



**iS512-Series, iS325, iS316, iS105, GigaStorATX
and GSC-408**

Version 2.8.1 Release Notes

Version 2.8.1 Release – Build 1

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1 Introduction

We are pleased to announce the newest software patch release, version 2.8.1 for the iStor family of storage products. Version 2.8.1 is not a mandatory upgrade, although it is highly recommended. However, version 2.8.0 is a **mandatory** upgrade for all existing customers, because of the number of new features and fixes in that version. These release notes identify what is included and what limitations have been identified as part of this release.

1.1 Purpose

This document identifies supported functionality in the version 2.8.1 software release, and what errata and caveats that may affect the operation of the products. This document is not a product specification, nor does it specify the total functionality of the iStor product family.

1.2 Related Documents

- *iS512 Primary Array Quick Start Guide* - 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.
- *iS512-SX Expansion Array Quick Start Guide* - 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.
- *iS512 Hardware Reference Guide* - this guide provides the hardware information for installing the iS512 storage system.
- *iS325 Quick Start Guide* - this guide provides the information needed to get the iS325 storage system out of the box and operational with a connection to a host computer.
- *iS325 Hardware Reference Guide* - this reference guide provides the hardware details for installing, configuring, and using the iS325 storage system.
- *iS316 Quick Start Guide* - this guide provides the information needed to get the iS316 storage system out of the box and operational with a connection to a host computer.
- *iS316 Hardware Reference Guide* - this reference guide provides the hardware details for installing, configuring, and using the iS316 storage system.
- *iS105 Quick Start Guide* - this guide provides the information needed to get the iS105 storage system out of the box and operational with a connection to a host computer.
- *iS105 Hardware Reference Guide* - this reference guide provides the hardware details for installing, configuring, and using the iS105 storage system.
- *Management Center Software User's Guide* - this guide provides the information needed to configure and manage storage on the storage system using the Management Center Graphical User Interface (GUI).
- *Command Line Interface User's Guide* - this guide provides the information needed to configure and manage storage on the storage system using the Command Line Interface (CLI).
- *Virtual Disk Services Guide* - this guide describes how to use Microsoft Virtual Disk Services (VDS) to manage the storage systems.
- *Terminology Guide* - this guide is designed to assist you in the understanding of storage and SAN terminology that may be used in relation to the 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 version 2.8.1 software release is available as an initial factory installation and a field upgrade for the following products:

- **GigaStorATX** or **GSC-408** with version 1.6, 2.0, 2.5, 2.6, 2.7 or 2.8.0 software
- **iS105** system with version 2.6, 2.7 or 2.8.0 software
- **iS316** system with version 2.6, 2.7 or 2.8.0 software
- **iS325** system with version 1.6, 2.0, 2.5, 2.6, 2.7 or 2.8.0 software
- **iS512-08, iS512-04** or **iS512-10G** system with version 1.6, 2.0, 2.5, 2.6, 2.7 or 2.8.0 software

Any system that is running version 1.5.1 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 Software User’s Guide).



The version 2.8.1 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 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 Management Center from a host system with Windows XP, Windows Server 2003, Windows Server 2008, Windows Server 2008 R2 or Windows Vista. Note that any products that are running version 2.8.1 cannot be managed by earlier versions of the Management Center.

Below are the new or updated features that have been added since the version 2.7.0 general release.

2.1 Automatic REBIND after Controller Failover (iS512 systems only)

With previous software versions, an iS512 controller that failed was held in a non-functional “reset” state, and the remaining controller took over as a “survivor”. To return the system to a redundant state required a scheduled shutdown and restart of the system.

With the version 2.8.0 (and later) firmware, a failed controller will automatically restart and the system will attempt to “rebind” (also known as “fail-back”), which returns the system to a fully-redundant state. No operator action is required to initiate the rebind operation, unless the controller failure was caused by a malfunction of the controller hardware, in which case the faulty hardware must be repaired or replaced.

A system restart is still required when upgrading the controller software.

2.2 Automatic “Down Drive” when a SMART Threshold is Exceeded

When any SMART Threshold on a SATA drive is exceeded, the system will automatically “down” that drive, and all volumes on that drive will be moved to other available drives. An e-mail notification message and/or an SNMP trap will be generated to report this action. This will help to proactively eliminate drive failures before they occur.

2.3 Increased the Maximum Allowable Host Transfer Size

The maximum host transfer size was increased from **5MB** to **10MB** to support certain VMware environments.

2.4 Improved E-mail and SNMP Notifications

All E-mail Notification messages and SNMP Traps now include a more detailed description of the specific failure condition (such as “**Drive 0 Failed**”), instead of simply instructing you to view the Event Log for a description of the failure.

2.5 Event Log Entry for “Initialize Drive”

An Event Log entry is now added whenever a drive is initialized.

2.6 Performance Improvements

The read-ahead caching algorithm was enhanced to use three buffers instead of two, which improves the performance when running with a single read-ahead thread.

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2.7 Fixes in Version 2.8.0

The following issues have been fixed in this release:

- Java GUI:
 - The member number of a parity volume always displayed as “0” in the **Physical Storage Extents** tab
 - Attempting to delete a volume with an active iSCSI session did not pop-up an error dialog
 - The hostname in the **Network Settings** view was not updated after changing the hostname
 - The volume size was displayed to 8 decimal places when reconfiguring a Stripe volume to a Parity volume
 - A Network Portal did not appear in summary after replacing the network port with a VLAN-enabled port
 - Insufficient error checking when using the Volume Creation wizard to select certain volume types (such as “Email Server”) when fewer than four drives exist in the system
 - Hard drives that were almost full were not available for selection in the Volume Reconfigure Wizard, which prevented some volumes from being reconfigured
 - The System Administration view showed “**Serial Number: Chassis 001-001**” for some enclosure types that did not have a pre-programmed serial number
 - Attempting to re-configure a Volume to the same RAID type but using different disks had no effect
 - Not all events were extracted when the Event Log was saved
 - There was no validation of an attempt to upload a software image for a different hardware platform
- Reliability improvements for out-of-order TCP packet processing, especially when the TCP window from the initiator host would shrink unexpectedly
- The hostname contained in the body of an e-mail notification message did not correspond with the hostname that was specified through the GUI or the Admin menu of the Serial Console.
- Numerous oscillating fan speeds for some enclosures caused the Event Log to fill-up with Fan Speed Change entries
- The Event Log included several “**RBOD Communication Error**” events for some enclosures
- The Event Log included unexpected “**Fan Fault**” errors for some enclosures
- Saving the Event History caused a system failure when the Event Log contained exclusively “**Engineering Info**” entries
- Setting the TCP “**Time-to-Live**” (TTL) parameter in the **System Administration**→**Advanced Settings** tab caused the system to unexpectedly restart
- The diagnostic capture was invalid when only a single 1GB memory DIMM was present
- Unable to set the Hostname through the Admin menu if it started with a numeric character
- Unable to boot via iSCSI when using a Broadcom 5709 host bus adapter
- Various software instabilities resulted in a “**bug-check**” condition and caused the system to restart, which caused temporary loss of access to volumes

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2.8 Fixes in Version 2.8.1

The following issues have been fixed in this patch release:

- Oscillating fan-speed events for the iS316 enclosure were filling up the Event Log
- Attempting to login from a non-Windows initiator (such as **GlobalSAN** for MacOS or **open-iscsi** from Linux) to a volume that has a CHAP password defined without specifying the CHAP password incorrectly allowed the login to succeed
- Some low-level SCSI commands (such as Mode Select) from a VMware or HyperV clustered environment caused the controller to reset

3 Software Upgrade Procedure

For any existing system that is running software version 1.6, 2.0, 2.5, 2.6, 2.7 or 2.8.0, you should obtain one of the following files from our website at:

http://www.istor.com/support/tools_resources/

System Type	File Name	File Size	Comments
iS512-Series	FUFI_2_8_1_1.iStor_iS512	41,105,909 bytes	For iS512 systems only
iS325	FUFI_2_8_1_1.iStor_iS325	40,517,546 bytes	For iS325 systems only
iS316	FUFI_2_8_1_1.iStor_iS316	40,644,493 bytes	For iS316 systems only
iS105	FUFI_2_8_1_1.iStor_iS105	40,517,546 bytes	For iS105 systems only
GigaStorATX or GSC-408	FUFI_2_8_1_1.iStor_GigaStorATX	41,012,987 bytes	Generic for GigaStorATX and GSC-408 controllers, without 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 version 2.8.1 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 version 2.x

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

1. Select **System Administration** in the upper-left frame
2. Select the “**Control**” tab
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 four 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 already in a “Bound” state.</p>
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3.2 Upgrade for systems that are running version 1.6

Use the following procedure from the version 1.6 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.

	<p>After upgrading from version 1.6, 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 <i>Version 2 Upgrade Procedure Document</i>, which is available on our website. You must also install the Java 6 Run-Time Environment for your host system in order to use the new GUI.</p>
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3.3 Upgrade for systems that are running version 1.5 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 http://www.istor.com/support/tools_resources/.

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
GigaStorATX or GSC-408 based platforms	iStorOnlineImage.2.8.1.1-GigaStorATX	40,505,370 bytes
iS512-based platforms	iStorOnlineImage.2.8.1.1-GigaStorMFF	40,943,499 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 either a drive carrier with a hard disk drive installed or a 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

Support for the 32-bit version of Microsoft Virtual Disk Service (“VDS”) is available for Windows 2003 Server only, 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.

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 Management Center GUI. For more detailed information, refer to the *Virtual Disk Services Guide* and the related 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.



IMPORTANT: For any iS512 systems that were originally manufactured with version 2.8.0 firmware (or later), it is not possible to install an earlier version of firmware. Attempting to do so may cause your system to become unusable.

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.

4.6 Micro-Rebuild Feature is Disabled for SATA Drives

The Micro-Rebuild feature is disabled for SATA drives in this release due to instabilities that exist with that feature. This feature may be re-activated in some future firmware release.

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 Value-Added Reseller or contact our Technical Support staff directly at istor_support@promise.com. For end-users within the United States or Canada, please call (800) 689-1409.

Before requesting technical support, please upgrade to software version 2.8.0 (or later).

For the latest version of end-user documentation, software, or software release notes, please visit: http://www.istor.com/support/tools_resources/.