Adaptec® Series 8 Family: 81605Z/Q, 8885/Q, 8805, 8405

12 Gbps PCIe Gen3 High-Port SAS/SATA RAID Adapters

Maximum Performance

Data center, IT and general consumer server environments have a broad range of requirements—from basic connectivity to extreme data storage capacities. The effectiveness at which their data is accessed and protected is crucial to their ultimate success. The 12 Gbps PCIe Gen3 Series 8 RAID adapters, coupled with 12 Gbps SSDs, provide maximum read/write bandwidth and IOPS for the most performance-hungry transactional and database applications.

Series 8Q With Adaptec® maxCache 3.0

Advancing the performance capabilities of SSD caching to a broader set of application workloads, the Series 8Q with maxCache 3.0 supports read- and write-back caching. By caching writes to a redundant SSD cache pool (RAID1, RAID1E, or RAID5), maxCache 3.0 leverages the performance and latency capabilities of SSD technology for both read and write workloads. The read caching function is also improved with maxCache 3.0, with additional optimizations to the learned-path algorithm. maxCache 3.0 SSD caching software is the only caching solution that supports up to 2 TB of SSD cache.

Integrated Cache Protection

The Series 8 family continues battery-free portfolio. Series 8 adapters can be combined with the Adaptec AFM-700 Flash-based cache protection module (sold separately) to enable instant cache protection. With Series 8, the 81605Z and 81605ZQ models have Flash backup embedded on the board, eliminating the need for a daughterboard and further enabling you to do more with less.

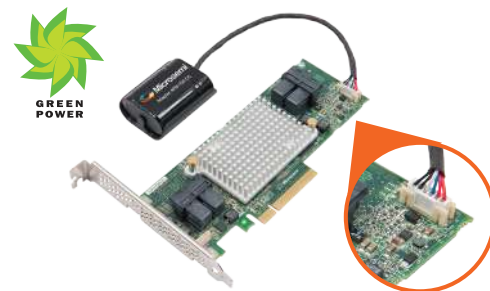## Advanced Data Protection and Ease of Use

Adaptec RAID Code (ARC) delivers maximum reliability with an industry-leading feature set, including all of the RAID levels the industry has come to expect, plus unique features like flexible configuration modes for the adapter, hybrid RAID and Optimized Disk Utilization (ODU) where no available space is wasted. Adaptec maxView provides an HTML5 web interface that can be used in standard desktops and mobile browsers for all storage configuration and management needs.

Benefits

- Ideal for 12 Gbps performance-hungry server and workstation platforms, without compromising proven reliability
- Provides high I/O transaction and high bandwidth processing, solutions that reduce energy consumption and maintenance costs

Highlights

- maxCache 3.0 caching software (Series 8Q only)
- Cache protection via third-generation ZMCP; AFM-700 (integrated on 81605Z and 81605ZQ, optional for rest of Series 8 products)
- Up to 16 native SAS/SATA ports in a LP/MD2 design
- 12 Gbps and 6 Gbps compatibility with HDD or SSD SAS/SATA devices
- 12 Gbps throughput per SAS port using mini-SAS HD connectors
- 12 Gbps RAID-on-Chip (ROC), x8 PCIe Gen3 interface with 12 Gbps SAS ports to enable a new generation of performance
- >700K IOPS; 6.6 Gbps sequential reads, 6.2 Gbps sequential writes

GREEN POWER

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Key Software Features	• maxCache 3.0 caching software (Series 8Q only) • Flexible configuration: HBA mode and auto volume mode for automatic deployment • Optimized disk utilization (multiple arrays per disk) • Supports up to 256 SAS or SATA devices using SAS expanders • Support for native 4K sector SAS and SATA devices in addition to 512-byte sector devices • Hybrid RAID 1 and 10 • Quick initialization	• Online capacity expansion • Copyback hot spare • Dynamic caching algorithm • Native Command Queuing (NCQ) • Background initialization • Hot-plug drive support • RAID level migration • Hot spares — global, dedicated, and pooled • Automatic/manual rebuild of hot spares • SES and SAF-TE enclosure management • Configurable stripe size • S.M.A.R.T. support	• Multiple arrays per disk drive • Dynamic sector repair • Staggered drive spin-up • Bootable array support • Support for tape devices, autoloaders • MSI-X support for all device drivers for all supported operating systems • Secure boot support for the uEFI host BIOS • USB image available on storage.microsemi.com/en-us/support/start to boot maxView GUI from any USB device for enhanced GUI-based setup and offline maintenance
Management Utilities	maxView Storage Manager • Web-based GUI management utility • OS X support: Windows®, Linux®, Solaris, VMware • Remote configuration, monitoring, and notification • Remote firmware updates • SMI-S support • SMTP	ARCCONF • Command line interface • SMI-S support for VMware BIOS Configuration Utility (CTRL+A) • Legacy configuration utility • Flashable BIOS support	uEFI BIOS Configuration Utility • HII-based configuration utility • Flashable BIOS support Event Monitor • Lightweight event monitoring and logging tool • Distributes adapter events and notifies user
Operating Systems	Microsoft® Windows, Red Hat Linux, SUSE Linux, Fedora, Debian Linux, Ubuntu Linux, Sun Solaris, FreeBSD, VMware ESXi. The latest drivers are available at storage.microsemi.com/en-us/support/start		
Dimensions	2.535" H × 6.6" L (64 mm × 167 mm)		
Operating Temperature	0°C to 55°C (with 200 LFM airflow, without Flash); 0°C to 50°C (with 200 LFM airflow, with Flash) Note: This adapter contains a powerful RAID processor that requires adequate airflow to operate reliably. Only install this card into server or PC chassis with at least 200 LFM airflow. Temperature measured 1 inch from RAID adapter		
Operating Current	0.1 A at 3.3 VDC, 1.2 A at 12.0 VDC (8405, 8805, 8885, 8885Q), 1.0 A at 3.3 VDC, 1.1 A at 12.0 VDC (81605ZQ, 81605Z)		
Regulatory certification	CE, FCC, UL, C-tick, VCCI, KCC, CNS		
Environmental compliance	RoHS		
MTBF	2 million hours at 40°C		
Warranty	3 years		

RAID adapter	81605ZQ	8885Q	81605Z	8885	8805	8405
Order Number	2281600-R (single)	2277100-R (single)	2287101-R (single)	2277000-R (single)	2277500-R (single)	2277600-R (single)
RAID levels	0,1,1E,5,6,10, 50, 60	0,1,1E,5,6,10, 50, 60	0,1,1E,5,6,10, 50, 60	0,1,1E,5,6,10, 50, 60	0,1,1E,5,6,10, 50, 60	0,1,1E,5,6,10, 50, 60
Ports	16 internal	8 internal/8 external	16 internal	8 internal/8 external	8 internal	4 internal
Connectors	4 x SFF-8643	2 x SFF-8643 2 x SFF-8644	4 x SFF-8643	2 x SFF-8643 2 x SFF-8644	2 x SFF-8643	1 x SFF-8643
Bus Interface	8-Lane PCIe Gen3	8-Lane PCIe Gen3	8-Lane PCIe Gen3	8-Lane PCIe Gen3	8-Lane PCIe Gen3	8-Lane PCIe Gen3
Processor	12 Gbps RoC	12 Gbps RoC	12 Gbps RoC	12 Gbps RoC	12 Gbp/s RoC	12 Gbps RoC
Cache	1024 MB	1024 MB	1024 MB	1024 MB	1024 MB	1024 MB
Cache Protection	AFM-700 Flash backup (embedded)	AFM-700 (included)	Flash backup (embedded), AFM-700 (included)	AFM-700 (optional)	AFM-700 (optional)	AFM-700 (optional)
SSD Cache	maxCache 3.0	maxCache 3.0	–	–	–	–

For More Information

https://www.microsemi.com/product-directory/raid-adapters/4022-series8

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