



iStor Networks, Inc.[®]

**iS512-Series, iS325, GigaStorATX and GSC-408
Version 2.7.7 Release Notes**

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1 Introduction

iStor Networks, Inc. is pleased to announce the newest general software release, version 2.7.7 for the iStor family of products, including all GigaStorATX and GSC-408 controllers and iS325, iS512-08, iS512-04 and iS512-10G systems. The v2.7.7 software release notes identify what is included and what limitations have been identified as part of this release.

1.1 Purpose

The purpose of this document is to communicate the contents of the v2.7.7 software release. This document identifies supported functionality, what was originally supported, but not part of this release and what errata and caveats that may affect the operation of the iStor product family. This document is a release note for the v2.7.7 software release. It is not a product specification, nor does it specify the total functionality of the iStor products.

1.2 Related Documents

- *iStor iS512 Primary Array Quick Start Guide (document number iS512QS)*. This guide provides the information needed to get the iS512 Primary Array out of the box and operational with a connection to a host computer.
- *iStor iS512-SX Expansion Array Quick Start Guide (document number iS512SXQS)*. This guide is shipped with an iS512-SX expansion array and describes how to install and configure the Expansion Array for operation with the iS512 Primary Array.
- *iStor iS512 Hardware Reference Guide (document number iS512HWRF)*. This guide provides the hardware information for installing the iStor iS512 storage system.
- *iStor iS325 Hardware Reference Guide (document number iS325HWRF)*. This reference guide provides the hardware details for installing, configuring, and using the iStor iS325 storage array.
- *iStor Management Center Software User's Guide (document number iSMCSWUG)*. This guide provides the information needed to configure and manage storage on the storage system using the iStor Management Center graphical user interface (GUI).
- *iStor Command Line Interface User's Guide (document number iSCLIUG)*. This guide provides the information needed to configure and manage storage on the storage system using the iStor Command Line Interface (CLI).
- *iStor Virtual Disk Services Guide (document number D000045)*. This guide describes how to use Microsoft Virtual Disk Services (VDS) to manage the iStor storage arrays.
- *iStor Terminology Guide (document number iSTG)*. This guide is designed to assist you in the understanding of storage and SAN terminology that may be used in relation to the iStor Management Center and the storage system. You may want to print this guide while reviewing the information and concepts in this document.

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1.3 Update and Installation Requirements

The v2.7.7 software release is available as an initial factory installation and a field upgrade for the following products:

- **GigaStorATX** or **GSC-408** with v1.6, v2.0, v2.5, v2.6 or v2.7 software
- **iS325** system with v1.6, v2.0, v2.5, v2.6 or v2.7 software
- **iS512-08, iS512-04** or **iS512-10G** system with v1.6, v2.0, v2.5, v2.6 or v2.7 software

Any system that is running v1.5.1 software or earlier must first be upgraded to version 1.6, and then upgraded to this new version. For more information about the software upgrade process, please refer to your existing system documentation (**Chapter 4 “Launching the GigaStor Management Console”** in the GigaStor Functional Guide or **Chapter 5 “Launching the iS512 Storage System Management Console”** in the iStor Software User’s Guide).



The v2.7.7 software release requires the **Java Runtime Environment 6 (JRE 6) Release 1.6.0.0, or later** (<http://java.com>) to be installed on the system that will serve as the management host. The Java Runtime Environment software must be installed prior to the first connection to the iStor Management Center.

2 Product Features and Enhancements

All of the existing product features from previous versions are included in this release, including support for running the iStor Management Center from a host system with Windows XP, Windows Server 2003, Windows Server 2008, Windows Server 2008 R2 or Windows Vista. Note that iStor products that are running v2.7.7 cannot be managed by earlier versions of the iStor Management Center. In addition, support for the 32-bit version of Microsoft Virtual Disk Service (“VDS”) is available for Windows 2003 Server only (VDS support for Windows Server 2008 is not yet available), which allows you to use any VDS-based applications (such as Microsoft’s **DiskRaid** utility or **Storage Manager for SANs**) to configure and manage any iStor product. For more information, please refer to the appropriate Microsoft documentation.

The following are new or updated features that have been added since the v2.6.0 general release.

2.1 Management Center (Java GUI) Changes

2.1.1 Faster and Smoother Display

The Java GUI has been improved to display information more quickly. It also eliminates any flickering and other display anomalies that existed in previous versions.

2.1.2 Reorganized System Administration View

The System Administration View now displays individual tabs for all of the dialogs, rather than using multiple “leaves” for the General Settings, System Policies, User Accounts and Advanced Settings dialogs. In addition, the “Schedule” tab has been renamed to “**Tasks**”, and the Settings tab has been renamed to “**Control**”.

2.1.3 Ability to Select Drives when Reconfiguring a Volume

A new dialog appears in the “**Reconfigure Volume Wizard**” that allows you to select specific drives when reconfiguring a volume. This feature can also be used to make a volume wider when new drives are added, while maintaining the same volume composition.

2.1.4 Display of System Cache Mode on the Summary Dialog

The current system cache mode of either “**Write Thru**” or “**Write Back**” now appears on the System Summary dialog. The “Write Back” mode provides the highest system throughput by utilizing the cache memory in the controller, and it is only available when a fully charged battery is present.

2.1.5 Configurable Read-Ahead Cache Size

A new selection in the **Volume View**→**Advanced Settings** dialog allows you to set the read-ahead cache size for optimizing performance with a large number of concurrent data streams.

2.1.6 Optimize for Multi-Track Audio

A new selection in the **Volume View**→**Advanced Settings** dialog allows you to optimize the read-ahead caching algorithm for multi-track audio playback on a volume-by-volume basis.

2.1.7 Simplified Battery Policies

Reduced the number of selections on the **System Administration**→**System Policy** dialog for the Battery Policy to include only “**Ignore Battery Status**” and “**Stop Buffering I/O**”.

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2.1.8 Ability to Enable or Disable the iSCSI Network Ports

A new selection in the **Network Settings**→**Details** dialog allows you to enable or disable each of the iSCSI network ports (support for standalone systems only)

2.1.9 Display the Drive Technology (HDD or SSD)

The Drive Details dialog in the Physical Storage View now displays a suffix (“HDD” or “SSD”) after the primary drive type (SATA or SAS), if that information is reported by the hard drive.

2.1.10 Display of NAND Flash Memory Size

The size of the NAND Flash memory module now appears in the **System Administration**→**Controller** dialog. That information is also included in the system startup information that appears on the RS-232 Serial Diagnostic port output.

2.1.11 Synchronize Date and Time

A new button in the **System Administration**→**Advanced Settings** dialog allows you to set the date and time of the storage array to be the same as the management host system.

2.2 Support for Volumes Larger than 2TB

When using a standard volume block size of 512 bytes, most 32-bit operating systems (such as Windows XP) can support a maximum volume size of 2TB. This version introduces an alternate volume block size of 4096 bytes that will support volumes up to 16TB. A new setting in the **Volume Advanced Settings** dialog allows you to specify a block size of 4096 bytes for specific volumes that require it. You can also use a new setting in the **System Administration**→**Advanced Settings** dialog to set a system-wide default block size of 4096 bytes, so that any new volumes that are created will use that new block size.

2.3 New Spare Drive and Rebuild Policies

Volume rebuilds will now look for a spare or available drive that is the same type (SAS/SATA/SSD) and capacity as the drive that failed or was removed. If a matching drive cannot be found, the system will attempt to allocate any other similar type drive from the spare or available pool for the rebuild. If a similar drive type is not available, the system will use any spare or available drive, even if it is a different type. Finally, if there is no spare or available drive, the system will use any available capacity on any drive that is already in use. To reserve a drive as a spare, select the drive in the Physical Storage View, and click on the "**Reserve as Spare**" item. As always, reserving a drive as a spare will prevent it from being used when creating a new volume.

2.4 Support for SNMP Traps

In addition to generating an e-mail notification message for serious events, the system can now generate an SNMP (Simple Network Management Protocol) Trap that can be used with any third-party network management application that supports SNMP version 2. The SNMP parameters (including SNMP Server IP address, SNMP Server Port Number and SNMP Community String) can be configured in the **System Administration**→**Advanced Settings** dialog. In addition, a new "**Send Test Notifications**" button has been added to the bottom of the Advanced Settings dialog to allow you to validate your e-mail and/or SNMP parameters.

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2.5 Updated Linux Kernel

A newer version of the embedded Linux kernel has been implemented to improve the reliability and performance of the JFFS2 Flash file system in the controller.

2.6 Improved Diagnostic Capture Capabilities

The System Diagnostic Capture has been expanded to capture more detailed information about the system state, including all configuration and system logs, as well as the Serial Diagnostic Console messages. This new capability requires 256MB of NAND Flash memory on your controller. Most newer controllers are already equipped with 256MB of NAND Flash memory, but a few older controllers may only have 128MB of NAND Flash memory.

2.7 Maximum Buffer Memory Size for iS512

The maximum size of Buffer Memory for iS512-series controllers is no longer limited to 2GB. The system can support up to a maximum of 4GB of Buffer Memory.

2.8 Support for new System Hardware Configurations

This version includes support for the upcoming **iS105** and **iS316** hardware platforms.

2.9 New or Updated CLI Commands

2.9.1 Performing a Volume Integrity Scan

Renamed the `IntegrityScan` command in the `Volume` context to `IntegrityScanNow` to distinguish it from `IntegrityScanAt`.

2.9.2 Enable or Disable the iSCSI Network Ports

Added the ability to enable or disable each of the iSCSI data ports in the `iSCSI→Ports` context. Examples: `iSCSI.Ports[n].disable` or `iSCSI.Ports[n].enable`

2.9.3 Volume Block Size Attribute

In the `Volume` context, use the new `BlockSizeBytes` keyword to `SHOW` or `SET` the block size for the current volume to either 512 bytes or 4096 bytes.

2.9.4 System Default Volume Block Size Attribute

In the `System Administration Advanced Settings` context, the `DefaultVolumeBlockSizeBytes` keyword can be used to `SHOW` or `SET` the system-wide default block size to either 512 bytes or 4096 bytes.

2.9.5 SNMP Trap Notification Attributes

In the `External Connections Manager` context, the following keywords can be used to `SHOW` or `SET` the SNMP Notification attributes: `SNMPNotificationEnabled`, `SNMPClientIPAddress`, `SNMPClientPortNumber`, and `SNMPClientCommunityString`.

2.10 Fixed Issues since Version 2.6.0

The following additional issues have been fixed in this release:

- Recurring Fan Fault/Clear messages occur with some non-iStor enclosure types
- Repeated link transitions (Link Down/Up) can result in a non-responsive data port
- Systems with 84 drives may not always complete the startup sequence
- System with SATA drives can bugcheck under heavy I/O load when the Java GUI is active
- Improved reliability of redundant-controller processing during a Failover
- Eliminated the cause of “Task Management” entries in the Event Log
- Improved reliability the 10GbE interface when using CX-4 modules
- The system did not automatically reboot after an ARC 6 bugcheck occurred
- Improved iSCSI session disconnect/reconnect handling
- No email notification on battery failure
- No indication on SMART data changes
- Support for 4GB Cache Memory
- System bugcheck can occur during an orderly shutdown of the system
- iS512-HA software upgrade did not complete resulting in a lockup of both controllers
- System restart occurred on iSCSI reinstate connection
- iS512-HA secondary controller did not take over after a failover (failover failed)
- MC shows incorrect drive percentage used
- Number of Drives = 'Pick drives for Me' if system allowed to select drives
- MC shows extents drive status "Blank" when reconfiguring volumes
- Cannot use port after deleting VLAN
- Changing the VLAN setting for a LAG does not show up on the Management Center
- ARC-6 (Command in System Too Long) bugcheck can occur under heavy load
- User cannot clear the iSNS server IP to 0.0.0.0 in the Management Center
- Volume Manager bugcheck occurred after a failover while processing a reconfigure task
- PieMan events filling log when network configured with VLAN
- No event log entries for a disk configured as “Spare”
- iS512 system boot failure due to bad battery
- Cannot change Sync Cache parameter in the Management Center Volume Advanced Features
- System restart when copying data to a 4.21 TB Volume using 4K block size
- Setting Management Port IP and Default Gateway to different subnets prevents successful restarts
- SCC does not correctly handle a timed out message for the system's serial number

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2.11 Fixed Issues since Version 2.7.0

- System startup failed when the I2C cable was not connected on some enclosures

2.12 Fixed Issues since Version 2.7.1

- Updated the configuration parameters of the SAS expander on iS512-04 controllers
- Suppressed the Engineering Event Log entries for the SCSI Reserve/Release commands that could cause performance issues with VMware environments

2.13 Fixed Issues since Version 2.7.2

- Resolved constant Fan Fault/Fan Clear messages reported on iS325

2.14 Fixed Issues since Version 2.7.3

- Fixed a bug that prevented some SATA drives from being discovered during system startup.

2.15 Fixed Issues since Version 2.7.4

- Corrected the display of the **Write Cache Mode** on the System Summary panel to more accurately show the current mode (Write-Thru vs. Write-Back)

2.16 Fixed Issues since Version 2.7.5

- Fixed a bug that prevented a Volume Reconfigure request from completing when only the physical drives were changed (but no other volume composition changes).

2.17 Fixed Issues since Version 2.7.6


- Eliminated the restriction that prevented a pair of iS512-04 controllers with only one System Memory DIMM from binding.

3 Software Upgrade Procedure

For any existing system that is running software version 1.6, v2.0, v2.5, v2.6 or v2.7, you should obtain one of the following binary files from iStor Networks or your reseller:

System Type	File Name	File Size	Comments
iS512-Series	FUFI_2_7_7_1.iStor_iS512	40,403,766 bytes	For iS512 systems only
iS325	FUFI_2_7_7_1.iStor_iS325	39,950,195 bytes	For iS325 systems only
GigaStorATX or GSC-408	FUFI_2_7_7_1.iStor_GigaStorATX	40,317,678 bytes	Generic, no enclosure services


Note: If your host system is running Windows XP, be sure to disable the Windows Firewall before starting the software upgrade.

	<p>After a successfully upgrading your system to the v2.7.7 software release, it is recommended to save a new System Configuration File by using the following procedure:</p> <ol style="list-style-type: none"> 1. From within the Management Center GUI, click on the “System Administration” item for your specific system in the View panel 2. Click on the “Settings” tab 3. Click on the “General” leaf (if it is not already selected) 4. Click on the “Save” button below the “System Configuration” heading 5. Navigate to where you wish to save the configuration file and enter the filename 6. Click on “Save”
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3.1 Upgrade for systems that are running v2.x

Use the following procedure from the iStor Management Center to install this new software image:

1. Select **System Administration** in the upper-left frame
2. Select the **Settings** tab, and select the **General** leaf (if it is not already pre-selected)
3. Click on the **Upgrade** button
4. Browse for the software image file that you wish to upload, then click **Open**.
5. In response to the prompt “**After new software is uploaded, the remote system will be shutdown and restarted. Are you sure you want to do this?**”, click **OK** to proceed.
6. A progress bar will appear to show the progress of the software upload process.
7. After the software image is uploaded, a message prompts you to restart the system so that the new software image can take effect, and you should click **OK**.
8. After the system restarts (approximately 4 minutes), launch your web browser at the Management Port IP address and download the new Management Center GUI.

	<p>If your iS512 system is equipped with dual controllers, the software upgrade process will automatically upgrade both controllers as the same time if they are in a “Bound” state.</p>
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3.2 Upgrade for systems that are running v1.6

Use the following procedure from the version 1.6 iStor Management Center to install this new software image:

1. Select the **Physical Resources** tab in the left-most frame
2. Select the **System** item under Physical Resources
3. In the menu bar, select **View**, then select **Software Upgrade**
4. In response to the prompt “**Upgrading the software will require a restart of your system; Do you want to continue?**”, click **OK**
5. Browse for the software image file that you wish to upload, then click **Open**.
6. A progress bar will appear to show the progress of the software upload process.
7. After the software image is uploaded, a message prompts you to restart the system so that the new software image can take effect, and you should click **OK**.
8. When the system restarts, the Management Console GUI will be closed, and you would wait approximately 4 minutes for the system to complete the restart process without interruption.



After upgrading from v1.6, your system will present the new Graphical User Interface and new Target Creation paradigm that were implemented in version 2.0.0. For more information, please refer to the *Version 2 Upgrade Procedure Document*, which is available on the iStor Networks website. You must also install the Java 6 Run-Time Environment for your host system in order to use the new GUI.

3.3 Upgrade for systems that are running v1.5 or earlier

All systems that are running version 1.5.x (or earlier) must first be upgraded to version 1.6. That software image can be downloaded from the **Support→Tools and Resources** page of iStor’s public website at <http://www.istor.com>.

3.4 Personality Toolkit Base Images

Resellers and system integrators who prepare customized software images for an iStor controller in their own enclosure should select one of the following base images in the Personality Toolkit, depending on the starting software version of the system you wish to upgrade:

System Type	File Name	File Size
iS105, iS325, GigaStorATX or GSC-408 Based Platforms	iStorOnlineImage.2.7.7.1-GigaStorATX	39,751,733 bytes
iS512-Based Platforms	iStorOnlineImage.2.7.7.1-GigaStorMFF	40,213,271 bytes

4 Known Issues and Limitations

4.1 iS512-Series Airflow Optimization

To ensure proper airflow and cooling of the system, every drive slot in the primary enclosure and any expansion enclosure must contain one of the following items:

- Drive carrier with a hard disk drive installed
- Drive filler with no hard drive installed

There should be no empty drive slots or empty drive carriers installed. Both of the controller bays on the rear of iS512 Primary Array should contain either a controller or a blank-off plate. Similarly, both of the controller bays on the rear of the iS512-SX Expansion Array should contain either an I/O Module or a blank-off plate.

4.2 VDS Hardware Provider

Microsoft's VDS subsystem does not support the creation of Network Portals. Therefore the iSCSI network configuration must be performed using the Startup Wizard or the iStor Management Center GUI. For more detailed information, refer to the *iStor Virtual Disk Services Guide* and the Microsoft documentation for DiskRaid and Storage Manager for SANs.

4.3 iSCSI Initiator Support for Windows 2000

We no longer provide iSCSI initiator support for Windows 2000, since Microsoft no longer provides support for that version. However, it is still possible to run the Management Console GUI from a Windows 2000 client.

4.4 Reverting to Earlier Versions

If you must return your system to an earlier version of software, you can click on the “**Use Alternate Version**” button, and the system will restart using the earlier version. However, be sure that all background tasks (such as parity volume initialization, volume reconfiguration or volume scan) have completed before clicking on the “**Use Alternate Version**” button. If the system does not restart automatically, you may need to restart the system manually.

4.5 Reconfiguring the Volume Chunk Size through the CLI

The ability to change the chunk size of a volume when using the CLI “**reconfigure**” command in the **volume** context is not supported in this version.

5 Communication and Support

This section outlines the support procedure and where you can get help if a problem exists.

For systems that do not bear the iStor brand, contact the reseller from whom you purchased the system.

Please read the Quick Start Guide(s) and User's Guide documentation before attempting to set up the system.

For immediate installation support questions please contact your local iStor Value-Added Reseller or contact iStor technical support directly at support@istor.com. For end-users within the United States or Canada, please call (800) 689-1409.

To obtain technical support for an iStor iS105, iS325 or iS512 system you must first register your system by filling out the iStor Product Registration form included in the shipping carton or available at <http://www.istor.com/support/TechnicalSupport.cfm>.

For the latest version of any documentation or software, including software release notes, please visit <http://www.istor.com/support/TechnicalSupport.cfm>.

For locations of our sales offices, please visit <http://www.istor.com/contact/contact.cfm>. For any other additional information regarding this product or other iStor products, please contact your local iStor Value-Added Reseller or Distributor.