

Open-E iSCSI-R3

What is iSCSI?

iSCSI is an IP-based storage networking standard used to manage storage over long distances. iSCSI is used to link data storage devices and to facilitate data transfers over the Intra and Internet.

The iSCSI Target Modules (ITMs) are managed by the administrator as local hard drives. Due to the ubiquity of IP networks, iSCSI can enable location independent data storage and retrieval.

iSCSI enables low-cost storage consolidation without the usual expense and incompatibility associated with Fibre Channel Storage Area Networks (SANs). iSCSI is especially appealing as it facilitates solutions that provide rapid and efficient transport of block-level I/O data, which is important for IT organizations where simplicity, flexibility, and price/performance are critical decision factors. Unlike Fibre Channel SANs, iSCSI can run over long distances utilizing existing Ethernet networks, providing easy migration and administration since iSCSI leverages existing knowledge of IP technology.

Open-E iSCSI-R3

Open-E iSCSI-R3 is a cost-effective, easy to manage operating system, which turns any computer system into a powerful iSCSI network storage device in about 10 minutes. The combination of enterprise features and intuitive, simple Web GUI management make iSCSI-R3 a perfect choice for every organization.

With Open-E iSCSI-R3 software, users can cost-effectively and quickly add storage to an existing network, consolidate storage and backups for multiple servers, centralize storage management with optimal performance and data protection, and improve data availability and efficiency.

Open-E iSCSI-R3 is designed with both the simplicity and ease-of-use demanded by SMB users, and the advanced features required by Enterprise users. Cost effective solutions, such as Remote Replication for disaster recovery and Multiple Scheduled Snapshots for data protection, are now available to businesses of all sizes.

The Open-E iSCSI-R3 software increases the capabilities and performance of storage data transmission in a SAN. It offers the best combination of data throughput, security, compatibility, management and flexibility. Integrated technologies from SAN including, IP security, Adaptive Load Balancing, Online Logical Volume Expansion, support for multi-CPU's, 10Gb Ethernet cards and Fibre Channel, make Open-E iSCSI-R3 a cost effective alternative to Fibre Channel SANs.



Open-E iSCSI-R3 Key Benefits



Enables storage consolidation, reducing hardware costs and complexity for all types of businesses



Centralizes storage management reducing administrative costs and improving performance



Increases scalability and reliability of disk storage and builds scalable, secure and highly available SANs



Provides reliable, cost effective disaster recovery

High Data Accessibility and Availability iSCSI-R3 Multipathing (MPIO)

Open-E iSCSI-R3 Multipathing enables redundant logical paths or multiple connections, between the server and the storage device. In the event that one or more of the logical paths fail, users can still access their data using the alternate paths.

InfiniBand Support

Open-E iSCSI-R3 supports 10GbE, FC HBA and InfiniBand for additional flexibility and performance in high speed network environments.

List of features iSCSI-R3

ADMINISTRATION

Web-based Graphical User Interface	✓
Secured Administration Access	✓
Console Tools	✓
Tuning Tools	✓
Remote Access for Console	✓
Automated Updating of OS	✓
Task Manager and Schedule Manager	✓

NETWORK MANAGEMENT

DHCP Client	✓
Multiple Network Interface Card (NICs) Support	✓
Teaming/Bonding (including Adapter Fault Tolerance)	✓
10 Gb Ethernet Support	✓
Infiniband Support	✓
Proxy settings	✓
IP-sec	✓
Jumbo Frames Support	✓

STORAGE MANAGEMENT

Software RAID 0, 1, 5, 6 with E-Mail Notification	✓
Multiple Hardware RAID Controller Support	✓
Multiple FibreChannel HBA Support	✓
Support for over 16TB Logical Volumes	✓
Multiple Active Snapshots	✓
Online Logical Volume Expansion	✓
Support for Online Capacity Expansion	✓

MONITORING

Hardware Monitoring	✓
SNMP v2, v3	✓
E-Mail Notification	✓
Log Function	✓

HARDWARE SUPPORT

Multiple CPU Support (32x)	✓
UPS and Network UPS Support	✓

SPECIFIC iSCSI FUNCTIONALITY

IP Address Restrictions for a Target	✓
CHAP User Management	✓
MPIO Support	✓
Volume Replication	✓
Snapshot Copy	✓

OTHER

Support for SWAP	✓
Help with search and index	✓
Extended save & restore settings	✓
Connections Status Sessions Management	✓
Pay As You Grow Storage Capacity (TB)*	4/8/16

* Storage Capacity can be extended with downloadable licenses

image of the Logical Volume (LV). The snapshot image can be used for both consistent and temporary backup, ensuring that users still have uninterrupted and complete access to the LV. Also, if a user accidentally deletes or incorrectly modifies a file, that file can be recovered from a previous snapshot image. Open-E iSCSI-R3 supports "Multi-Snapshot with Scheduling" to create snapshots at predefined points in time (e.g. automatically every hour) further automating your backup processes.

Secured Administration Access

With iSCSI-R3 administrators can access and configure the iSCSI Target Modules through a web based, password protected user interface using Secured Administration Access. For optimal flexibility, Open-E iSCSI allows assignment of multiple administrators with different administrator rights.

Secure Upgrades

To optimize the upgrading process of the Open-E software, the iSCSI-R3 USB-DOM contains a shadow copy of the OS. In the event of an upgrade failure, the storage system can easily be switched to the former Open-E software version.

Fault Tolerance

iSCSI-R3 provides Adapter Fault Tolerance (AFT) to assure greater reliability by providing a secondary network adapter which automatically takes over if the primary network adapter fails. Additionally, iSCSI-R3 supports IP security (IPSec) a standard for securing Internet Protocol (IP) communications by encrypting and authenticating all IP packets. This provides security for the network layer.

UPS Support

An Uninterruptible Power Supply (UPS) eliminates the effects of a temporary power outage and provides safe shutdown, without loss of data, in the event of power failure. Open-E iSCSI-R3 supports Network UPS to ensure safe shutdown of all iSCSI-R3 targets in the network.

Hardware Monitoring

Open-E software enables users to monitor hardware status using the motherboard's sensors including: temperatures, voltages and fan speeds.

Optimal Performance

Multi CPU Support

Open-E iSCSI-R3 supports multi CPUs

to improve overall performance of the ITM by reducing latency across connections and increasing bandwidth for TCP/IP processing.

Hardware and Software RAID

Open-E iSCSI-R3 supports SCSI, Serial ATA and IDE controllers of the leading hardware RAID controller manufacturers for maximum flexibility and cost savings. The integrated software RAID 0, 1, 5 and 6 provides data security and additional cost savings. By mirroring hardware RAID arrays, the probability of failure is reduced. Additionally, Open-E iSCSI supports software RAID, so users can create software RAID over single hard drive or over existing hardware RAIDs.

Multiple Network Interface Card (NIC) Support

Open-E iSCSI-R3 supports usage of two or more network cards to access separate subnetworks. This enables administrators to select services to be enabled on specified NICs.

Adaptive Load Balancing (ALB)

Adaptive Load Balancing with iSCSI-R3 enhances data throughput by automatically routing data through alternative paths as the application or user demand changes.

TCP/IP Offload Engine (TOE) and Intel® I/O AT support

The TCP/IP Offload engine (TOE) lowers the host-system CPU communications overhead, increases bandwidth, reduces message latency across connections and improves the overall performance of the system. Open-E iSCSI-R3 supports 10GbE cards with TOE and Intel® I/O AT, accelerating the iSCSI protocol for block-level storage traffic between servers and ITMs.

Superior Flexibility

iSCSI Initiator Support

Open-E iSCSI-R3 is compatible with iSCSI software initiators from Microsoft, Linux and others. It also supports iSCSI HBAs from Adaptec, Alacritech, Intel and Qlogic.

Supported FC HBAs

Open-E iSCSI-R3 supports most FC HBAs from Emulex and QLogic for connecting external FC-SAN storage to an iSCSI-R3 system. With FC-HBA support, iSCSI-R3 can also be used as FC-iSCSI Gateway.

Complete Data Reliability and Security

The centralization of valuable data on an Open-E iSCSI-R3 server provides comprehensive and cost-effective data protection. Open-E iSCSI integrates, at no additional cost, critical features such as: Volume Replication, Snapshot Copy and backup and restore applications for proactive and comprehensive protection of all stored information.

Volume Replication for Disaster Recovery

iSCSI-R3 Volume Replication provides synchronous replication to copy critical company data to a secondary site in case of a disaster. Open-E iSCSI-R3 provides an extra layer of fault tolerance by mirroring two iSCSI target volumes. By allocating one iSCSI target as the primary data storage device and the second as a destination, data will synchronously be written to both iSCSI targets using a dedicated network connection. The primary iSCSI target will be replicated in real time, so that the data will be available if the primary storage system becomes unavailable.

Advanced Backup Features

Snapshot

The iSCSI-R3 Snapshot Copy provides an immediate point-in-time