

# Adaptec RAID 3x05 Controllers Better Choice than LSI MegaRAID SAS 820x

For storage performance and data protection, the hardware RAID Adaptec Unified Serial controllers for PCIe are a better choice than the software RAID LSI 820x. The hardware design and technology of the Adaptec controllers provide greater performance and reliability in a platform proven compatible with over 99% of the serial devices available today.

Feature & Function Comparison	Product Lines	
	Adaptec RAID 3x05	LSI MegaRAID SAS 820x
Additional performance load on the server?	Performance independent of server workload - Fast memory, fast processor and no impact on the performance of the application(s) running on the host system  Offloads the RAID task from the host - Best suited for complex RAID 5 or RAID 6 scenarios which usually offer best price/performance ratio	Systems performance is impacted by the RAID application - The more drives involved and the more complex the RAID system is (e.g. involving parity on a RAID 5), the more impact on the overall performance  Better suited for simple RAID 0, 1, 10 scenarios.
Operating system support	RAID functionality completely independent of the OS - Simple HBA driver for OS is sufficient and usually available as part of the OS distribution (built-in driver support)	RAID functionality is still dependent on the OS as the driver runs on top of the OS - Multiple drivers for a variety of OS's do allow migration of the array to other OS's, but might be limited by the availability of a RAID driver for very new OS's (e.g. newer versions of an OS might need a new RAID driver - RAID drivers are more complex than normal HBA driver programs, and therefore, it might take longer to develop them)
Vulnerability to viruses	Not vulnerable to viruses - RAID arrays are completely independent of the host system and OS - No data integrity issues occur if the host system fails	Viruses and other harmful software might impact RAID functionality because RAID is running as an application on the computer system - Data integrity issues can occur due to system crashes - Software or hardware problems on the server can impact data consistency and integrity
Write-back caching for improved performance	Can run in write-back mode if it has a battery, adding another level of data protection - Write-back mode significantly enhances the write performance of a RAID array	Hardware-assisted software RAID only runs in write-through mode - There is no way to add a battery for hardware assisted software RAID
Open Source drivers	Yes	No

Operating System Support	Adaptec RAID 3x05	LSI 820x
Windows XP	Yes	Yes
Windows Server 2003	Yes	Yes
Windows Vista	Yes	No
NetWare 6.5 SP5	Yes	No
FreeBSD 5.4, 6.0, 6.1	Yes	No
Red Hat Linux	Yes	Yes
SUSE Linux	Yes	Yes
SCO UnixWare 7.1.4	Yes	No
SCO OpenServer 6	Yes	No
Solaris 10	Yes	No
VMWare	Yes	No

Competitive Matrix Model #	Adaptec RAID 3x05	LSI 820x
Technology	Unified Serial™	SAS
SATA/SAS Drive Support	Yes	Yes
Cache Memory	Up to 256MB	-
RAID 0, 1, 10, 5	Yes	Yes
RAID 1E	Yes	No
RAID 5EE	Yes	No
RAID 6	Yes	No
Copyback Hot Spare	Yes	No
Optimized Disk Utilization	Yes	No
Processor	Intel 80333	Xor engine only
MHz	Up to 800MHz	Software RAID
Port Flexibility	4-16 Internal	4-8 Internal



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