Intel® Storage System SSR212PP
based on EMC AX150* technology

Simple, affordable, and scalable enterprise-class storage for small to medium businesses

The Intel® Storage System SSR212PP provides fast, reliable networked storage designed for a wide range of application environments. The Intel SSR212PP family provides an ideal, low-cost platform for small businesses that need to consolidate storage for a small number of applications. Dual-active storage processor-based server models are well suited for medium-sized businesses that require high availability and wish to consolidate a large number of applications on a single, robust platform. Organizations can choose from high-performance Fibre Channel network connectivity, or standards-based, cost-effective iSCSI connectivity. The Intel SSR212PP family provides an ideal foundation for flexible, reliable, high-performance networked storage solutions.

- Single- and dual-controller models
- Fibre Channel or iSCSI connection models
- Up to 12 serial advanced technology attachment (SATA II) disks—250 GB or 500 GB HDD models
- Up to 6TB of raw storage capacity in a 2U form factor
- Simple installation and integrated management software with Navisphere® Express
- Affordable networked storage
A look inside

The Intel SSR212PP storage family extends the benefits of networked storage—including consolidation, automation, and advanced data protection—to a broad range of customers by providing a cost-effective alternative to direct-attached storage. The Intel SSR212PP combines the advanced functionality and data protection features of redundant array of independent disks (RAID) architecture with high-capacity SATA II disk drives to help deliver highly functional and cost-effective network storage.

Users who previously relied on direct-attach and internal server-based storage capacity to support Microsoft Windows®, NetWare®, and Linux® servers can now take advantage of a networked storage solution from Intel that can scale with their data storage needs. Designed for easy installation and use, the Intel SSR212PP includes software for simple Web-based array and storage management. The Intel SSR212PP fits uniquely with small to medium business requirements and distributed workgroup environments.

The system features up to 12 SATA drives in a 2U (3.5-inch) rack-mountable enclosure. Capacity can scale from three to twelve drives, and, with 250 GB and 500 GB disks, can provide up to 6 TB of raw storage capacity. The Intel SSR212PP supports a variety of server platforms with either storage area network (SAN) or direct-attach connections.

Flexible connectivity options for networked storage

iSCSI and Fibre Channel models allow users to choose the network interconnect right for their environment.

- **iSCSI arrays** provide cost-effective shared storage using readily available Internet protocol (IP) networking components, for either SAN or direct-attach connectivity using Ethernet* switches.

- **Fibre Channel arrays** can be connected to local servers with low-cost Fibre Channel fabric host bus adapters (HBAs) to provide a simple direct-attached shared storage solution. With the addition of one or more fabric switches, up to 10 servers per array can be supported.

Each Intel SSR212PP can support up to 10 hosts and 256 virtual disks1. The dual-controller Intel SSR212PP models support up to 20 initiators for 10 high-availability host connections. PowerPath® for Intel SSR212PP provides enhanced data availability and performance through path failover and load balancing in high-availability installations.

**Two sets of models support a range of application requirements, deployment, and scalability needs**

The Intel SSR212PP family includes two sets of models that support a range of application requirements, deployments, and scalability needs.

- **Single controller system supports varying application, deployment, and scale requirements.** The single-controller Intel SSR212PP provides a low-cost RAID solution that includes key data-integrity features, such as RAID 5 and RAID 1/0 data protection and battery-backed cache, and is ideally suited for customers beginning to implement network storage.

  With two front-end host ports, the Intel SSR212PP supports two direct-attached servers, or up to 10 network-attached hosts connected through a switch.

  The Intel SSR212PP features 512 MB of processor memory with battery-backed cache to protect against data loss in an outage (for up to 96 hours). RAID technology combines efficiency with availability and protection against data loss if a disk drive fails.

  With hot-swap disk drives and power supplies, the Intel SSR212PP is simple to maintain, while redundant cooling fans and an optional redundant power supply provide an extra measure of reliability.

- **Dual-controller system provides high availability at an affordable price.** The dual-controller Intel SSR212PP provides dual-active storage processors, mirrored cache, and dual power supplies to deliver high availability and end-to-end data protection for business-critical applications.

  Dual storage processors, dual hot-swappable power supplies, and N+1 redundant cooling result in superior availability, data protection, and integrity. An available rack-mount uninterruptible power supply (UPS)2 allows the array to de-stage data from cache to disk in the event of a power failure. The operation of the UPS is

---

1 Or logical unit numbers (LUNs)
2 Required with the Intel® SSR212PP dual-controller models
fully integrated with the Intel SSR212PP to provide a smooth shutdown of the array in the event of a power outage, further enhancing data protection and recovery. The dual controller Intel SSR212PP provides high-availability storage for up to four direct-attached hosts or two-host clusters, or for up to 10 fabric-connected servers in a department.

Improved I/O performance with SATA II disk drive technology

The Intel SSR212PP family supports SATA II disk drives, providing high disk capacity, cost-effective performance, and advanced data integrity. SATA II provides as much as 3.0 GB of data transfer and native command queuing (NCC), to streamline sequential data transfers. SATA II technology significantly improves performance for I/O-intensive applications, such as messaging, file serving, and databases. The Intel SSR212PP hot-swap design and user-friendly configuration tools make it practical to start small and easily add additional drives as storage needs grow.

Data is protected with array-based failover and replication

The Intel SSR212PP improves availability and reduces exposure to outages. The system cooling modules provide N+1 redundancy. Dual hot-swappable power supplies ensure no single point of failure.

The Intel SSR212PP also includes an integrated, array-based snapshot capability. Up to eight concurrent snapshots can be created, enabling users to improve and simplify backup and recovery operations.

Simple installation and integrated management

The Intel SSR212PP is designed for simple installation, ease of use, and convenient maintainability. All functionality is included and loaded. A wizard-based utility guides users through the installation process. All major components, including disk drives, power supplies, cooling fans, and processor modules, are designed as customer-replaceable units (CRUs).

The Navisphere Express interface, included with the Intel SSR212PP, provides new levels of ease of use and simplified management. The functionality required to install, configure, and manage the Intel SSR212PP is pre-installed in host environments. The Intel SSR212PP includes a wizard-driven management interface for user-friendly array setup and monitoring, shared storage management, and automated path failover across host and networked connections.

### Intel® Storage System SSR212PP

<table>
<thead>
<tr>
<th>Features</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flexible connectivity options for networked storage</td>
<td>Allows you to choose the network interconnect that is right for your environment</td>
</tr>
<tr>
<td>Single controller system supports varying application, deployment, and scaling requirement</td>
<td>Provides a low-cost RAID solution that includes key data integrity features</td>
</tr>
<tr>
<td>Dual-controller system provides dual-active storage processors, mirrored cache, and dual power supplies</td>
<td>Delivers high availability and end-to-end data protection at an affordable price</td>
</tr>
<tr>
<td>Improved I/O performance with SATA II disk drive technology</td>
<td>Delivers high-volume data throughput to significantly improve performance of I/O-intensive applications, such as messaging, file serving, and databases</td>
</tr>
<tr>
<td>Array-based failover and replication</td>
<td>Offers excellent data protection and availability</td>
</tr>
<tr>
<td>Simple installation</td>
<td>Reduces time to benefit</td>
</tr>
<tr>
<td>Integrated management software</td>
<td>Provides comprehensive system management</td>
</tr>
</tbody>
</table>
### Intel® Storage System SSR212PP Specifications

<table>
<thead>
<tr>
<th>Specifications</th>
<th>SSR212PPf-500</th>
<th>SSR212PPi-500</th>
<th>SSR212PPf-250</th>
<th>SSR212PPi-250</th>
<th>SSR212PP2f-500</th>
<th>SSR212PP2i-500</th>
<th>SSR212PP2f-250</th>
<th>SSR212PP2i-250</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controllers per array</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Ports per controller</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Number of HDDs</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>HDD capacity</td>
<td>500 GB</td>
<td>500 GB</td>
<td>250 GB</td>
<td>250 GB</td>
<td>500 GB</td>
<td>500 GB</td>
<td>250 GB</td>
<td>250 GB</td>
</tr>
<tr>
<td>Connectivity</td>
<td>Fibre Channel</td>
<td>Fibre Channel</td>
<td>Fibre Channel</td>
<td>Fibre Channel</td>
<td>Fibre Channel</td>
<td>Fibre Channel</td>
<td>Fibre Channel</td>
<td>Fibre Channel</td>
</tr>
<tr>
<td>Operating system support</td>
<td>Windows®, Linux®, Netware®</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max. cable length</td>
<td>Shortwave optical: 300 m (1200 ft), FC-AI and FC-SW support</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Support for up to 16 servers (High availability or non-high-availability)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Back-end disk connectivity and RAID levels

- **RAID levels**: RAID 5: Independent data access to as many as 3 to 12 drives (with striped parity), RAID 510: Data mirrored, then striped across as many as 2 to 12 drives (configurable global hot spare).
- **Drive interface**
  - Faller from each storage processor to all drives is possible: 250 GB SATA II, 500 GB SATA II.
  - Formatted capacity per drive: 233 GB, 465 GB.
  - Form factor: 3.5 in, 5.5 in.
  - Height: 10 in.
  - Rotational speed: 7200 RPM.
  - Interface: 3.0 serial ATA I, 3.0 serial ATA II.
  - Data buffer: 16 MB.
  - Transfer rates, buffer to/from media: 41-77 MB/sec.
  - SP buffer: 300 MB/sec (max).
  - Access time: Average seek time: 9.0 ms read, 8.2 ms read, Rotational latency: 4.17 ms.

#### Integrated management features

- **Array-based management utility**: Web-accessible configuration and management for an individual array.
- **Shared storage control**: Data protection, shared storage access, and security for heterogeneous SAN environments.
- **Path management**: Path failover for continuous data access and load balancing for optimal performance.
- **Snapshot management**: Create local point-in-time snapshots for flexible backup.

#### System expansion

- **Total UUNs**: 256
- **Total LUNs**: 8
- **Total hosts**: 16
- **Total SAX150PP per host**: 4
- **Total clustered hosts**: 4 nodes

#### Dimensions

- **Form factor**: Rack
- **Height**: 3.415 in. (88.8 cm)
- **Width**: 17.72 in. (45.0 cm)
- **Depth**: 24.5 in. (62.3 cm)
- **Weight (max. configuration)**: 49 lb. (21.8 kg)
- **UPS units**: 2

#### Power

- **Power supplies per array**: One
- **Frequency**: 47-63 Hz
- **AC voltage phase**: 90-254 Vrms, single phase, 90-264 Vrms, single phase
- **Power factor**: 95 (typ)
- **Power consumption (max)**: 275 VA, 250W
- **Heat dissipation (max)**: 850 BTU/hour (each supply), 1110 BTU/hour
- **Protection**: 10 A, internally fused
- **AL circuits**: Single, external AC circuits
- **AL power capability**: 400W cabinet (optional)
- **Operating environment**: Temperature: 50°F to 104°F, 10°C to 40°C.
- **Relative Humidity**: From 20 percent to 80 percent (non-condensing)
- **Altitude**: 8000 ft. (2438.4 m) at 104° F (40° C) max.

#### Regulatory standards

- **Emissions and Immunity**: FCC Class A, CE Mark Class B, ICES-003 Class A (for Canada), AS/NZS 3548 Class A (for Australia and New Zealand)

#### Quality and Safety Standards

- **UL 1950**, EN60950

For general information on storage systems from Intel, visit: [www.intel.com/design/servers/storage/index.htm](http://www.intel.com/design/servers/storage/index.htm)

For product information about Intel® Storage System SSR212PP, visit: [www.intel.com/design/servers/storage/ssr212pp/index.htm](http://www.intel.com/design/servers/storage/ssr212pp/index.htm)

For more information on how to make the Intel® Storage System SSR212PP part of your server environment, contact an Intel® Channel Membership Programs participant.