Adaptec® SmartRAID 3101E-4i and SmartRAID 3102E-8i

Entry-Level 12 Gbps PCIe® Gen 3 SAS/SATA RAID Adapters

Maximum Performance and Flexibility

Data center, IT and general consumer server and workstation environments have a broad range of requirements—from basic connectivity to extreme data storage capabilities. The SmartRAID 3100E 12 Gbps PCIe Gen 3 SAS/SATA RAID adapters deliver an entry-level solution with the robustness and performance of hardware RAID and the industry leading power of the SmartRAID 3100 series. This solution provides significant performance acceleration over other entry-level adapter card solutions through a built-in 1/2 GB DRAM cache , thus delivering a performant hardware RAID solution for cost-sensitive platforms that don't require the full capabilities of our full-featured SmartRAID adapters. The SmartRAID 3100E supports the following RAID levels: RAID 0, 1, 1 ADM, 10, and 10 ADM. Both models meet the requirements of industrial PC workstations or entry-level servers. The 3101E-4i and the 3102E-8i, with four or eight, internal SAS/SATA ports respectively, support a maximum of four and eight directly connected devices respectively[1].



Advanced Data Protect and Ease of Use

Microchip's industry-leading Smart Storage Stack delivers maximum reliability and best-in-class performance that all RAID levels come to expect, plus unique features like Mixed Mode support (RAID and HBA devices can be used simultaneously), adaptive power management (reduces power consumption up to 30 percent), and Advanced Data Management (ADM) features that allow data migration from existing RAID arrays to new ones when upgrading old hard disks or worn-out SSDs.

Adaptec® maxView provides an HTML5 web interface that can be used in standard desktops and mobile browsers for all storage configuration and management needs. It supports local and remote management, and comes with plugins for major storage management software suites for enterprises and data centers.

maxView

SASHD

12Gb/s Serial Attached SCSI

Benefits

- Ideal for entry-level servers and workstations that require connectivity to 6G SATA or SAS-3 drives for redundant boot support and I/O intensive applications such as databases or video editing
- True hardware RAID 0, 1, 1 ADM, 10, 10 ADM (also supports Hybrid RAID)
- Accelerates storage with up to 2 GB of high-speed DRAM cache

Highlights

- RAID levels: 0, 1, 10, 1 ADM and 10 ADM
- Supports simultaneous use of RAID and raw devices (mixed mode)
- Up to 8 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
- 1.6M random read 4 KB IOPS[2]
- Industry's lowest-power 28 nm SmartROC SAS/SATA protocol controller
- Quality and reliability through the unified, hardened Smart Storage stack, which is deployed in over 30M servers

[1] SAS expanders are not supported.

[2] 8-port adapters can achieve 1.6M random read IOPS for 4 KB I/Os. Adapters with 4 ports are capable of 840K IOPS.

Parameters

Parameter	Description		
Key Software Features	• Mixed mode allows devices connected to the same adapter to be used in RAID and HBA modes simultaneously • Adapter dynamic power management to save up to 30% power • Support for SAS and SATA target devices • Support for native 4K sector SAS/SATA devices in addition to 512-byte sector devices • RAID ADM through triple mirroring, move array, and split mirroring	• 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 SGPIO enclosure management • Configurable stripe size • S.M.A.R.T. support	• BMC support • Dynamic sector repair • Staggered drive spin-up • Bootable array support • Support for tape devices, autoloaders • Smart PQI driver with multip queue and MSI-X support for all device drivers for all supported OSes • 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 • Windows®, Linux®, Solaris, VMware support • 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	ROM-Based uEFI BIOS Configuration Utilities • HII-based pre-boot GUI configuration utility • Arcconf CLI for uEFI shell • Flashable BIOS support Event Monitor • Lightweight event monitoring and logging tool • Distributes adapter events and notifies user
Operating Systems	Microsoft Windows Server, Windows 10, Windows 8.1, Red Hat Enterprise Linux, CentOS, SuSE Linux® Enterprise Server, Ubuntu Linux, Debian Linux, Oracle Linux, Citrix XenServer, Solaris, FreeBSD, VMware ESXi, and open-source Linux drivers. The latest drivers are available at storage.microsemi.com/en-us/support/start. Supports open-source Linux drivers and inbox drivers.		
CPU Architecture	Intel, AMD		
Dimensions	2.535" H × 6.6" L (64 mm × 167 mm)		
Operating Temperature	0°C to 55°C with 200 LFM airflow 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.		
Regulatory Certification	CE, FCC, UL, C-tick, VCCI, KCC, CNS		
Environmental Compliance	RoHS		
MTBF	1.37 million hours measured at 40°C		
Warranty	3 years		

Ordering Information

SmartRAID 3100 Series	Part Number	RAID Levels	Host Interface	SAS/SATA Ports	Cache	Cache Width	Cache Backup (ZMCP)	maxCache™ 4.0
SmartRAID 3102E-8i	2304200-R	0, 1, 1 ADM, 10, 10 ADM	8-Lane PCIe® Gen 3	8 internal	2 GB DDR4/2100 MHz	64-bit	No	No
SmartRAID 3101E-4i	2304400-R			4 internal	1 GB DDR4/2100 MHz	32-bit	No	No

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