



iStor Networks, Inc.[®]

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iS512-08, iS512-10G, iS325, GigaStorATX
and GSC-408

Version 2.5.1 Release Notes

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iStor Networks, Inc.
7585 Irvine Center Drive
Suite 250
Irvine, CA 92618
[Hwww.istor.comH](http://www.istor.com)

1 Introduction

iStor Networks, Inc. is pleased to announce the newest general software release, version 2.5.1 for the integraStor® family of products, including all GigaStorATX and GSC-408 controllers and iS325, iS512-08 and iS512-10G systems. The v2.5.1 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 v2.5.1 software release. This document identifies supported functionality, what was originally supported, but not part of this release and what errata and caveats that may effect the operation of the integraStor product family. This document is a release note on the v2.5.1 software release. It is not a product spec, 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 integraStor iS512 storage system.
- *iStor iS325 Hardware Reference Guide (document number iS325HWRF)*. This reference guide provides the hardware details for installing, configuring, and using the integraStor iS325 storage array.
- *integraSuite® 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 integraSuite graphical user interface.
- *integraSuite 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 integraSuite's command line interface.
- *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 integraSuite 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 v2.5.1 software release is available as an initial factory installation and a field upgrade for the following products:

- **GigaStorATX** or **GSC-408** controller that is running v1.6.x, v2.0.x or v2.5.0 software
- **iS325** system that is running v1.6.x, v2.0.x or v2.5.0 software
- **iS512-08** or **iS512-10** system that is running v1.6.x, v2.0.x or v2.5.0 software

Any systems that are running v1.5.1 software or earlier must first be upgraded to version 1.6.x, and then upgraded to v2.5.1. For more information about the software upgrade process, please refer to your existing system documentation (**Chapter 4.1 “Launching the GigaStor Management Console”** in the GigaStor Functional Guide or **Chapter 5.1 “Launching the iS512 Storage System Management Console”** in the integraSuite Software User’s Guide).



The v2.5.1 software release requires that the **Java Runtime Environment 6 (JRE 6) Release 1.6.0.0, or later** (<http://java.com>) is 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 integraStor 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 integraSuite Management Center from a host system with Windows XP, Windows Server 2003, Windows Server 2008 or Windows Vista. 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 and **Storage Manager for SANs** application) to configure and manage any integraStor product. For more information, please refer to the appropriate Microsoft documentation.

The following are new or updated features that have been added since the v2.0.0 general release.

2.1 Diagnostic Capture Utility

To help identify and correct problems that occur at customer locations, the integraSuite Management Center software includes the ability to download a Diagnostic Capture of the system. The Diagnostic Capture can be obtained from the default web page and subsequently uploaded to iStor’s Customer Support staff for analysis of the failure. The instructions for uploading a Diagnostic Capture to iStor will be provided to customers when such an upload is needed.

Note that this feature is only available with controllers that contain 256MB of NAND flash. To determine if your controller can support this capability, look for the following line in the diagnostic serial console output during system startup and observe the value of “**256MiB**”:

```
NAND: NAND device 98:DA 'NAND 256MiB 3,3V 8-bit' found
```

2.2 Redundant Controller Support for iS512 Systems

The iS512-series supports redundant controllers for High Availability when using SAS drives. When dual controllers are installed in your iS512 system, the two controllers operate as a “**bound**” pair. In the event of a controller failure, all system activity, Management and iSCSI Data Port IP Addresses will automatically be transferred to the remaining controller, or “**survivor**”, without any interruption to host I/O. The failed controller is then held in a non-functional state to prevent any further activity from occurring on that controller.

After the failed primary controller is replaced, you must restart the system by selecting **System Administration** → **Settings** → **General** → **Restart** to return the system to a fully-redundant state.

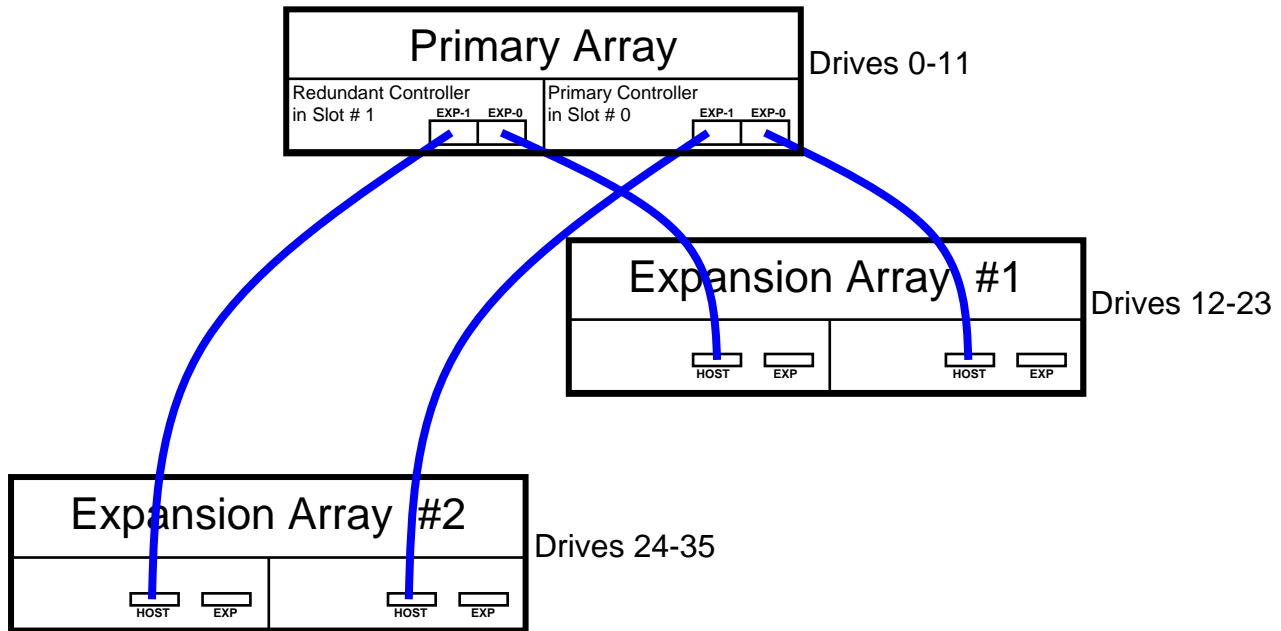
The following conditions are required for redundant controller operation:

- Both controllers must have the same number of iSCSI data ports
- Both controllers must have the same amount of System and Buffer Memory
- Both controllers must be running the same version of software (v2.5.0 or later)



Redundant controllers will only operate with SAS drives. If your iS512 system is equipped with redundant controllers, any native SATA drives that are installed will be inaccessible.

If your iS512 system uses one or two iS512-SX Expansion Arrays, each of the Expansion Arrays must also have dual I/O Modules, and there must be redundant connections between the Primary Array and the Expansion Array(s), as shown in the illustration below:



Field Upgrade Kits are available for single-controller iS512 systems to add a redundant controller to the Primary Array and a redundant I/O Module to the Expansion Array.

2.3 integraSuite Management Center Enhancements

For all iS512-series systems, a new Tree-View appears in the System Administration View, showing the System item and either one or two Controller items and their status. When the System item is selected, detail tabs appear for **Summary**, **Schedule** and **Settings**. When one of the Controller items is selected, Detail Tabs appear for **History** and **Controller 0** or **1**.

If your iS512 system is equipped with dual controllers and both of those controllers are already running version 2.5.0 (or later) software, performing any software upgrade in the future using the Settings tab will upgrade both controllers at the same time. In addition, more detailed explanations have been added when two controllers are unable to bind.

For more detailed information, please see the latest revision of the *integraSuite Management Center Software User's Guide*.

2.4 NTP (Time Server) Support

A new selection is available in the **System Administration**→**Settings**→**Advanced Settings** menu that allows you to specify an IP Address for a third-party Network Time Protocol Server that can be used to synchronize the date and time of your integraStor system at startup time and every hour thereafter. By default, the IP address is set to **0.0.0.0**, which means that the NTP support is disabled. To enable NTP support, enter a valid IP address for a third-party NTP server (such as **"192.43.244.18"** for **time.nist.gov**). For a list of NTP servers, please see <http://www.ntp.org>.

2.5 Software Upgrade and Windows Firewall

In previous releases, a software upgrade would fail without any explanation if the Windows Firewall was enabled on a Windows host system. The system now checks the status of the Windows Firewall when you are upgrading the software, and displays a clear error message in a pop-up window if the Windows Firewall is enabled. This change has no effect on non-Windows host systems.

2.6 Down Drive Improvements

In previous releases, the “Down Drive” selection had no warning or confirmation messages. In this release, the Storage View on the Management Console shows the drive health as "Down Drive in progress" while the Down Drive action is operating. The drive status also changes to "**Needs Attention**". When the Down Drive operation completes, the drive health changes to “Normal” and the Pool Type changes to “Unavailable”. At that time, the drive may be safely removed from the enclosure.

2.7 Duplicate Volume Names Are No Longer Permitted

To reduce the possibility of confusion when selecting Target Nodes, the system will no longer allow you to create a new volume (or rename an existing volume) using a volume name that is already used for another existing volume. Attempting to do so will result in an error message through the *integraSuite* Management Center, the CLI or the VDS Provider. However, any existing volumes that already have duplicate names are still supported, so no changes are required.

2.8 New CLI Commands and Behavior

A new “**ForceControllerFailover**” command has been added to the **AdvancedSettings** context in the CLI. This command causes a controller failover to occur when a bound pair of controllers exists on an iS512 system, and can be used to verify the network cabling needed to support automatic controller failover. This command will have no effect on a dual-controller system that is running in Survivor mode or a single-controller system.

A variety of new properties have also been added to the **Controller** context to provide more detailed status information about the redundant controllers in an iS512 system that is equipped with dual controllers.

The default mode for displaying real-time notifications has been changed to “**disabled**”. You can specify the **-I** flag when starting the CLI executable (“**cli2.exe**”) to enable those notifications.

For more detailed information about the new commands and properties, refer to the *integraSuite Command Line Interface User’s Guide*.

2.9 Improved Fan Speed Management for iS512

Some of the thresholds for the temperature sensors inside the iS512 controller have been adjusted to more accurately control the temperature of the critical components, thereby improving system reliability. As a result, the cooling fans may spin at a slightly faster rate to ensure the most effective cooling for those components.

2.10 Fixed Issues since v2.0.0

The following problems from previous releases have been fixed in this release:

- A number of bug-check conditions throughout the system have been corrected to improve system stability and reliability
- A variety of “**Grow Volume**” and “**Reconfigure Volume**” problems existed and have been fixed
- False indications of battery failures have been eliminated
- Fixed bugs in the Discover MPU Metadata Regions operation cause by a partially initialized device
- Fixed various bugs related to iSNS discovery
- Icons in System Administration view had unclean edges
- Personality Toolkit Image with VDS didn't work on German version of Windows Server 2003
- Enclosure Services reported power failure events in single power supply GSC-408 enclosure
- Physical Storage Properties did not show the firmware revision for the hard drive
- Unexpected reboot occurred after an over-temperature shutdown
- Incorrect vendor name appeared in some “**Enclosure**” event log entries
- Unexpected variations between the two temperature sensors and oscillating fan speeds on GSC-408
- GSC-408 based enclosure type's temperature-1 reading was not accurate
- The e-mail “**From**” and “**To**” address fields were transposed
- Enclosure Fault LED illuminated after non-orderly shutdown and power-on
- Inserting a bad hard drive did not illuminate the Drive Fault LED
- Inserting a bad hard drive did not appear in the GUI unless the F5 key is pressed
- The most recent Event Log entry did not appear until a later event occurs
- Modified the Drive Activity LED behavior to be normally off and blinking for activity for GSC-408
- The Reload button in the Help page was not functional
- The Home button in the Help page was not functional
- Unexpected references to “**integraStor**” appeared in the Help Table of Contents for personalized builds instead of the “**productshortname**” string
- The Fault LED for GSC-408 controllers was incorrectly illuminated after a non-graceful shutdown
- The behavior of the link and activity LED's for the Management Port have been corrected to more closely match the behavior of the iSCSI data ports
- No warning message appeared when attempting to specify an invalid VLAN group number of “**1**”.
- No confirmation pop-up message appeared with selecting “**Force System Failover**” from the System Actions panel
- The Personality Toolkit did not allow a selection of 2 cooling fans for the “**GSC408 Custom**” template



After a successfully upgrading your system to the v2.5.1 software release, it is recommended to save a new System Configuration File by using the following procedure:

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 “**integraStor Configuration**” heading
5. Navigate to where you wish to save the configuration file and enter the filename
6. Click on “**Save**”

3 Software Upgrade Procedure

For any existing system that is running software version 1.6.x, v2.0.x or v2.5.0, 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_5_1_81.iStor_iS512	38,895,522 bytes	For iS512 systems only
iS325	FUFI_2_5_1_81.iStor_iS325	38,417,656 bytes	For iS325 systems only
GigaStorATX or GSC-408	FUFI_2_5_1_81.iStor_GigaStorATX	38,420,747 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.

3.1 Upgrade for systems that are running v1.6.x

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


1. Select the **Physical Resources** tab in the left-most frame
2. Select the **integraStor** 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 integraStor; 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 v1.6.x, 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 (TechTIP_integraSuite_v2.pdf), which is available on the iStor Networks website.</p>
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3.2 Upgrade for systems that are running v2.0.x or v2.5.0

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
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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3.3 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
iS325, GigaStorATX or GSC-408 Based Platforms	iStorOnlineImage.2.5.1.81-GigaStorATX	37,627,989 bytes
iS512-Based Platforms	iStorOnlineImage.2.5.1.81-GigaStorMFF	38,088,883 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. Similarly, both of the controller bays on the rear of iS512 enclosure should contain either a controller or a blank-off plate.

4.2 Connection of iS512-SX Expansion Arrays

When connecting two iS512-SX Expansion Arrays to the iS512-08 or iS512-10G system, only one iS512-SX Expansion Array should be connected to each of the SAS Expander ports (identified as EXP-0 and EXP-1) on the back of the iS512 controller. Doing so will also improve performance due to more evenly balance I/O loads across the SAS Expander ports. It is not possible at this time to daisy-chain multiple iS512-SX expansion arrays from a single SAS Expander port of an iS512-08 or iS512-10G controller.

4.3 Maximum Buffer Memory Size for iS512

The maximum size of Buffer Memory for iS512-series controllers is currently limited to 2GB. This will be corrected in a future release.

4.4 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 *integraSuite* Management Center GUI. For more detailed information, refer to the *integraStor Virtual Disk Services Guide* and the Microsoft documentation for DiskRaid and Storage Manager for SANs.

4.5 Reverting to Earlier Versions

If you must return your system to an earlier version of software, be sure that all background tasks (such as parity volume initialization, volume reconfiguration or volume scan) have completed before reverting.

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 integraStor 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.