

# Linux Administration

## Scheduled jobs

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# Scheduled task types

- Two type of scheduled tasks can be used on a Linux system:
  - system scheduled tasks
  - user scheduled tasks
- root's scheduled tasks are a special case, they could almost be considered like the ones used by the system.

# System scheduled tasks

- The *cron* package is usually installed by default with most distributions. *cron* is the program that will let you schedule jobs (usually called *cronjobs*).
- */etc* contains various files and directories related to scheduled tasks.

# System scheduled tasks files

- /etc/crontab (main file)
- /etc/cron.hourly (directory)
- /etc/cron.daily (directory)
- /etc/cron.weekly (directory)
- /etc/cron.monthly (directory)
- Usually the directories contains only scripts that are called from the main configuration file.

# crontab file syntax

- Each task is defined on one line, with the following syntax:
  - minute (0-59)
  - hour (0-23)
  - day of the month (1-31)
  - month (1-12)
  - day of the week (0-6 or sun, mon, tue, wed, thu, fri, sat)
  - username
  - command
- A star character (\*) used for any of those values will make the task run at every occurrence.
- Special formats are also available, such as “@reboot”.

# cronjob environment

- By default, cron will launch the command using the */bin/sh* shell (not Bash or any other user shell).
- Certain environment variables may not be set, be sure to thoroughly test the script that you are scheduling.

# Scheduled task results

- The task output will generate an email.
- When executed by the system, details are usually saved to a system log file.



# User scheduled tasks

- If authorized on the system (by the */etc/cron.allow* and */etc/cron.deny* files), users can create their own crontab file.
- This file is usually saved in the */var/spool/cron/crontabs* directory.
- The syntax is identical to the regular crontab file.
- A user can run the *crontab -e* command to edit the file and the *crontab -l* to list the content of the file.

# The at command

- *at* will let you run one specific command (or script) at a later time.
- You can schedule multiple tasks, but each one will run only once (no repetition).

# Creating an at task

- You can schedule a specific script:  
*at 15:00 -f /home/user/script.sh*
- One other option is to launch at and then specify the command to run:  
*at 15:00*  
*mkdir /tmp/test-directory*  
*^D*

# Working with at commands

- To list all jobs scheduled with at for your account, use the *atq* command.
- To cancel a job, use the *atrm* command with its ID number.
- Tasks are saved under the */var/spool* directory, until completion.
- The task output can generate an email.