

REFERENSI CEPAT ALPINE LINUX

Manajemen paket, layanan, jaringan, Docker base image

Manajemen Paket

Dasar apk

```
apk update # refresh package index
apk upgrade # upgrade all packages
apk add curl git vim # install packages
apk del curl # remove a package
apk search nginx # search for packages
```

Info Paket

```
apk info # list installed packages
apk info -a nginx # detailed package info
apk info -L nginx # list files in package
apk policy nginx # show available versions
```

Virtual Package

```
# Install build deps as a group, remove later
apk add -virtual build-deps gcc musl-dev
make && make install
apk del .build-deps
```

Repository

```
# /etc/apk/repositories
https://dl-cdn.alpinelinux.org/alpine/v3.20/main
https://dl-cdn.alpinelinux.org/alpine/v3.20/community
@edge https://dl-cdn.alpinelinux.org/alpine/edge/testing
```

Layanan

Manajemen Layanan OpenRC

```
rc-service nginx start # start service
rc-service nginx stop # stop service
rc-service nginx restart # restart service
rc-service nginx status # check status
```

Manajemen Runlevel

```
rc-update add nginx default # enable at boot
rc-update del nginx default # disable at boot
rc-update show # list all services
rc-status # show running services
```

Runlevel

sysinit Inisialisasi sistem (filesystem, jam)
boot Layanan sistem dasar (jaringan, syslog)
default Layanan normal (web server, daemon)
shutdown Tugas saat shutdown

Konfigurasi

File Konfigurasi Utama

/etc/apk/repositories URL repository paket
/etc/hostname Hostname sistem
/etc/network/interfaces Konfigurasi interface jaringan
/etc/conf.d/ Konfigurasi per-layanan
/etc/motd Pesan saat login

Setup Sistem

```
setup-alpine # interactive full setup
setup-timezone # set timezone
setup-keymap # configure keyboard layout
setup-hostname myhost # set hostname
```

Timezone

```
apk add tzdata
cp /usr/share/zoneinfo/US/Eastern /etc/localtime
echo "US/Eastern" > /etc/timezone
apk del tzdata # optional: remove to save space
```

Jaringan

Konfigurasi Interface

```
# /etc/network/interfaces
auto eth0
iface eth0 inet dhcp
# ... static ...
iface eth0 inet static
address 192.168.1.10/24
gateway 192.168.1.1
```

Perintah Jaringan

```
ip addr show # show IP addresses
ip route show # show routing table
ip link set eth0 up # bring interface up
setup-interfaces # interactive net config
```

DNS & Firewall

```
# DNS: /etc/resolv.conf
nameserver 1.1.1.1
nameserver 8.8.8.8
# Firewall
apk add iptables
iptables -L -n # list rules
```

Pengguna

Manajemen User

```
adduser alice # create user (interactive)
adduser -D -s /bin/sh bob # non-interactive, set shell
deluser alice # delete user
passwd alice # set/change password
```

Group & Sudo

```
addgroup devs # create group
addgroup alice devs # add user to group
apk add doas # lightweight sudo alternative
# /etc/doas.conf
permit persist alice as root
```

System User

```
adduser -S -D -H -s /sbin/nologin myapp
# -S system user -D no password
# -H no home dir -s no shell
```

Disk & Storage

Perintah Filesystem

```
df -h # disk usage summary
du -sh /var/log # directory size
lsblk # list block devices
mount /dev/sdal /mnt # mount device
umount /mnt # unmount
```

LBU (Alpine Local Backup)

```
# For diskless/data modes - persist changes across reboots
lbu status # show uncommitted changes
lbu commit # save changes to boot media
lbu list # list backed-up files
lbu include /etc/myconf # add path to backup
```

Setup Disk

```
setup-disk # interactive disk install
setup-disk /dev/sda # install to specific disk
# Modes: sys (traditional), data, diskless
```

Docker Base Image

Kenapa Alpine untuk Docker

~5 MB base image vs ~80 MB untuk Debian slim
musl libc Lebih kecil dari glibc (ada isu kompatibilitas)

apk package manager Cepat, tanpa cache secara default
Attack surface minimal Paket lebih sedikit = CVE lebih sedikit

Dockerfile Minimal

```
FROM alpine:3.20
RUN apk add --no-cache python3 py3-pip
COPY app.py /app/
CMD ["python3", "/app/app.py"]
```

Multi-Stage Build

```
FROM golang:1.22-alpine AS builder
WORKDIR /src
COPY . .
RUN go build -o /app
FROM alpine:3.20
COPY --from=builder /app /app
CMD ["/app"]
```

Gotcha Umum

--no-cache Selalu gunakan agar image tetap kecil

musl vs glibc Beberapa binary butuh paket gcompat

Bash tidak ada secara default Gunakan /bin/sh atau apk add bash

Timezone tidak tersedia Install tzdata jika diperlukan

Pola Umum

Install Build Tools

```
apk add --no-cache build-base # gcc, make, etc.
apk add --no-cache python3-dev # Python headers
apk add --no-cache linux-headers # kernel headers
```

Cron Job

```
# Add a cron job
echo "*/* * * * * /usr/local/bin/task.sh" \
| crontab -
rc-service crond start
rc-update add crond default
```

Aktifkan SSH

```
apk add openssh
rc-service sshd start
rc-update add sshd default
# Config: /etc/ssh/sshd_config
```

Upgrade Versi Alpine

```
# Edit /etc/apk/repositories: change v3.19 -> v3.20
apk update
apk upgrade --available
sync && reboot
```