HyperNAS MEDIA SERVER
NETWORK-ATTACHED STORAGE REFERENCE DESIGN KIT

NAS Market Trends

SMB/SOHO Network-attached Storage (NAS) is currently designed using a file-centric storage medium to store and back up data files as documents, photos, video, and digital content. Market trends suggest that NAS solutions will migrate to a multimedia home entertainment storage medium capable of streaming HD video and high-quality audio, in addition to providing for storage and back up needs of digital media. With the increasing storage density of current hard drives, customers have the opportunity to increase their storage capacity at fairly low cost. Also, advanced backup/redundancy technologies lead to reduced failures and better productivity. The growing penetration of VOD and offline movie-download services provides a tangible need for simple, yet reliable and sophisticated, storage devices.

Benefits

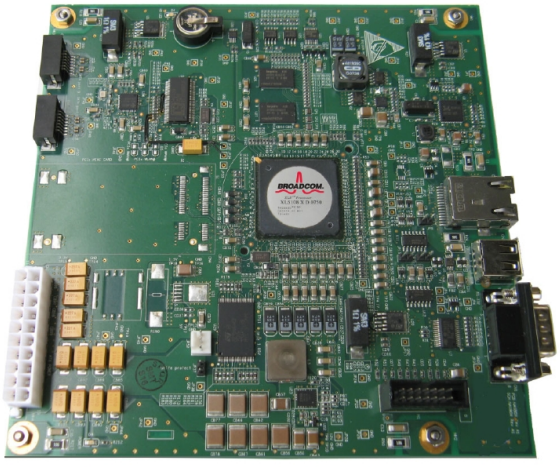
The Broadcom HyperNAS Media Server reference design is a production-ready platform addressing the low-to-mid-range SMB NAS and Home NAS media server market segments. With outstanding networking performance, a rich feature set, and a variety of interfaces, the Broadcom HyperNAS Media Server Design Kit allows customers to quickly adopt a multithreaded solution for today's storage demands and beyond.

XLS® Processor

The XLS processor features state-of-the-art multicore multithreading technology that includes a Fast Messaging Network™ (FMN) mechanism for efficient on-chip communication. A security engine (Autonomous Security Acceleration Engine®) and compression engine offload work from the CPU to perform critical application tasks. XLS processors are pin-compatible, with single-core to quad-core designs that support four NXCPUs per core. An optimal cache subsystem incorporates separate L1 caches per core and a large shared L2 cache for increased application performance. In summary, the XLS processor offers a cost-effective single-chip solution, with outstanding network performance and a rich feature set for the next generation of scalable multiservice applications.

Broadcom Partner Alliance

Broadcom has established a broad partner alliance to enable OEMs to quickly take a cost-effective NAS media server reference design to market. The alliance includes a long list of mature industry-leading ODMs and third-party software vendors, including Wind River and Abatron.

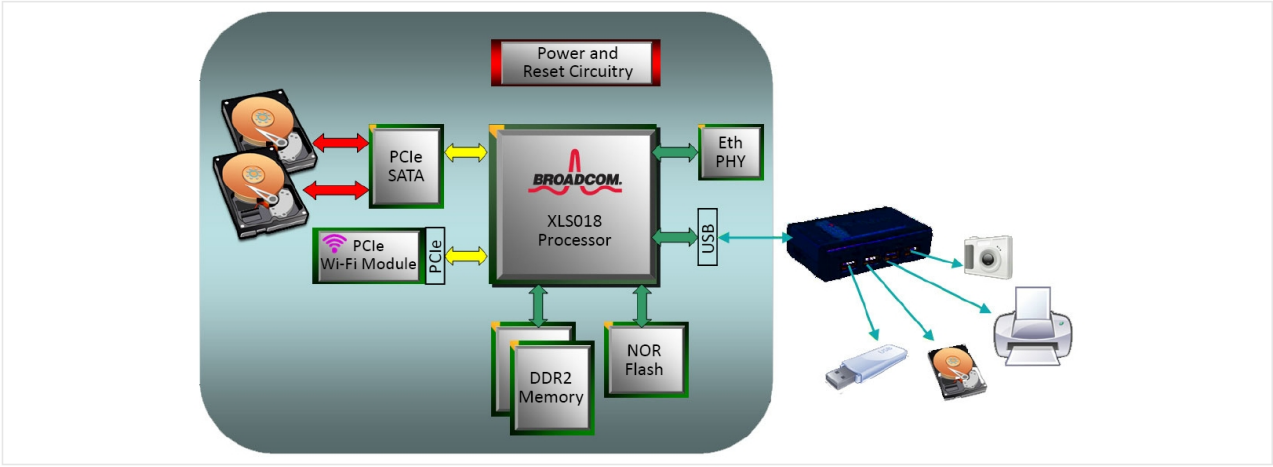


Highlights

- SATA disk interfaces, allowing up to two disks that support a variety of RAID configurations such as RAID0, 1, and 10
- USB interface to connect to an additional external RAID5 disk and other peripheral devices
- GbE networking interface
- Onboard DDR2
- A mini-PCIe slot that offers a wide range of add-on features such as Wi-Fi, eSATA, wireless modem, graphics coder, and Bluetooth
- XLS-based multicore, multithreaded XLS018 Processor that offers best-in-class performance
- Small and cost-effective mini-Tx form factor

	XLS NAS
Consumer NAS	●
SMB NAS	●

◐ Supported ● Best Choice



NAS Media Server Reference Design Kit Block Diagram

Software Development Kit

The HyperNAS Media Server Reference Design Kit comes with fully featured SDK equipped with the Broadcom bootloader, Linux 2.6.xx RAID enabled, Web-based configuration GUI (evaluation only), and complete development tool kit (compiler, debugger, and so on). It also provides sample code and a GUI. Broadcom supports the industry-standard GNU compiler toolchain with an XLS-optimized GCC compiler and a MIPS cross-compile toolchain for x86 Linux. Broadcom also provides an optional Linux-based XLS Debugger (compiler, linker, and debugger).

Platform Hardware

CPU

- XLS018 processor with eight NXCPUs

Peripherals

- One GbE port (TS enabled)
- One USB2.0 host port
- One RS232 DB9 UART
- Two SATA ports
- Mini-PCIe connector
- 802.11n Wi-Fi support
- Serial ToD (Time of Day) device
- I^2C E2PROM

Debug Support

- EJTAG port

Memory

- 256 MB of single-channel 533 MHz DDR2 RAM.
- Each slot accepts buffered or unbuffered, single or dual rank, 240-pin DDR2 DIMMs with 64-bit data, 8-bit ECC.
- Design supports up to 400 MHz operation.
- 32 MB of NOR Flash; 1 GB of NAND Flash (optional).

Indicators

- Power-on LED
- Disk activity LED
- Ethernet Link speed and activity sensors
- LED for user-defined functions such as alerts or message pending
- Onboard temperature sensors for case and CPU

Board Dimensions

- Mini ITX form Factor
- 7 inches x 7 inches
- Accepts any MITX power supply

Platform Software Support

Boot loader

- Broadcom boot loader

Operating System

- Linux 2.6.xx SMP Kernel
- CPIO RAMDisk image for initial boot
- Linux MD RAID automount/assemble

Protocols

- NFS, CIFS/SMB (Windows file sharing)
- FTP, SSH, TELNET
- NTP, HTTP, SMTP

RAID

- RAID0, RAID1, JBOD
- RAID5 (with external third disk)

Applications

- System Web-based GUI
- Disk management suite
- User/group management
- Quota management
- Sharing permissions
- Data encryption
- Printer spooler
- Mail spooler

Ordering Information

	Part Number
NAS Media Server Reference Design Kit	XLS1RD NAS-IA

About Broadcom

Broadcom Corporation (NASDAQ: BRCM), a FORTUNE 500® company, is a global leader and innovator in semiconductor solutions for wired and wireless communications. Broadcom® products seamlessly deliver voice, video, data, and multimedia connectivity in the home, office, and mobile environments. With the industry's broadest portfolio of state-of-the-art system-on-a-chip and embedded software solutions, Broadcom is changing the world by Connecting everything®. For more information, go to www.broadcom.com.

July 30, 2012 • XLS-PB200-R-EP