LESSON 6



UNIX

FreeBSD & OpenBSD

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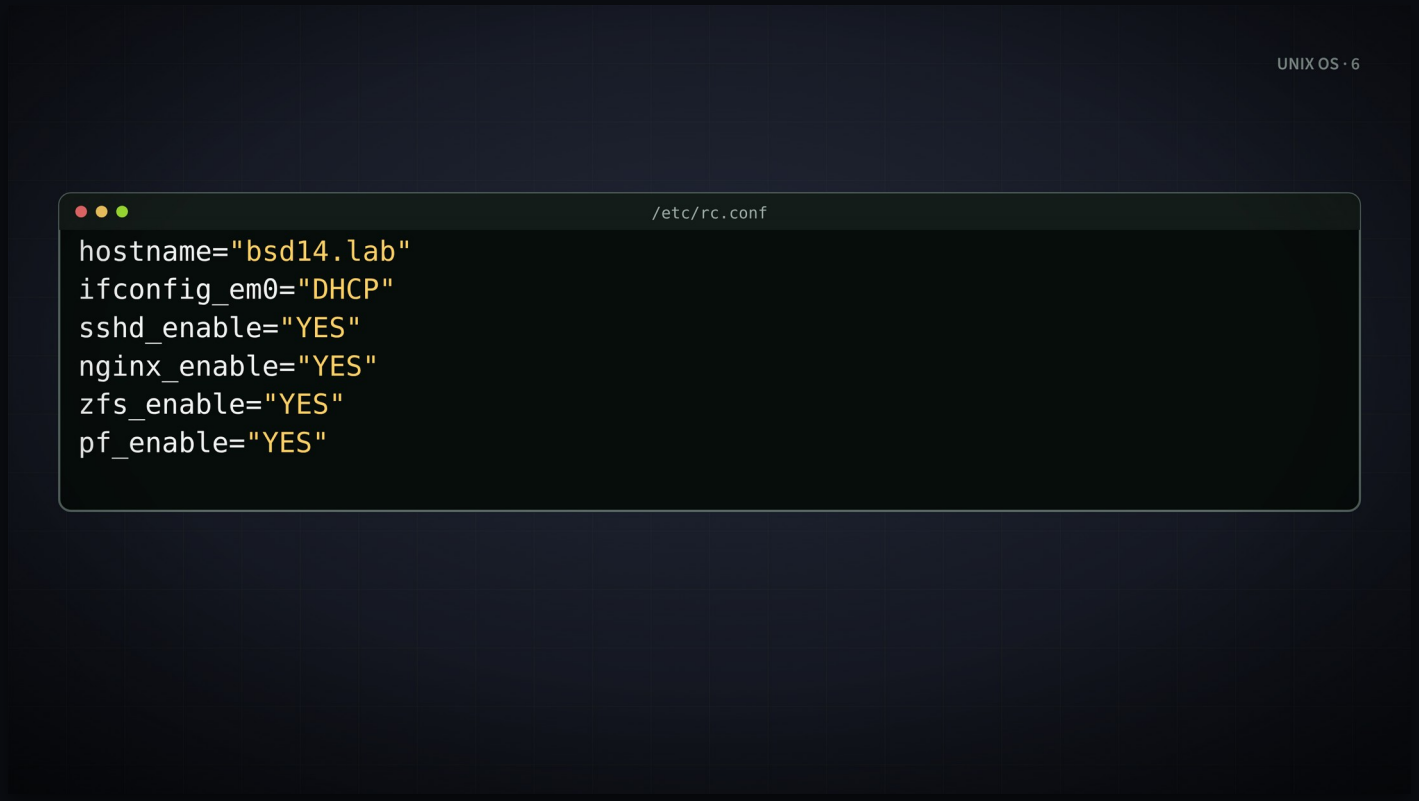
UNIX OS

LESSON 6

The BSD Family: FreeBSD, OpenBSD and NetBSD

Installing FreeBSD, pkg and ports, jails, ZFS, OpenBSD security and pf

A Complete System



- Unlike Linux distributions, each BSD is developed as one complete system: the kernel and …
- Configuration is famously simple. Almost everything lives in slash etc slash rc dot conf.

01

pkg and Ports

terminal

```
# pkg install nginx bash vim
# pkg upgrade
# cd /usr/ports/www/nginx && make config install clean
# freebsd-update fetch install
# service nginx start
Performing sanity check on nginx configuration: OK
```

- pkg installs ready-made binary packages. The Ports Collection builds over thirty thousand …
- freebsd-update upgrades the base system itself, separately from packages.

02

Jails



- FreeBSD jails, introduced in 2000, isolate a group of processes with their own file system, ...
- They are light and secure, and tools like Bastille make them easy to manage.

03

ZFS on FreeBSD

terminal

```
# zpool create tank mirror ada1 ada2
# zfs create tank/home
# zfs snapshot tank/home@before-upgrade
# zfs list -t snapshot
tank/home@before-upgrade   0B   -   96K
# zfs rollback tank/home@before-upgrade
# bectl create pre-14.2 && freebsd-update upgrade -r 14.2-RELEASE
```

- FreeBSD offers ZFS right in the installer. A pool combines disks with mirroring or RAID-Z, …
- Boot environments let you upgrade, and roll the whole system back if something breaks.

04

OpenBSD, NetBSD and pf

/etc/pf.conf

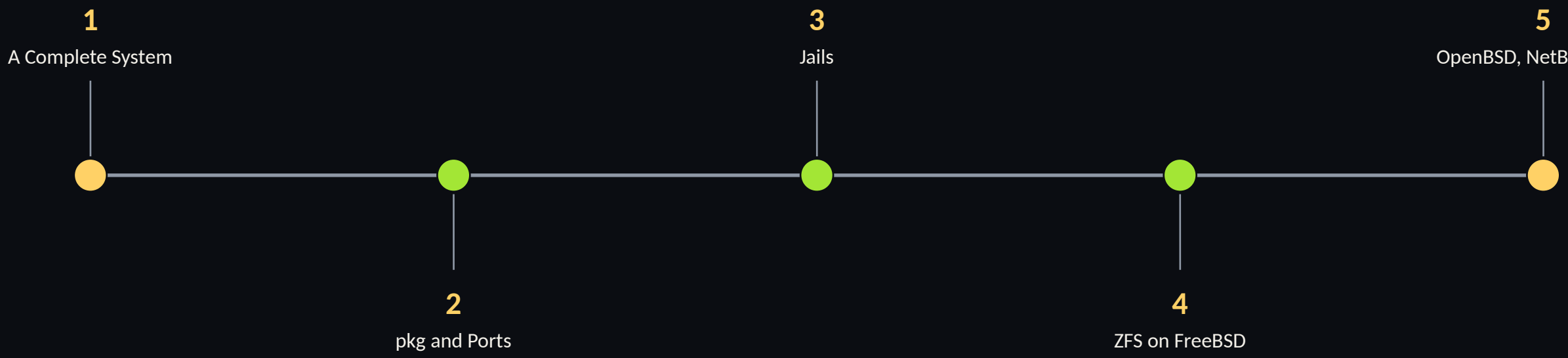
```
ext_if = "em0"
set skip on lo
block in all
pass out all keep state
pass in on $ext_if proto tcp to port { 22 80 443 }

# pfctl -f /etc/pf.conf && pfctl -e
```

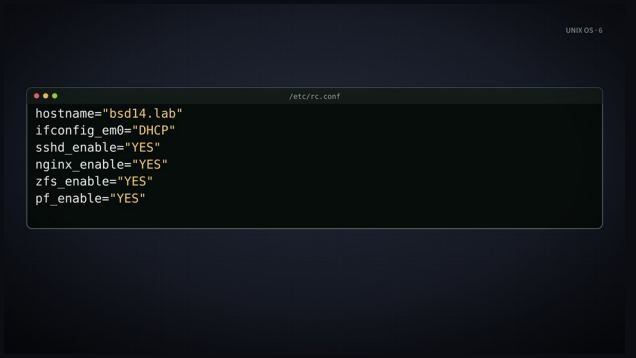
- OpenBSD puts security first: code audits, secure defaults, and only two remote holes in the ...
- pf, OpenBSD's packet filter, is a clean, powerful firewall also found on FreeBSD and macOS. ...

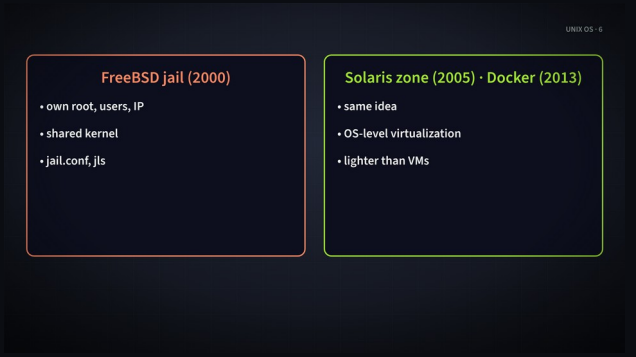
05

Lesson Map


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Sources and Further Reading





Thank you for watching

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