



Scheduling & Background tasks

cron, at, nohup and screen

for Hampshire Linux User Group

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Scheduling & Background tasks

A basic Overview

Scheduling

- ◆ sleep
- ◆ at
- ◆ cron

Background

- ◆ nohup
- ◆ screen

Sleep – delay running a command

Often used in scripts to pause but can also be used on the command line e.g.

```
$ sleep 90 ; echo hello
```

time period suffix may be :

- 's' for seconds (the default),
- 'm' for minutes,
- 'h' for hours
- 'd' for days.



at – running command at a schedule time

Allows you to schedule at task to run at a specific time

```
$ at -f script.file <time>
```

```
$ atq - list at scheduled tasks
```

```
$ atrm <jobid>
```

Output from script sent via email

- Pro – Quick and easy to schedule
- Con – Only runs once not so good for repetitive tasks



cron – a daemon to execute scheduled commands

Service which runs behind the scenes executing
schedules tasks

Can be used for many tasks such as

- Log rotation
- Automated monitoring or system checks
- Email reminders and alerts
- Just about any other routinely scheduled scriptable activity

Two main ways to schedule a task

- `cron.{hourly,daily,weekly,monthly}`
- `crontab`

cron.{hourly,daily,weekly,monthly}

Series of directories in /etc

- /etc/cron.hourly
- /etc/cron.daily
- /etc/cron.weekly
- /etc/cron.monthly

Any script placed in these directories will be run at the appointed time.

When do cron.{hourly,daily,weekly,monthly} run?

Distro dependent and easily configurable for a definitive answer
look in
`/etc/crontab`

Debian (default values)

- Hourly
17 minutes past the hour
- Daily
06:25 each day
- Weekly
06:47 every Sunday
- Monthly
06:52 on the 1st of the month

Red Hat (default values)

- Hourly
1 minute past the hour
- Daily
04:02 each day
- Weekly
04:22 every Sunday
- Monthly
04:42 on the 1st of the month

crontab

- Pro - Free format scheduling can be used to schedule a task at any time(to minute accuracy)
- Con - Not so friendly a format for scheduling
- `$crontab -l #` to list a users crontab
- `$crontab -e #` to edit the crontab

Format of the crontab:

minute hour day-of-month month day-of-week command

e.g.

```
29 00 * * * /home/andy/bin/irclm.pl /home/andy/bin/irclm_TSC.cfg
```

```
30 23 * * 0 mailx -a "From: andy@hantslug.org.uk" -s "BEDTIME!" andy@hantslug.org.uk  
</home/andy/mail/bed.now
```

Running cron jobs



Regardless of how its scheduled once running cron tasks share common characteristics

- Run as the user who scheduled them with those permissions and access rights
- Normally no user interaction possible
- Output (/std/out and /std/err) are emailed to the user



nohup - run a command ignoring "hangup"s

Allows you to run a task in the background which won't be killed when the terminal is killed or the user logs out.

\$nohup <comand or script>

screen- a virtual screen manager

Allows you to run virtual terminals and disconnect/re-connect to them remotely

To start screen

```
$ screen
```

Default meta key is Ctrl-A, but can be configured to use other keys via command line options

To list available screen sessions

```
$screen -list
```

To reconnect to an existing screen

```
$screen -r <session id>
```

To reconnect forcing previous session to disconnect

```
$screen -rd <session id>
```

Screen – key strokes

Quick reference

- <MetaKey> c - creates a new terminal
- <MetaKey> <space> - move to next term
- <MetaKey> [0-9] - jump to a term number
- <MetaKey> A - rename term
- <MetaKey> w - display terms available
- <MetaKey> [- mark & copy text
- <MetaKey>] - paste text
- <MetaKey> d - disconnect screen session

Resources

- Newbie: Intro to cron -
<http://www.unixgeeks.org/security/newbie/unix/cron-1.html>
- GNU Screen homepage -
<http://www.gnu.org/software/screen/>
- The Screen Utility (Linux Gazette) -
http://linuxgazette.net/issue01to08/lg_issue7.html#screen
- Introduction to screen -
<http://www.linuks.mine.nu/irc/screen/>
- HantsLUG wiki LinuxHints/Screen -
<http://www.hantslug.org.uk/cgi-bin/wiki.pl?LinuxHints/Screen>

and of course

- man pages