System Administration

HELP! I need sleep!

You go home.

Your computer never does.

You need sleep.

Your computer is up all night.

What if your computer cries in the middle of the night?

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Is there any way to automate some tasks?

Yes. **cron** and **anacron** allow you to *schedule* tasks to be completed at specific times and/or on specific days

Jobs are scheduled to be run using the following sources:

- *crontab* file
- files in */etc/cron.d*
- Files in */var/spool/cron*

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These sources are read when the **cron** daemon **crond** is started at boot time

They are then read every minute thereafter as long as **crond** is running

Crontab format

The general format of *crontab* is 5 time fields followed by a command:

min h d m dw command

where:

min	minute (0-59)
h	hour (0-23)
d	day of the month (1-31)
m	month (1-12)
dw	day of the week (0-7)

specify the date and time when the command should be run

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Each field can be specified as a range and can contain * as a placeholder, specifying all possible values.

```
58 23 * * *
```

Fields can also be specified as a list of values.

```
0 8,18 * * *
```

Finally, fields can have a step value so that the command can be run at periodic intervals

```
*/5 * * * *
```

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The command is executed in the Bourne shell so any redirection of output must follow Bourne shell rules

```
update_logs.pl 1-22 > /dev/null
2>&1
```

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/etc/crontab

```
01 * * * * root run-parts /etc/cron.hourly
02 4 * * * root run-parts /etc/cron.daily
22 4 * * 0 root run-parts /etc/cron.weekly
42 4 1 * * root run-parts /etc/cron.monthly
```

/usr/bin/run-parts is a script that runs executes all the files in a given directory

In this way, several tasks can be executed at regular intervals with one command.

Unfortunately, the names cron.xxxx have no direct association with **cron**.

crontab Command

Individual users can create their own crontabs with the **crontab** command

crontab -e - create/edit a crontab

crontab -l - list the contents of a crontab

User crontabs are stored in */var/spool/cron*

Even root can have its own crontab

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Exercise

Use **cron** to create a heartbeat file for your system

```
# crontab -e

 */1 * * * * /bin/touch /var/run/heartbeat

# ls -l /var/run/heartbeat
```

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cron vs. anacron

cron assumes your system is running continuously
(and that **crond** is running).

anacron picks up where **cron** leaves off. Anacron uses a config file and time stamps to determine the last time a task was done. If the tasks is overdue to be done, **anacron** makes sure it gets done.

anacron does not run continuously. It is a “one shot” command. It is usually invoked on boot-up

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anacron

anacron is configured with the file */etc/anacrontab* which has the general format

period delay job-identifier command

anacron checks to see if **command** has been executed in the last **period** days, using the timestamp in the file named */var/spool/anacron/job-identifier*. If the command has not been run, **anacron** waits **delay** minutes and then executes the command.