



RAIDCORE™ COMPATIBILITY GUIDE

APPLICATION NOTE

Unified Enterprise-class Software RAID stack for Server or Workstation built-in SATA ports

Key Features

- Enterprise class RAID 0, 1, 5, 50, 1n, 10n
- Online capacity expansion (OCE)
- Online RAID level migration (ORLM)
- Comprehensive management application

Operating System Support

Windows Vista 32/64 bit

Windows 7 64 bit

Windows Server 2003 32/64 bit

Windows 2008 Server 32/64 bit

Windows 2008 R2 Server 64 bit

Red Hat® Enterprise Linux 5.3 32/64 bit

Red Hat® Enterprise Linux 5.4 32/64 bit

SuSE® Linux Enterprise Server 10.3 32/64 bit

SuSE® Linux Enterprise Server 11 32/64 bit

Linux SDK

Summary

This application note outlines the types of motherboards that have been tested with Dot Hill's RAIDCore software RAID stack and provides some installation guidelines for common motherboards.

The RAIDCore software supports the following chip sets and I/O cards:

- Intel ESB2, ICH7R, ICH8R, ICH9R, ICH10R, Ixex Peak in SATA-AHCI mode
- AMD SB600, SB700, SP5100 in IDE->AHCI mode
- Broadcom/Serverworks HT1000 in SATA and RAID mode

Motherboard SATA-AHCI Mode

For Intel or AMD/ATI based motherboards, the RAIDCore code requires that the SATA controller built into the motherboard core logic chip set be configured in AHCI mode, not legacy or IDE compatible modes. This setting can be verified and changed if necessary in your motherboard BIOS setup configuration utility. For new installations (i.e. no existing operating system), make sure that this setting is set to AHCI mode before installing an operating system as converting an O/S disk from legacy mode to AHCI mode later on for some earlier operating systems may require a complete O/S repair or reinstall. This is not an issue for Vista or operating systems that have native AHCI SATA mode support built in.

For AMD/Broadcom HT1000 motherboards, enter the BIOS and under the Advanced SATA settings, ensure that HT-1000 SATA is enabled and also the MMIO or RAID mode is selected. Any existing RAID BIOS may be an earlier version of RAIDCore, but the system should function fine. If no HT1000 setup area exists, chances are that the motherboard does not support RAIDCore.

For AMD SB600/700/SP5100, under Advanced settings ensure that SATA mode is set to IDE->AHCI. Other methods to determine compatibility for an existing installed operating system is to use the Device Manager under Windows and navigate to the IDE ATA/ATAPI controllers section to identify the chip set type.

application note





Intel and AMD Motherboard Compatibility

Intel Motherboard Compatibility

Intel compatible motherboards must include AHCI compatible SATA I/O capability to support Dot Hill's RAIDCore software but there are many varieties. The SATA/RAID capability is built into a number of Intel's I/O Controller Hub (ICH) chip sets, specifically ICH7R, ICH8R, or ICH9R for desktop or workstation PCs, or ESB2, ICH9R, ICH10R, or Ixex Peak for server class and finally ICH7M or ICH8M for mobile PCs. Note – ICH7, ICH8, ICH9 (i.e. non-R variants) will not support RAIDCore (or AHCI modes) including Intel's own RAID drivers as the AHCI functionality is disabled. Intel provides a utility to help detect the specific chip set for some operating systems at http://www.intel.com/support/chip_sets/inf/sb/CS-009266.htm and may also identify if the SATA ports are configured in IDE or AHCI mode. The following summarizes the chipsets supported and corresponding Southbridge ICH implementation. Note, even though the chip set may be capable of supporting AHCI or RAID, always double check in the system BIOS if AHCI mode is enabled as some OEMs choose to disable specific features in their BIOS.

AMD Motherboard Compatibility

AMD compatible motherboards must include AHCI compatible SATA I/O capability to support Dot Hill's RAIDCore software but there are many varieties. The SATA/RAID capability is built into a number of AMD's I/O Controller Hub (ICH) chip sets, specifically SB600 and SB700 for desktop or workstation PCs, or SP5100 for server class applications. The following table summarizes the chipsets supported and corresponding Southbridge ICH implementation. Note, even though the chip set may be capable of supporting AHCI or RAID, always double check in the system BIOS if AHCI mode is enabled as some OEMs choose to disable specific features in their BIOS.

Intel Motherboards

Server/Workstation Chip set Family	Southbridge/ICH	Storage Supported
5500, 3500	ICH10R/PCH	6 SATA 3Gbit/s ports
5100mCH, 3210, 3200, 3010, 3000	ICH9R	6 SATA 3Gbit/s ports
7230, 3010, 3000	ICH7R	4 SATA 3 Gbit/s ports
5400, 5000X, 5000P, 5000V	6321ESB	6 SATA 3 Gbit/s ports
7000	632x/631xESB	6 SATA 3 Gbit/s ports
Desktop Family		
X48, X38, Q35, Q33, P35, G33	ICH9R	6 SATA 3 Gbit/s ports
Q965, Q963, P965, G965, G35	ICH8R	6 SATA 3 Gbit/s ports
975X, 955X, P31, G31, 945PL, 945GZ, 945GT, 945G	ICH7R	4 SATA 3 Gbit/s ports
Mobile Chip set Family		
GM965, PM965	ICH8R	2 SATA 3 Gbit/s ports
945GM, 945GMS, 945PM, 940GML, 943GML	ICH7R	2 SATA 3 Gbit/s ports

AMD Motherboards

Server/Workstation Chip set Family	Southbridge	Storage Supported
SR5690, SR5670, SR5650	SP5100	6 SATA 6 Gbit/s ports
Broadcom HT2000/1000	HT1000	4 SATA 3 Gbit/s ports
Desktop Family		
780G, 780V, 740G	SB700	6 SATA 3 Gbit/s ports
790FX, 790X, 770, 690G, 690V, Crossfire 580X, 570X, 480X	SB600	4 SATA 3 Gbit/s ports
Mobile Chip set Family		
M690	SB600	4 SATA 3 Gbit/s ports

Specifications are subject to change at any time.

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