Moving A FreeBSD System To AHCI

REVISIO	N HISTORY
REVISIO	N HISTORY

NUMBER	DATE	DESCRIPTION	NAME
	2014-01-17		WB

© 2014 Warren Block

Last updated 2014-01-17

Available in HTML or PDF. Links to all my articles here. Created with AsciiDoc.



Warning

Make a full backup first. Unless everything goes exactly right—and maybe even then—you can find yourself locked out without an easy way to fix things. A fixit LiveCD is handy to have available, or another FreeBSD system.

1 Does The Motherboard Controller Support AHCI?

If AHCI support is present, enable it in the BIOS. If your BIOS or chipset doesn't do AHCI, you might as well stop reading now.

2 Label Filesystems

Labeling your filesystems will eliminate the dependence on dynamic device names and make switching to AHCI much easier. See FreeBSD Labeled Filesystems.

3 Modify /boot/loader.conf

ahci_load="YES"

Alternately, add device ahci to the kernel config and rebuild the kernel.

Either way, your disks that were *ad* devices will now show as *ada* devices. *ad0* becomes *ada0*, and so on. If you use filesystem labels as advised above, you don't have to care.

4 Optional: Modify /etc/sysctl.conf

Increase vfs.read_max for better performance.

vfs.read_max=32

Some people have reported higher speeds with values of 64 or 128. It depends on your hardware, and benchmarking is really the only way to tell. /usr/ports/benchmarks/bonnie++ is popular.

5 Done!

That's it. The AHCI driver usually provides a performance increase in addition to more modern features than the old ATA drivers.