	Maximum 224 drives per DS4800 system. (requires intermix feature)
DS4800 supports up to seven (7) EXP810s on each drive channel pair.	Maximum of 112 drives per drive channel pair.	Maximum 224 drives per DS4800 system. (may require intermix feature)
DS4800 supports combinations of up to seven (7) EXP810s, EXP100s, and/or EXP710s mixed on each drive channel pair.	Dependent upon number of EXP810 and EXP710 enclosures attached to each drive channel pair.	Dependent on number of EXP810 and EXP710 enclosures per DS4800 system. (requires intermix feature)

## Appendix B: DS4000 Legacy Product Reference Information

The IBM TotalStorage FASTT family of storage products has been renamed. IBM renamed and aligned its full range of disk products to the IBM TotalStorage DS Family to help small to large-size enterprises select the right solutions for their needs. This renaming included the FASTT products and future IBM storage products. This was a name change only with no change in functionality or warranty. These products remain functionally equivalent and (other than announced enhancements) fully interoperable. The mapping of DS names to previous FASTT names is:

<b>DS4000</b>	<b>FASTT</b>
DS4100	FASTT100
DS4300	FASTT600
DS4300 with Turbo	FASTT600 with Turbo
DS4400	FASTT700
DS4500	FASTT900
DS4700	na
DS4800	na

## DS4400 - Models (FAST700)

### Supported Operating Systems with Expansion Units\*

	IBM xSeries	Intel & AMD IBM BladeCenter	Power IBM BladeCenter	IBM pSeries	HP Proliant (Netserver)	HP Integrity	Dell PowerEdge	HP 9000 (PA- RISC)	Sun Fire & Netra (SPRAC)	Notes	EXP100 <sup>4</sup>	EXP500 <sup>4</sup>	EXP710 & EXP700 <sup>4</sup>
Windows Server 2003 w/SP2, R2 and x64	✓	✓			✓	✓	✓			1	✓	✓	✓
Windows 2000 Server & Adv.Server w/SP4	✓	✓			✓		✓				✓	✓	✓
Novell NetWare 6.5 w/SP6	✓	✓			✓		✓				✓	✓	✓
Red Hat Enterprise Linux 3.8	✓	✓	✓	✓	✓	✓	✓			5	✓	✓	✓
Red Hat Enterprise Linux 4.4	✓	✓	✓	✓	✓	✓	✓			7	✓	✓	
SuSE Linux Enterprise Server 9 SP3	✓	✓	✓	✓	✓	✓	✓			6, 7	✓	✓	✓
SuSE Linux Enterprise Server 10	✓	✓	✓	✓	✓	✓	✓			6, 7	✓	✓	✓
VMWare ESX 2.5.3 and 3.0.1	✓	✓			✓		✓			2	✓	✓	✓
AIX 5.1, 5.2, 5.3			✓ <sup>3.1</sup>	✓						3.2	✓	✓	✓
HP-UX 11.0, 11i and 11.23 with PVLlinks								✓		9	✓	✓	✓
Solaris 8, 9, 10									✓	8	✓	✓	✓

\* - This chart includes the following DS4000 series with DS4000 Storage Manager (SM) levels:  
DS4400 - SMv9.23 with firmware level = 06.12.

#### Footnotes:

1. Microsoft Windows Server 2003 w/SP1, R2 and x64 – Enterprise, Standard, Web, and Storage Server editions, 32bit and 64bit versions of the operating system (see chart on page 14, section DS4000 with Storage Manager - Intel/AMD Hardware Platform & Operating System Support, for details regarding 32bit and 64bit versions of supported server hardware).
2. Windows guests using MSCS or VMotion (but not guests using MSCS and VMotion concurrently) are supported with VMware ESX 2.5.3 and 3.0. ( ESX 3.0 supports 4Gb FC speeds )  
ESX Server Clusters support applies to Windows 2000, its service packs, and Windows 2003 RTM, but not Windows 2003 SP1. Please refer to KB article 2021 for the latest information.  
[http://kb.vmware.com/vmtknkb/search.do?cmd=displayKC&docType=kc&externalId=2021&sliceId=SAL\\_Public](http://kb.vmware.com/vmtknkb/search.do?cmd=displayKC&docType=kc&externalId=2021&sliceId=SAL_Public)
3. Note 3.1 - BladeCenter JS20 support with AIX 5.2 and 5.3. Note 3.2 - AIX 5.1, 5.2, 5.3 supported within AIX Partition (LPAR) hosted on i5 iSeries servers.
4. When a EXP700 is upgraded with fc#3501 or pn:25R0166, it is supported in the same manner as a EXP710. Also, when attaching both EXP700 and EXP500 to the same DS4500 or DS4400 (FAST900/700), the EXP700 must be set to 1Gb mode. When attaching both EXP710/700 and EXP100 to the DS4500 or DS4400, firmware level 06.10 or later and the optional FC/SATA Enclosure Intermix feature is required with the enclosures set to 2Gb mode. EXP500 can not be used when connecting EXP100, or EXP710.
5. Linux RedHat Advanced Server 3 Update 4 / 5 with RDAC support on Power pServers and Linux Partition (LPAR) hosted on i5 iSeries servers.
6. SuSe Linux Enterprise Server 9 SP1 with RDAC support on Power pServers, and Linux Partition (LPAR) hosted on i5 iSeries servers.
7. Note, for Linux on Power ( LoP ), Red Hat 4 RDAC support starts at RH4 U1, Note: U1 is required. Also for SUSE 9 RDAC support starts at SLES9 SP1. Note: SP1 is required.
8. Veritas DMP and Sun's MPXIO multipathing driver are supported with Solaris 8,9,10.
9. Support for HP-Itanium based servers with HP-UX 11.23 may be requested via RPQ process.

#### General Notes:

- Please refer to the README files for additional configuration details and limitations found at <http://www-03.ibm.com/servers/storage/disk/ds4000/ds4500/index.html>
- JS20 blades must not have the following Fibre Channel Expansion card FRU number installed in certain JS20 blade model numbers. FRU number 13N2208 (or Option PN 13N2203) and JS20 8842-21X MT/MN are not compatible. This combination is not supported for Linux on Power releases. Possible intermittent problems are Fibre Channel Expansion card NVRAM corruption symptoms. (CMVC 279060.) Please refer to README files.
- Support based on Minimum Server Requirements, shown later in this document.
- Refer to Storage Manager Operating System Support & Advanced Features page, shown later in this document, for additional details
- pSeries support includes Open Power series servers.
- Intel and AMD support includes servers manufactured by Sun.

## DS4100 - Models (FAStT100) Dual / Single Controller

### Supported Operating Systems with Expansion Unit\*

	IBM xSeries	Intel & AMD IBM BladeCenter	Power IBM BladeCenter	IBM pSeries	HP Proliant (Netserver)	HP Integrity	Dell PowerEdge	HP 9000 (PA- RISC)	Sun Fire & Netra (SPRAC)	Notes	EXP100 <sup>4</sup>
Windows Server 2003 w/SP2, R2 and x64	✓	✓			✓	✓	✓			1	✓
Windows 2000 Server & Adv. Server w/SP4	✓	✓			✓		✓				✓
Novell NetWare 6.5 w/SP6	✓	✓			✓		✓				✓
Red Hat Enterprise Linux 3.8	✓	✓	✓	✓	✓	✓	✓			5	✓
Red Hat Enterprise Linux 4.4	✓	✓	✓	✓	✓	✓	✓			7	✓
SuSE Linux Enterprise Server 9 SP3	✓	✓	✓	✓	✓	✓	✓			6, 7	✓
SuSE Linux Enterprise Server 10	✓	✓	✓	✓	✓	✓	✓			6, 7	✓
VMWare ESX 2.5.3 and 3.0.1 (DS4100 Dual Controller)	✓	✓			✓		✓			2	✓
AIX 5.1, 5.2, 5.3 (DS4100 Dual Controller)			✓ <sup>3.1</sup>	✓						3.2	✓
HP-UX 11.0, 11i and 11.23 with PVLlinks								✓		9	✓
Solaris 8, 9, 10									✓	8	✓

\* - This chart includes the following DS4000 series with DS4000 Storage Manager (SM) levels:

DS4100 (dual controller) – SMv9.23 with firmware level = 06.12,

DS4100 (single controller) – SMv9.23 with firmware level = 06.12.

#### Footnotes:

- Microsoft Windows Server 2003 w/SP1, R2 and x64 – Enterprise, Standard, Web, and Storage Server editions, 32bit and 64bit versions of the operating system (see chart on page 14, section DS4000 with Storage Manager - Intel/AMD Hardware Platform & Operating System Support, for details regarding 32bit and 64bit versions of supported server hardware).
- Windows guests using MSCS or VMotion (but not guests using MSCS and VMotion concurrently) are supported with VMware ESX 2.5.3 and 3.0. ( ESX 3.0 supports 4Gb FC speeds )  
ESX Server Clusters support applies to Windows 2000, its service packs, and Windows 2003 RTM, but not Windows 2003 SP1. Please refer to KB article 2021 for the latest information.  
[http://kb.vmware.com/vmtknk/search.do?cmd=displayKC&docType=kc&externalId=2021&sliceId=SAL\\_Public](http://kb.vmware.com/vmtknk/search.do?cmd=displayKC&docType=kc&externalId=2021&sliceId=SAL_Public)
- Note 4.1 - AIX BladeCenter JS20 support with AIX 5.2 and 5.3. Note 4.2 - AIX 5.1, 5.2, 5.3 supported within AIX Partition (LPAR) hosted on i5 iSeries servers.
- EXP100 ESM firmware must be at level 9554 or later.
- Linux RedHat Advanced Server 3 Update 4 / 5 with RDAC support on Power pServers and Linux Partition (LPAR) hosted on i5 iSeries servers.
- SuSe Linux Enterprise Server 9 SP1 with RDAC support on Power pServers, and Linux Partition (LPAR) hosted on i5 iSeries servers.
- Note, for Linux on Power ( LoP ), Red Hat 4 RDAC support starts at RH4 U1, Note: U1 is required. Also for SUSE 9 RDAC support starts at SLES9 SP1. Note: SP1 is required.
- Veritas DMP and Sun's MPXIO multipathing driver are supported with Solaris 8,9,10.
- Support for HP-Itanium based servers with HP-UX 11.23 may be requested via RPQ process.

#### General Notes:

- Please refer to the README files for additional configuration details and limitations found at <http://www-03.ibm.com/servers/storage/disk/ds4000/ds4100/index.html>
- JS20 blades must not have the following Fibre Channel Expansion card FRU number installed in certain JS20 blade model numbers. FRU number 13N2208 (or Option PN 13N2203) and JS20 8842-21X MT/MN are not compatible. This combination is not supported for Linux on Power releases. Possible intermittent problems are Fibre Channel Expansion card NVRAM corruption symptoms. (CMVC 279060.) Please refer to README files.
- Support based on Minimum Server Requirements, shown later in this document.
- Refer to Storage Manager Operating System Support & Advanced Features, shown later in this document, for additional details.
- pSeries support includes Open Power series servers.
- Intel and AMD support includes servers manufactured by Sun.
- GPFS and HACMP are supported on DS4100 model controllers, with supported expansion and drives.



## FAST200, and FAST500 Supported Operating Systems with Expansion Units\*

	IBM xSeries	IBM BladeCenter	IBM pSeries	HP Proliant (Netserver)	HP Integrity	Dell PowerEdge	HP 9000 (PA-RISC)	Sun Fire & Netra (SPRAC)	EXP500 <sup>4</sup>	EXP700 <sup>4</sup>
Windows Server 2003 1	✓	✓		✓	✓	✓			✓	✓
Windows 2000 Server & Adv. Server w/SP4	✓	✓		✓		✓			✓	✓
Novell NetWare 6.0 w/SP4 & 6.5 w/SP2	✓	✓		✓		✓			✓	✓
Red Hat Enterprise Linux 3.0	✓	✓	✓	✓	✓	✓			✓	✓
SuSE Linux Enterprise Server 8	✓	✓	✓	✓	✓	✓			✓	✓
SuSE Linux Enterprise Server 9 2	✓	✓	✓	✓	✓	✓			✓	✓
AIX 5.1, 5.2, 5.3 3		✓	✓						✓	✓
HP-UX 11, 11i							✓		✓	✓
Solaris 7, 8, 9								✓	✓	✓

\* - This chart includes the following DS4000 (FAST) series with DS4000 (FAST) Storage Manager (SM) levels:

FAST500 - SMv9.16 with firmware level = 05.30.

FAST200 - SMv9.16 with firmware level = 05.30.

### Footnotes:

1. Microsoft Windows Server 2003 SP1 and R2 – Enterprise, Standard and Web editions, 32bit and 64bit (Itanium-based IA64 edition only)
2. SLES 9 support on Intel-based servers (including HS20 and HS40) and the JS20 blade requires the Qlogic driver. On pSeries, only the Emulex single-path driver is supported for SLES 9.
3. AIX support with single controller FAST200 model requires the upgrade to dual controllers. BladeCenter JS20 support with AIX 5.2 and 5.3.
4. When attaching both EXP700 and EXP500 to the same FAST500 or FAST200, the EXP700 must be set to 1Gb mode.

### General Notes:

- Dynix 4.4.10, 4.5.3, 4.6.1 support only with FAST200 Series using hba: IOC-2010-54.
- Support based on Minimum Server Requirements, shown later in this document.
- Refer to Storage Manager Operating System Support & Advanced Features pages, shown later in this document, for additional details.

## FASTt200 and FASTt500 Supported HBAs

	IBM xSeries	IBM pSeries	HP Proliant (Netserver)	HP Integrity	Dell PowerEdge	HP 9000 (PA-RISC)	Sun Fire & Netra (SPARC)
IBM FC - 00N6881/fc#2102	✓		✓	✓	✓		
IBM FC2/66-19K1246/fc#2103	✓		✓	✓	✓		
IBM FC2/133-24P0960/fc#2104	✓		✓	✓	✓		
IBM pSeries fc#6227/6228		✓					
IBM pSeries fc#6239		✓					
IBM pSeries fc#5716, 1957, 1977		✓					
HP D8602B			✓				
HP A3740, A5158A						✓	
HP A3591B, A6795A, A6826A						✓ <sup>4</sup>	
JNI FCE-6410, FCE-6460, FCE2-6412							✓
JNI FCX-6562, FCX2-6562, FCE2-6412							✓
JNI FCC-6562, FCC2-6562							✓
Qlogic QLA2200F1	✓		✓	✓	✓		
Qlogic QLA2300F2	✓		✓	✓	✓		✓ <sup>3</sup>
Qlogic QLA2310F2	✓		✓	✓	✓		✓ <sup>3</sup>
Qlogic QLA23402	✓		✓	✓	✓		✓ <sup>3</sup>
Emulex LP9002, LP9402, LP9802, LP10000	✓		✓	✓	✓		

### Footnotes:

1. Qlogic adapters are only supported if used in conjunction with IBM FASTt BIOS and Device Driver, plus the QLA2202F is only supported in the IBM NAS 300G.
2. Qlogic adapters are only supported if used in conjunction with IBM FASTt FC-2/133 BIOS and Device Driver.
3. Qlogic adapters on SUN servers with Solaris 7, 8 and 9 only.
4. FASTt500 only.

### Note:

- 2Gb HBAs will operate at 1Gb speed when attached to 1Gb devices. The FASTt200 and FASTt500 are 1Gb fibre channel devices.

For information on configurations with IBM eServer BladeCenter refer to:

<http://www-03.ibm.com/servers/eserver/serverproven/compat/u>

## DS4000 Storage Manager - Operating System Support & Advanced Features

	Microsoft Windows	Novell Netware	RedHat Enterprise Linux	SuSE Linux Enterprise Server	United Linux	VMware ESX	AIX	RHEL / SLES for Power	SAN Volume Controller	NAS Gateway 500	HP-UX	Solaris
<b>FASTT200</b> (fw: 05.30)												
Storage Manager 9.16	✓	✓	✓	✓	✓		✓	✓		✓	✓	✓
FlashCopy	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓
<b>FASTT500</b> (fw: 05.30)												
Storage Manager 9.16	✓	✓	✓	✓	✓		✓	✓		✓	✓	✓
FlashCopy	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓
Remote Mirroring	✓	✓	✓	✓	✓		✓			✓	✓	✓

Refer to the specific DS4000 (FASTT) models support matrix on Appendix B for additional details on supported platforms and operating system levels.

### Notes:

1. Attachment of DS4000 (FASTT) EXP500 also supported, with 1Gb FC disk throughput. EXP500 can not be attached with EXP100 using the Intermix feature.
2. Enhanced Remote Mirror feature provides Metro Mirror, Global Copy, and Global Mirror capabilities. Async Enhanced Remote Mirror support with installations having extended distance line speeds of 10Mbytes or higher.

## Veritas Storage Solution Products (from Symantec) and DS4000 Interoperability

### FASTT200, and FASTT500

#### Windows Server 2003

#### Windows 2000 Server & Adv.Server w/SP4

Veritas Volume Manager (DMP) 3.1 is supported with Windows 2000. Refer to document <http://www-1.ibm.com/support/docview.wss?uid=psg1MIGR-57485&rs=555> for details.

Veritas Cluster Server is supported with Windows Server 2003 and Windows 2000.

#### Solaris 7, 8, 9

Veritas Volume Manager (DMP) 3.5 is supported with Solaris 7, 8, and 9; Veritas Volume Manager (DMP) 4.0/4.1 are supported with Solaris 8 and 9; DMP is required for greater than 32 logical drives per storage partition; Veritas Cluster Server 4.0/4.1 and Storage Foundation 4.0/4.1 for Oracle RAC are supported with Solaris 8 and 9. Refer to document <http://www-1.ibm.com/support/docview.wss?uid=psg1MIGR-57485&rs=555> for details.