



# Wasabi Certified™ BSD

## Wasabi Certified™ BSD Board Support Packages

Vendor	CPU	Board
<b>ARM</b>		
Samsung	S3C2800	SMDK2800
ARM	920T	Integrator
Marvell®	MV88F5xxx	Orion
<b>IA-32</b>		
Supermicro	Intel® Xeon®	X5DP8
Supermicro	P4	P4DP8
Supermicro	P4	P4DP6
Tyan	P4	S2707
Shuttle	Via	SB52G2
Intel®	Intel® Xeon®	SE7501BR2
Intel®	Intel® Xeon®	SE7501CW2
Intel®	Intel® Xeon®	SE7501HG2
<b>Intel XScale® Microarchitecture</b>		
TeamASA	IOP310	NPWR
Intel®	IOP310	IQ80310
Intel®	IOP315	SV80315
Intel®	IOP315	IQ80315
Intel®	IOP321	IQ80321
Intel®	IOP321	IQ31244
ADI	80200	BRH
AD	80200	iHBA
Intel®	IXP425	IXDP425
ADI	IXP425	Coyote
Intel®	PXA2xx	Mainstone
Intel®	IXP28xx	IXDP28xx
<b>PowerPC</b>		
IBM®	STB01000	
AMCC®	405EP	Taihu
AMCC®	405GP	
AMCC®	405GPr	
AMCC®	440GP	
AMCC®	440GX	Taishan
AMCC®	440SP	
AMCC®	440SPe	Katmai
Force	PPC75x	PrPMC260
Freescale™	MPC75x	Sandpoint
IBM®	PPC750FX	Chestnut
IBM®	PPC750GX	Buckeye
Freescale™	MPC74xx	Sandpoint
Freescale™	MPC824x	Sandpoint
EST	MPC824x	SBC8240
Freescale™	MPC8xx	Adder 875
Freescale™	MPC8xx	ADS-866
Freescale™	MPC8260	PQ2FADS
Freescale™	MPC8280	PQ2FADS
Freescale™	MPC83xx	RIO-8349
Freescale™	MPC83xx	MDS-8349
Freescale™	MPC85xx	ADS-85XX
Freescale™	MPC85xx	CDS
Freescale™	MPC85xx	CDS-8548
Xilinx®	405(Virtex-II Pro)	ML300
Xilinx®	405(Virtex-II Pro)	Memec

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OEMs today need robust networking functionality, wide board support, and guaranteed, tested performance from their embedded operating systems. Wasabi Certified™ BSD (WCB), is a certified, tested, and optimized version of the NetBSD® operating system, offering the rich functionality of BSD Unix without Linux's troublesome GPL License and with the security of professional certification, testing and support. It is the premier OS for embedded, server, storage, and other networking-intensive applications. Every Wasabi Certified BSD Board Support Package includes support for the specific features of the hardware platform, documentation, cross toolchain hosted on Windows®, Linux, or BSD, complete source code, and 60 days of configuration and installation support.

### Certified and Tested on Leading Reference Platforms

All Wasabi Certified BSD packages are conformance and performance tested at Wasabi's performance and testing lab. Regression, characterization, and stress testing using the Wasabi Test Harness enables us to certify that the binary OS we deliver operates to a professional standard.

Full documentation is provided. Wasabi's test procedure includes:

- Building the source code in accordance with the same instructions provided to users.
- Installation of the binary image on the reference platform.
- Exhaustive testing of the functions provided by the reference platform/software package according to generally accepted benchmarks and methodology.

### NetBSD: The Best of Open Source

NetBSD is cleanly architected, with a familiar API -- which means rapid time to market and lower development costs. Your Unix-fluent developers can begin using it right away. In addition:

- NetBSD's TCP/IP implementation leads the industry, and is the basis of most TCP/IP implementations available today. Its networking functionality is unparalleled.
- NetBSD's kernel is open source, but governed by the BSD license, not Linux's GPL. With NetBSD, OEMs may keep changes to the kernel and related modules proprietary — with no threat of litigation or code exposure. For more information about the GPL, please visit: [www.wasabisystems.com/gpl](http://www.wasabisystems.com/gpl)
- NetBSD has a very small footprint; complete iSCSI application runs in 8M Flash on Intel XScale® platforms with room to spare.
- Thanks to NetBSD's thirty-year code heritage, its advanced technical features include POSIX compliance, high performance threads, IPv6 and IPsec, 32- and 64- bit support, performance-optimized VM, and high-performance file systems.

### Reliability and Support

The Wasabi team includes a number of experienced NetBSD developers and port-masters. WCB is tested and dependable, and already used in many high-reliability devices today. And Wasabi offers a range of custom support packages for Wasabi Certified BSD. Support is available in 40-hour, per-incident, or retained support packages, with maintenance, upgrades, and custom packages available to fit your needs.

### Special Networking Features

NetBSD is the gold standard in TCP implementations. Its renowned networking stack has been fully maintained and updated for over twenty five years, from its selection by DARPA to its contemporary status as the reference implementation for Unix. Many OS kernels use BSD networking code, but often an old version, from 4.4BSD or earlier. However, only a fully up-to-date BSD networking stack takes advantages of the thousands of new lines of code written every year.

### Minimum Footprint

WCB offers a Reduced Footprint (RF) option that allows configuration management for RAM and Flash allowing for a dramatically smaller image. Both kernel and serenade tools end up compressed into a single image which is written to Flash. A bootloader can then decompress the image into SDRAM before jumping to the image entry point. A functional WCB RF system can fit in 4MB Flash and 16MB SDRAM (depending on the platform).

### Interoperability

Unique binary compatibility protects users' investment in existing applications by in-kernel support for non-native binaries (for the same processor) to run transparently.

## Specifications

Vendor	CPU	Board
MIPS® Architecture		
Alchemy/AMD	Au1000	Pb1000
Alchemy/AMD	Au1100	Pb1100
Alchemy/AMD	Au1500	Pb1500
Alchemy/AMD	Au1500	DBAu1500
Cogent	Au1500	CSB250
Broadcom®	BCM1250	Swarm
Broadcom®	BCM1125	Rhone
MIPS	MIPS32-4Kc™	Malta
MIPS	MIPS64-5Kc™	Malta
MIPS	MIPS64-20Kc™	Malta
Toshiba	TX4927™	RBTX4927
SuperH™ Core		
SuperH™	SH5	Cayman
AMD64		
AMD	AMD64	Hammer

Feature	Details
<b>Extensive Hardware Device Support</b>	<ul style="list-style-type: none"> <li>▪ IDE, SCSI, USB, and SATA disks</li> <li>▪ CompactFlash</li> <li>▪ Network 10/100/1000, 802.11a/b/g/h/n</li> <li>▪ Serial console, Serial ATA, PATA, framebuffer</li> <li>▪ PCI, PCI-Express, PCI-X, ISA, CardBus, PCMCIA, USB2.0</li> </ul>
<b>Special Optional Optimizations and Extensions for Embedded</b>	<ul style="list-style-type: none"> <li>▪ Boot from CompactFlash</li> <li>▪ Micro web server</li> <li>▪ Additional hardware support on some platforms</li> <li>▪ TCP/IP optimizations</li> <li>▪ Reduced footprint feature for small RAM and Flash images</li> </ul>
<b>Optional Proprietary Extensions</b>	<ul style="list-style-type: none"> <li>▪ Wasabi journaling file system (WJFS)</li> <li>▪ WasabiRAID™</li> <li>▪ Wear leveling Flash support</li> <li>▪ iSCSI support and NAS support</li> </ul>
<b>Advanced File System Support</b>	<ul style="list-style-type: none"> <li>▪ High performance enhanced FFS</li> <li>▪ All major file systems supported including NFS version 3, MS-DOS FAT, Linux EXT2, ISO CD 9660, and NTFS</li> <li>▪ 4.4BSD log structured file system (LFS)</li> <li>▪ Wear-leveling Flash support works with all file systems</li> <li>▪ Robust file system support and file system layer abstraction</li> <li>▪ Support for large file systems of up to 4 terabytes</li> </ul>
<b>Secure, Protected Memory Design</b>	<ul style="list-style-type: none"> <li>▪ Advanced, object-oriented virtual memory with unified buffer cache and advanced sharing semantics</li> <li>▪ All standard Unix features, memory protection, security, reliability</li> </ul>
<b>Advanced Virtual Memory Features added for NetBSD</b>	<ul style="list-style-type: none"> <li>▪ Original Mach VM completely replaced with UVM</li> <li>▪ Page loanout for zero-copy data movement</li> <li>▪ Tunable page and file data cache</li> <li>▪ Memory pool manager reduces TLB thrashing and object allocation overhead</li> <li>▪ Tunable cache coloring</li> </ul>
<b>Interoperability (Systems)</b>	<ul style="list-style-type: none"> <li>▪ Linux (i386, m68k, alpha, powerpc, mips, arm)</li> <li>▪ Solaris and SVR4 (sparc, i386, m68k)</li> <li>▪ SunOS (m68k)</li> <li>▪ BSD/OS (i386) and FreeBSD (i386)</li> </ul>
<b>Rich Unix Functionality</b>	<ul style="list-style-type: none"> <li>▪ Solid and fast internet protocols</li> <li>▪ IPSec and IPv6</li> <li>▪ User-threads support</li> <li>▪ Advanced storage protocols</li> <li>▪ Remote maintenance</li> <li>▪ POSIX-compliant APIs</li> <li>▪ RAID support</li> <li>▪ Thousands of pre-packaged third-party applications</li> <li>▪ 64 bit addressing capability</li> </ul>
<b>Standard Networking Features</b>	<ul style="list-style-type: none"> <li>▪ Comprehensive networking stack including IPv6 &amp; IPv4</li> <li>▪ High security with IPSec (IPv4&amp;IPv6),VPN tunnels, Kerberos 5, SSH and OpenSSL support</li> <li>▪ Routing, switching, and packet filtering</li> <li>▪ Gigabit ethernet support</li> <li>▪ 802.11 a/b/g/h/n</li> <li>▪ VLANs and bridging</li> </ul>

### Wasabi Systems Inc.

500 East Main St.  
Suite 1520  
Norfolk, VA 23510 USA

Telephone: 757-248-9601  
Fax: 757-299-8075

Email:  
sales@wasabisystems.com

Web:  
www.wasabisystems.com

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### Wasabi Systems: A World Class Heritage

Wasabi Systems is the leader in embedded operating systems and networked storage software. The Wasabi Certified BSD OS is the same network operating system found in devices such as switches and routers that power the world's networking backbone. Wasabi Storage Builder for iSCSI and Storage Builder for NAS leverage Wasabi Certified BSD and Wasabi RAID to deliver world-class storage systems that are fast, robust, and reliable.

Wasabi - Powerful Stuff!

