



Seagate® Nytro™ XP6302-8B4096
Flash Accelerator Card
Preliminary Release Notes

XP6302-8B4096 (ST3500KN0012)

100776229, Rev. B
May 2015

Revision History

Version and Date		Description of Changes
Rev. B	May 2015	Changes 12.00.07.00 to 13.00.02.00.
Rev. A	April 2015	First release of the document.

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Nytro XP6302 Flash Accelerator Card Release Notes

1 Release Notes Overview

These release notes correspond to the current release of the firmware, drivers, and utilities for the Seagate® Nytro™ XP6302-8B4096 (ST3500KN0012) Flash accelerator cards.

For detailed information about the Nytro XP6302-8B4096(ST3500KN0012) Flash accelerator card, refer to the *Seagate Nytro™ WarpDrive® and Nytro XP6302 Flash Accelerator Card Management Utility User Guide*.

2 Supported Products

The following products use the Seagate Nytro WarpDrive and Nytro XP6302 firmware.

Table 1 Nytro WarpDrive and Nytro XP6302 Products

Device Names	Model Names	Usable Capacity
Nytro XP6302	XP6302-8B4096	3.5 TB

3 Software Components and Drivers

The following table lists the current versions of the software components for the Nytro WarpDrive and Nytro XP6302 cards.

Table 2 Nytro WarpDrive and Nytro XP6302Cards Software Components

Seagate Driver	Version
Microsoft® Windows® Server® 2012 R2 x64	Version 2.10.68.01
Windows® Server® 2008 x64 Version R2 and R2 SP1	Version 2.10.68.01
SUSE® Linux® Enterprise Server (SLES™) x64 and x32 Version 11 SP3	Version 20.00.00.00
Oracle® Solaris® x64 and x32 <ul style="list-style-type: none"> ■ x86 Version 10 U10 ■ x86 Version 11 ■ SPARC Version 10 U10 ■ SPARC Version 11 and 11.2 	Operating system built-in driver
CentOS® x64 and x32 Version 6.4 and 6.5	Version 20.00.00.00
Ubuntu® x64 and x32 Version 12.04 and 14.04 LTS	Version 20.00.00.00
Debian® x64 and x32 Version 6.05 and 7.0	Version 20.00.00.00
Fedora® x64 and x32 Version 19 and 20	Version 20.00.00.00

Table 2 Nytro WarpDrive and Nytro XP6302Cards Software Components (Continued)

Red Hat® Enterprise Linux (RHEL) x64 and x32 <ul style="list-style-type: none"> ■ Version 5.9 and 5.10 ■ Version 6.5 and 6.6 ■ Version 7.0 	Version 20.00.00.00
Oracle Enterprise Linux (OEL™) x64 and x32 <ul style="list-style-type: none"> ■ Version 5.9 and 5.10 ■ Version 6.5 	Version 20.00.00.00
VMware® ESXi x64 Version 5.1 and 5.5	Version 18.00.00.00-1VMW
FreeBSD® x64 and x32 <ul style="list-style-type: none"> ■ Version 9.0 and 9.2 ■ Version 10 	Version 19.255.03.00
NYTRO XP6302 FIRMWARE	FIRMWARE VERSION
Nytro XP6302 firmware revision	13.00.02.00
NYTRO FLASH MODULE	VERSION
1E512	6.1.5
SEAGATE UTILITY	VERSION
DDCLI for Linux, Windows, VMware, FreeBSD, and Solaris	Version 112.00.12.00
SNMP	Version 112.51.04.00

To download the latest software components and drivers, visit the following website:
<http://www.seagate.com/products/solid-state-flash-storage/accelerator-cards/>.

4 Resolved Firmware Issues 12.00.07.00 to 13.00.02.00

- **DCSG-1085: Fix an issue on Flash Modules UECC due to RDD:** Corrected an issue on Flash modules UECC due to RDD algorithm mitigates the errors in NAND memory that might occur when repetitive reading of data in one cell inadvertently disturbs the data in a nearby cell.
- **DCSG-1065: The Nytro Flash module's design, 8K random reads varies by 20 %.** This product is comprised of 8 Flash modules, which are presented as an aggregated volume to the operating system. Some read workloads result in varied IOPs between different Flash modules. This release balances the workload, which improves the overall drive performance.
- **DCSG-1012: The Nytro Flash modules are not recognized during continuous power cycle tests.** The IBM server models, if subjected to repeated power cycles (cold boot server, after the complete shutdown of the OS load, repeat numerous times), could cause the XP6302 to be off line. The XP6302 recovers on subsequent reboot of the server.
- **ASDCQ00021747:** The HP G9 server does not start on the legacy and UEFI drivers. The HP Gen9 server attempts an inquiry on the passthru interface, which apparently generates an AEN, and skews the ring buffer index co-ordination between firmware and UEFI driver. The fix disables the passthru interface on the physical drives when the drives are behind a logical volume.

5 New Features

The current release of the Nytro WarpDrive and Nytro XP6000 firmware includes the following new features:

- **UNMAP to NCQ TRIM translation support** permits you to conditionally convert all of the SCSI UNMAPs into a vendor-defined TRIM command before issuing command to the SATA drives. This substantially improves the WarpDrive's SCSI UNMAPs performance. By default, the UNMAP SWITCH is enabled/ON. The Direct Drive (DD) Tools provides an option to enable and disable the UNMAP functionality. For detailed information, refer to the *Seagate® Nytro™ WarpDrive® and Nytro XP6000 Application Acceleration Card Management Utility Phase 13 User Guide* on the www.seagate.com website.
- **Emulation (512e) drive support** helps reporting of various values for Logical Blocks Per Physical Block Exponent in READ_CAP(16) so that the software applications can optimize data alignment and block-size according to hardware.

6 Firmware Advisories

- **ASDCQ00021730:** In the Nytro WarpDrive controller cards, if the partitions are mounted with `-o discard` option, that is, with TRIM enabled, I/O performance degradation is observed.

Workaround: If you want to use the XFS filesystem with the `-o discard` option, disable the TRIM feature to achieve maximum performance.



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