

Building FreeBSD World And Kernel: The Short Form

REVISION HISTORY

NUMBER	DATE	DESCRIPTION	NAME
	2013-09-09		WB

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Last updated 2013-09-09

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Building FreeBSD world and kernel: the concise version.

1 Introduction

Building the world and kernel on FreeBSD need not be a big deal. [The Handbook has the long, detailed procedure](#). Most of the time, that procedure can be greatly reduced. Here we'll use a shorter, simpler, faster version. If there are problems, try the Handbook procedure, or check `/usr/src/UPDATING` for instructions.

2 The Really Short Version

```
# rm -rf /usr/obj          ❶
# cd /usr/src
# make buildworld         ❷
# make kernel             ❸
# make installworld      ❹
# mergemaster -Ui        ❺
# shutdown -r now
# cd /usr/src
# make check-old         ❻
```

- ❶ Deleting the old object directory speeds up the build. If `/usr/obj` has special permissions or flags like `nodump`, deleting `/usr/obj/usr` is usually enough and preserves the parent directory. If the system has enough RAM, a `tmpfs(5)` filesystem can be used in `/etc/fstab`:

#	Device	Mountpoint	FStype	Options	Dump	Pass#
	tmpfs	/usr/obj	tmpfs	rw,mode=01777	0	0

- ❷ Using the `-j` option can increase speed by running multiple jobs. How many jobs to use depends on the processor; number of cores plus one is a start. Test other values, because hardware varies. The `devel/ccache` port can also increase speed if you update regularly.
- ❸ The `kernel` target builds and installs the new kernel. If you have a custom kernel, set the name in the `KERNCONF` variable (`make kernel KERNCONF=MYKERNEL`). The official Handbook procedure recommends a reboot into single user mode after installing the new kernel, but it is not required.
- ❹ Do not use `-j` with `installworld`.
- ❺ `-Ui` speeds `mergemaster` usage. Set `IGNORE_FILES=` in `/etc/mergemaster.rc` to skip files that don't need to be merged. See `mergemaster(8)`.
- ❻ If old files are found, use the `delete-old` and `delete-old-libs` targets to remove them. Programs that are still using old libraries will be broken until they have been recompiled.