

# Alnico iSCSI RAID Series

## Single-Port / Dual-Port 10GbE or Dual-Port / Quad-Port GbE iSCSI to SAS / SATA-II RAID Subsystem

### ► IP SAN Technology at a Glance

The maturity and popularity of iSCSI technology makes iSCSI re-define the deployment of storage technology. Today businesses are able to deploy a high performance IP SAN by leveraging their storage resources over an existing IP infrastructure without the need for investments of special-purpose cabling for Fiber Channel SAN. Other businesses that have built their FC SAN can also introduce IP SAN by simply installing bridges or gateways in order to construct a heterogeneous IP SAN to maximize their storage flexibility and availability.

### ► Lower TCO and Higher Flexibility

Alnico iSCSI array's cost-performance offers customers a better alternative and value that rivals FC SAN. Alnico 8 Series iSCSI array is not only capable of delivering outstanding performance up to 600MBps / 120K I/Ops in full-duplex mode, but also an optimized and cost-effective TCO (total cost of ownership) can be achieved by rapidly deploying IP SAN environments with existing GbE switches and the plentiful IP network that could be painlessly managed and maintained without further ado. Accompanied with hardware built-in snapshot function, Alnico iSCSI RAID can easily replicate several point-in-time data that could be instantly recovered at any time without interrupting production, the built-in snapshot function at the same time cuts down the licensing cost of backup software. With the excellence of cost-performance the Alnico iSCSI array possesses, customers could maximize their storage resource utilization and their TCO will be protected for the future.

### ► Product Feature Highlights

- Single-Port 10GbE, Dual-Port 10GbE, Dual-Port GbE, or Quad-Port GbE iSCSI host connectivity.
- Dual redundant controller support. ( AL-8241i-D and AL-8241iA-D )
- Supports link aggregation, fail-over, and load-balancing.
- Built-in snapshot, volume backup and recovery become an easy task.
- Support iSCSI jumbo frame, maximizing data transmission efficiency.
- Multiple iSCSI target nodes support.
- Support CRC checksum for Header Digest and Data Digest, re-ensuring data integrity.
- Support CHAP encryption and host access control for data protection.
- N-way mirror, an advanced disk-mirroring configuration, makes N copies of mirrored disks.
- Support RAID Level 0, 1, 0+1, N-way mirror, 3, 5, 6, 10, 50, 60, JBOD.
- On-line volume migration for zero down-time.
- Support disk spin-down ( MAID ) for idle disks to extend disk lifespan.
- Hard drive support: SAS 3.0 and 6.0 Gb/s, SATA 1.5 Gb/s, 3.0 Gb/s, and 6.0Gb/s. ( model dependent )
- SAS JBOD expansion support, maximum 80 drives. ( 1 x RAID + 4 x JBODs )
- Complete modular and hot-swappable design for Power supply, FAN module, and disk trays.
- Management UI via serial console, SSH telnet, HTTP Web UI, and secured Web. ( HTTPS )



# GbE / 10GbE iSCSI to SAS / SATA-II Raid Subsystem



- Single/Dual 10GbE or Dual/Quad GbE iSCSI host connectivity
- Robust Performance up to 600MBps /120K IOPs
- Advanced RAID Controller Redundancy
- Available for 4U 24-bay, 3U 16-bay, and 2U 12-bay

Alnico iSCSI RAID Series							
	<b>Alnico 6 iSCSI</b>	<b>Alnico 8 iSCSI</b>			<b>Alnico SAS JBOD</b>		
<b>Storage Processor</b>	<b>Intel IOP341</b>		<b>Intel IOP342</b>				
<b>Model</b>	<b>AL-6120i</b>	<b>AL-8121i</b>	<b>AL-8161i</b>	<b>AL-8241i</b>		<b>AL-8161Ji</b> <b>AL-8241Ji</b>	
<b>Controller Number</b>	1	1	1	8 2 4 1 i - S	8 2 4 1 i - D	8 2 4 1 iA - S   8 2 4 1 iA - D	
<b>RAID Features</b>	<ul style="list-style-type: none"> <li>• RAID Levels: 0, 1, 3, 5, 6, 0+1, 10, 30, 50, 60 &amp; JBOD</li> <li>• Up to 2GB Memory support with ECC protection</li> <li>• Auto drive insertion / removal detection and rebuilding</li> <li>• 1024 logical volumes in the system ( AL-8XX1i )</li> <li>• 256 logical volumes in the system ( AL-6120i )</li> <li>• Disk auto spin-down support</li> <li>• Online capacity expansion and RAID level migration simultaneously</li> <li>• SnapShot-on-the-box: Up to 16 logical volume supported with rollback enabled</li> <li>• Each logical volume support up to 32 snapshot volumes, total 512 snapshot volumes per system</li> <li>• N-way mirror supported</li> <li>• Global and dedicated hot spare disks</li> <li>• Online RAID level/strip size migration</li> <li>• Offline Array roaming</li> <li>• Hardware iSCSI off-load engine support</li> </ul>					AL-8241Ji supports dual redundant I/O expansion module.	
<b>iSCSI Features</b>	<ul style="list-style-type: none"> <li>• iSCSI Jumbo frame support</li> <li>• iSNS &amp; DHCP support</li> <li>• CHAP authentication enabled</li> <li>• Support Link aggregation/ Trunking</li> <li>• Support Microsoft MPIO &amp; MC/S</li> <li>• iSCSI GbE ports support independent access, failover, and load-balancing</li> <li>• Up to 32 host connections per controller</li> <li>• Up to 16 hosts clustered per volume</li> <li>• Support Windows, Linux, and MAC OS</li> <li>• Multiple iSCSI target nodes support ( AL-8XX1i only )</li> <li>• Header/Data digest support</li> </ul>						
<b>System Type</b>	2U Rackmount	2U Rackmount	3U Rackmount	4U Rackmount		3U   4U	
<b>Host Interface</b>	Dual GbE ports	Quad GbE ports per controller		Quad GbE ports per controller	Single (Optional dual) 10GbE port per controller	2 x up stream miniSAS (4x3Gb) ports   1 x up stream miniSAS (4x6Gb) port	
<b>Disk Interface</b>	12 x SATA-II drives	12 x SAS/ SATA-II drives	16 x SAS / SATA-II drives	24 x SAS / SATA-II drives		16 x SAS / SATA-II   24 x 6Gb SAS/SATA	
<b>Capacity Expansion</b>	No expansion port	One expansion port to connect up to 4 JBOD units			Up to 80 drives support		AL-8161Ji: 1 x down stream miniSAS (4x3Gb) expansion port
<b>Battery Backup</b>	Optional, supporting 72 hours battery backup time					AL-8241Ji: 1 x down stream miniSAS (4x6Gb) expansion port	
<b>RAID Management</b>	Firmware-embedded manager through Front LCD control panel Field-upgradeable firmware in flash ROM Management GUI via firmware-embedded serial console, SSH telnet, HTTP Web GUI, and secured Web UI (HTTPS)						
<b>Monitoring / Indicators</b>	All system status can be monitored via Firmware-embedded SSH telnet, HTTP & HTTPS based RAID manager All system status can be monitored via Syslog and Windows messenger System status indication through LCD, LED and alarm buzzer All system events can be sent to multiple user alerts to be via "Plain English" e-mails Firmware-embedded SNMP agent allows remote to monitor events through LAN with no SNMP agent required					Through in-band SES (SCSI Enclosure Service)	
<b>Operating System</b>	Single controller: OS independent and transparent Redundant controller: MPIO ( Multipath I/O ) driver required						
<b>Power Supply</b>	Redundant by dual 375W		Redundant by dual 460W	Redundant by three 460W		Redundant by dual 460W   Redundant by three 460W	
<b>Electrical</b>	AC Voltage 100-240 VAC / AC (+- 10% Full Range), Frequency 50-60Hz						
<b>Temperature</b>	5 to 35 degree C. Non Operating Temperature: -40 to 60 degree C.						
<b>Relative Humidity</b>	20% to 80% non-condensing						
<b>Dimension</b>	446mm(W) x 480mm(D) x 2U	446mm(W) x 527mm(D) x 2U	446mm(W) x 510mm(D) x 3U	446mm(W) x 550mm(D) x 4U		446mm(W) x 510mm(D) x 3U 446mm(W) x 550mm(D) x 4U	
<b>Weight</b>	13.5KGS	17KGS	20KGS	36.5KGS		20KGS   36.5KGS	

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