

Chapter 9 -

Chapter 11 - Running program at specified times

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System clock

```
$ date # shows current date/time
$ date 201505050001.30 # changes time to 2015/05/5
```

Scheduling commands

- Cron
 - Periodic
 - Crond (daemon), crontab (file)

- ```
$ crontab filename
$ crontab -e # edit
$ crontab -l # list
$ crontab -r # remove
```

- At
  - One time
  - Atd

- ```
$ at -t filename # set job
```

crontab

```
$ EDITOR=vi
$ export Editor
$ crontab -e
- minute: 0-59
- hour: 0-23
- day of month: 1-31
- month: 1-12
- day of week: 0-7
- command
```

```

#m h day M week
10 3 * * * /usr/sbin/logadm
15 3 * * 0 /usr/lib/fs/nfs/nfsfind
30 3 * * * [ -x /usr/lib/gss/gsscred_clean ] && /usr/lib/gss/gsscred_clean
#

```

Crontab expression

- Comma and no space
 - 0,2,5,7,9
- Through
 - 1-5
- Every
 - *
- Step
 - 10-16/2
 - 10,12,14,16

Managing out from cron

```

$ [commands] | mail -s "... " username
# -s: subject
# username
$ [command] >> log.file # redirect output to log file

```

Controlling access to cron/at

- /etc/cron.allow
 - specify allowed username for cron
- /etc/cron.deny
 - deny user from using cron
- /etc/at.allow
 - specify allowed username for at
- /etc/at.deny
 - deny user from using at
- username
 - ALL - all users can use at/cron

at

- One time execution

```

$ atq # shows waiting list
$ atrm # remove job from waiting list
$ at 17:00 # sets one time job for 17:00
$ at 4pm + 3 days # schedule one time job 3 days later
$ at -f at.file # using file to schedule command

```

