

Cron Quick Reference

Job scheduling, crontab syntax, special strings, logging

Syntax

Crontab Format

```
# | minute (0-59)
# | | hour (0-23)
# | | | day of month (1-31)
# | | | | month (1-12)
# | | | | | day of week (0-7, 0&7=Sun)
# * * * * * command
```

Field Values

***** Any value (wildcard)
, Value list: **1,3,5**
- Range: **1-5**
/ Step: ***/10** (every 10)
0-59 Minutes range
0-23 Hours range
1-31 Day of month range
1-12 Month range (or JAN-DEC)
0-7 Day of week (0&7=Sun, or SUN-SAT)

Special Strings

Shorthand Schedules

@reboot Run once at startup
@yearly **0 0 1 1 *** — once a year (Jan 1)
@monthly **0 0 1 * *** — once a month (1st)
@weekly **0 0 * * 0** — once a week (Sunday)
@daily **0 0 * * *** — once a day (midnight)
@hourly **0 * * * *** — once an hour

Examples

Common Schedules

```
30 2 * * * /usr/local/bin/backup.sh
0 9 * * 1-5 /opt/report.sh
*/15 * * * * /usr/bin/health-check.sh
0 0 1 * * /opt/monthly-cleanup.sh
0 8,17 * * * /opt/notify.sh
```

Schedule Breakdown

30 2 * * * Daily at 2:30 AM
0 9 * * 1-5 Weekdays at 9:00 AM
***/15 * * * *** Every 15 minutes
0 0 1 * * First day of month, midnight
0 8,17 * * * Daily at 8 AM and 5 PM

Environment

Setting Variables

```
SHELL=/bin/bash
PATH=/usr/local/bin:/usr/bin:/bin
MAILTO=admin@example.com
HOME=/home/deploy
* * * * * /opt/myjob.sh
```

Environment Notes

SHELL Shell used to run commands (default **/bin/sh**)
PATH Search path (cron default is minimal)
MAILTO Email output to this address (empty = no mail)
HOME Home directory for the cron job

Logging

Output & Logging

```
# redirect stdout + stderr to a log file
*/5 * * * * /opt/job.sh >> /var/log/job.log 2>&1
# discard all output
0 3 * * * /opt/job.sh > /dev/null 2>&1
# log only errors
0 3 * * * /opt/job.sh > /dev/null 2>> /var/log/job-err.log
```

Viewing Cron Logs

```
# Debian / Ubuntu (syslog)
grep CRON /var/log/syslog
# RHEL / CentOS
cat /var/log/cron
# journalctl (systemd)
journalctl -u cron --since "1 hour ago"
```

Common Schedules

Everyday Patterns

0 * * * * Every hour on the hour
***/5 * * * *** Every 5 minutes
***/30 * * * *** Every 30 minutes
0 0 * * * Daily at midnight
0 6 * * 1 Every Monday at 6 AM
0 0 1,15 * * * 1st and 15th of month
0 0 * * 5 Every Friday at midnight
0 0 1 1 * Every January 1st

crontab Commands

Managing Crontabs

```
crontab -e # edit your crontab
crontab -l # list your crontab
crontab -r # remove your crontab
crontab -u alice -l # list another user's (root)
crontab /path/to/file # install crontab from file
```

System Crontab Locations

/etc/crontab System-wide crontab (has user field)
/etc/cron.d/ Drop-in cron files
/etc/cron.daily/ Scripts run daily
/etc/cron.hourly/ Scripts run hourly
/etc/cron.weekly/ Scripts run weekly
/etc/cron.monthly/ Scripts run monthly
/var/spool/cron/ Per-user crontab storage

Tips

Best Practices

Use absolute paths Cron PATH is minimal; always use full paths
Redirect output Avoid mail floods with **> /dev/null 2>&1**
Lock files Use **flock** to prevent overlapping runs
Test first Run the command manually before scheduling
Use MAILTO Set **MAILTO=""** to suppress all email
Check timezone Cron uses system time; verify with **date**

Preventing Overlap with flock

```
# only run if not already running
* * * * * /usr/bin/flock -n /tmp/job.lock /opt/job.sh
```