SGI Total Performance 9100 Storage Documentation Addendum

This addendum supplies additions and corrections to the *SGI Total Performance 9100 Storage System Owner's Guide* (007-4068-003) and *SGI Total Performance 9100 Storage System Installation Instructions* (108-0254-003). The information in these guides is valid for the 6.14 controller firmware version.

However, with the release of 7.01 or later controller firmware versions, feature enhancements have been implemented and documentation changes are necessary. This addendum discusses these in the following sections:

- Feature Enhancements
- Verifying Controller Firmware
- Documentation Changes

Feature Enhancements

With the release of 7.01 or later controller firmware versions, the following feature enhancements have been implemented:

- The maximum number of system drives (LUNs) has been increased from 8 to 32.

- The maximum number of controller-allowable Fibre Channel drives has been increased from 32 to 60.

- The maximum pack size has been increased from 8 drives to 16 drives. This value defines the number of drives allowed in a disk pack, which in turn is used to create RAID system drives. This feature allows a RAID system drive to be defined as a 15+1 configuration (as opposed to a 7+1 configuration with the 6.14 firmware). The 15+1 nomenclature defines a system drive as consisting of 15 data drives and one parity drive.

- A new management software utility (TPM 1.0) has been implemented. TPM 1.0 replaces the Web Array Manager (WAM) of the 6.14 controller firmware version.

Note: Because WAM does not support 7.01 or later controller firmware versions, you are required to use TPM 1.0 with 7.01 or later releases. If you are still using the 6.14 controller firmware, you can use either WAM or TPM 1.0.

Caution: Do not install a controller with a 7.01 or later firmware version into a system set up for the 6.14 controller firmware version, or loss of data will occur.

Verifying Controller Firmware

To verify which controller firmware version is installed in your system, use one of the following procedures:

- Using Visual Clues

- Using the Management Software

Using Visual Clues

A label containing firmware level information is located on the top of all controllers. If the system is not in operation, you can remove the controller module from its enclosure and check the label to see which firmware level is installed.

Using the Management Software

If you use WAM, the 6.14 controller firmware version is probably installed in your system, since WAM does not support 7.01 or later controller firmware versions. Follow these steps if you need to verify the controller firmware version with WAM:

1. Start the WAM software. See the *Mylex Web Array Manager™ Client Software Installation Guide and User Manual* or the *Web Array Manager™ Client Software Installation and User Guide.*

2. Log on to the server with the controller you are searching.

3. Click the **Controller** link. The controller firmware information is displayed under the **General Information** section of the **Properties** window.

If you use TPM 1.0, follow these steps to verify the controller firmware version:

1. Start the TPM software and log on. See the *TPM 1.0 Installation Instructions and User's Guide for TP9100* (007-4382-001).

2. Select the **Device** link on the main page.

3. Return to the main page.

4. Click **View/Modify RAID Controller Configuration** in the **Administrative Functions** section. The controller firmware information is displayed above the Controller Configuration Table.

Documentation Changes

The information contained in the *SGI Total Performance 9100 Storage System Owner's Guide* (007-4068-003) and *SGI Total Performance 9100 Storage System Installation Instructions* (108-0254-003) is valid for the 6.14 controller firmware version. However, with the release of 7.01 or later controller firmware versions, the following changes to the documentation are necessary:

Table 1 replaces Table 4-1 on pages 53 and 54 of the *SGI Total Performance 9100 Storage System Owner's Guide* (007-4068-003). Table 1 contains updated information relevant to the release of 7.01 or later controller firmware.

Table 1   Supported RAID Levels

RAID Level	Description	Minimum Drives 6.14, 7.01 or later	Maximum Drives 6.14	Maximum Drives 7.01 or later	Fault-Tolerant 6.14, 7.01 or later
0	Block striping is provided, which yields higher performance than is possible with individual disk drives. No redundancy is provided.	2	8	16	No
1	Disk drives are paired and mirrored. All data is duplicated 100% on an equivalent disk drive.	2	2	2	Yes
3	Data is striped across several physical disk drives. Parity protection is used for data redundancy. This level provides a larger bandwidth for applications that process large files.	3	8	16	Yes
5	Data and parity information is striped across all physical disk drives. Parity protection is used for data redundancy.	3	8	16	Yes
0+1 (6)	Combination of RAID levels 0 and 1. Data is striped across several physical disk drives. This level provides redundancy through mirroring.	4	8	16	Yes

Table 1 (continued)   Supported RAID Levels

RAID Level	Description	Minimum Drives 6.14, 7.01 or later	Maximum Drives 6.14	Maximum Drives 7.01 or later	Fault-Tolerant 6.14, 7.01 or later
JBOD (7)	"Just a bunch of disks." Each disk drive is operated independently like a normal disk drive, or multiple disk drives can be spanned and seen as a single large drive. This level does not provide data redundancy.	1	1	1	No
30 and 50	Allow storage capacity to be increased by a factor of four from RAID 3 and RAID 5 configurations by combining four RAID 3 or RAID 5 drive groups into a superdrive group across which data is striped. Each of the four drive groups must contain the same number of physical devices, use the same stripe block size, and be the same RAID level. The appended 0 denotes that the RAID level is using striping (RAID 0) across drive groups.	3	8	16	Yes