

速通 Linux 内核实践

A Fast Tour of Linux Kernel Practice

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What is linux kernel

kernel.org

- **Open Sourse** Software
- **General Purpose** Usage for Desktop/Server/Embedded/Realtime
- **Tons of developers**

What is linux kernel do

kernel.org

- **Bootup** the device
- **Control** the system
- **Expose** the kernel capability to userspace
- **Running** in userspace as a process
- **Share** your discover to community

Where to download linux kernel

- Get source from home or mirror (such as github mainline,github stable, cernet)
- mainline v7.1 ?
- stable v7.1.1 ?
- Its v6.18.36 ?
- Why not -rc ? aimed at other kernel developers.
- Vendor kernel: chromeos/debian/deepin/openEuler...

Why make own kernel

- Patch kernel with maillist or mix vendor patch
- Or your patch !
- Change kernel config for Performance, Debug or etc.
- Just for fun, such as use different compiler! GCC LLVM etc.

Easy to make kernel

- Almost Information can found in docs.kernel or kernel/Documentation or lore.kernel
- Install dependency (bc build-essential zstd flex bison libssl-dev make libelf-dev git debhelper pahole libncurses-dev gcc-plugin-dev libdw-dev and etc. if you want Rust or makedocs)
- Get Source
- Patch kernel (Optional)
- Run 'make help' (Optional)
- Make config (from zcat /proc/config.gz or ...)
- Set environment var (CC=? LLVM=? CROSS_COMPILE=?)
- Make for your distro
- Install the kernel
- Enjoy it!

Knowledge kernel is easy

tool use

- Read The Fucking Source/Manual
- Git log to know why the source is.
- Dmesg log, Tracepoint, eBPF, Ftrace, kernelshark or Printk!
- From LLM!
- Send email to ask maintainer or reviewer in maillist.

Easy to contribute upstream

- Issue the field is kernel
- Use the scripts/get_maintainer.pl path/to/file or path/to/your-patch
- format and cover-letter and Sign-off-by your patch
- git send-email
- reply to message id
- see https://docs.kernel.org/translations/zh_CN/process/submitting-patches.html

Submit patches in community

- By Committer side
- Don't worry to share your thought after search
- By Maintainer side thought
- Patches is some of the whole spam patches
- Patches it too huge to review
- Patches hide some problems to fix
- Solution can be more simple/generic to maintain
- Chatting and come to a point