

Simplifying FreeBSD Kernel Config Files

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Including the GENERIC kernel config file can make customizations easier.

1 Introduction

Building a custom kernel for FreeBSD has never been particularly difficult. In the old days, we'd copy `GENERIC` to another file and start modifying it. The new custom config file had to be periodically compared to `GENERIC`, or changes in newer versions of `GENERIC` would be missed. The initial customization meant going through the copied file and removing all the things that weren't needed, and modifying those that were needed.

2 Including GENERIC

Today there's a better way to make a customized kernel config file. By including `GENERIC` into the custom config, updates are brought in automatically. The user's customizations become a diff against `GENERIC`. It's much like the way `/etc/defaults/rc.conf` is read at boot, then overridden by settings in `/etc/rc.conf`, or how properties and methods of an object can be overridden with a subclass.

3 How It Works

A short sample:

```
include GENERIC
nocpu    i486_CPU
ident    SUPERKERNEL

nooptions    INET6
nooptions    WITNESS
nooptions    INVARIANTS

nodevice     eisa

nodevice     fdc

device       ahci
```

The `GENERIC` kernel is included, support for 486 processors is disabled, then `ident` is overridden with the new kernel name. `nooptions` and `nodevice` are used to turn off things that `GENERIC` enables but are not wanted in `SUPERKERNEL`. The `ahci` device that `GENERIC` does not include is then added.

The kernel built from this file will be the same as that built from `GENERIC`, but with these added customizations. The next time `SUPERKERNEL` is built, it will include the current version of `GENERIC` without the user having to do anything extra.

4 More Information

[config\(5\)](#)

[tuning\(7\)](#)