**Operating Systems – Linux Lab 4 Q&A**

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Operating Systems Environments & Administration

1. What is the purpose of cron?

Answer: cron is a daemon and it is a long-running time based job scheduler process in unix/linux OS. This is used to scheduled jobs such as shell scrips, commands to run at specified time, date, or at regular intervals. cron checks for new crontab files at /var/spool/cron/crontab, reads the execution times within the files, submits the command for execution as per the commands in the crontab files, and listens for notifications from the crontab commands about updates of the files.

1. What is a crontab?

Answer: crontab is command to create and maintain a file, called crontab file, that contains list of commands with strict syntax rules that cron daemon process reads and acts upon such scheduling jobs.

1. What command should be used to edit a crontab?

Answer: crontab -e <username>

1. Name and describe the five (5) interval fields used in a crontab.

Answer: The crontab file has five fields to specify day, date and time followed by the command to be run at that interval.

**Minute [0-59]**: This is the first filed of the entry to specify the minute to schedule the job. It can be either a number between 0 to 59 OR two numbers in the range separated by a hyphen (inclusive range) OR a list of number or ranges separated by commas. An “\*” in this field stands first through last [0-59] which is “every minute”.

**Hour [0-23]**: This is the second field of the entry to specify the hour to schedule the job. It can be either a number between 0 to 23 OR two numbers in the range separated by a hyphen (inclusive range) OR a list of number or ranges separated by commas. An “\*” in this field stands first through last [0-23] which is “every hour”.

**Day of Month [1-31]**: This is the third field of the entry to specify on what day of the month to schedule the job. It can be either a number between 1 to 31 OR two numbers in the range separated by a hyphen (inclusive range) OR a list of number or ranges separated by commas. An “\*” in this field stands first through last [1-31] which is “every day”.

**Month [1-12]**: This is the fourth field of the entry to specify on what month the job to be scheduled. It can be either a number between 1 to 12 OR two numbers in the range separated by a hyphen (inclusive range) OR a list of number or ranges separated by commas. An “\*” in this field stands first through last [1-12] which is “every month”.

**Day of week [0-6 0=Sunday]**: This is the fifth and last field of the entry to specify on what day of the week the job to be scheduled. It can be either a number between 0 to 6; 0 being Sunday and 6 being Saturday OR two numbers in the range separated by a hyphen (inclusive range) OR a list of number or ranges separated by commas. An “\*” in this field stands first through last [0-6] which is “Sunday through Saturday – everyday of the week”.

1. How many times will the following crontab entry execute during **January 2018**?

0  0  \*  1  1  rm -r /root/backup/\*

Answer: 5 times

1. How many times will the following crontab entry execute during **January 2018**?

0  0  \*  1  6  rm -r /root/backup/\*

Answer: 4 times

1. List all of the dates the following crontab entry will execute during **2018** (this answer is a little tricky).

0  0  1/10  \*  7  rm -r /root/backup/\*

Answer: This is an invalid entry and it cannot be added to crontab file. comma needs to be used to specify multiple values and hyphen to specify range of values. “Day of month” filed 1/10 is invalid. Also “day of week” filed should be between 0 and 6 and not 7.

**crontab -e command will fail with the following:**

bad day-of-month  
errors in crontab file, can't install.  
Do you want to retry the same edit?

1. How often will the following crontab entry execute?

\*  \*  \*  \*  \*  users >> /root/users.log

Answer: Every minute

9. What crontab time interval would execute a command at 12:00pm on the **first day of each year**?

Answer: 0       12      1          1      \*

1. What crontab time interval would execute a command at 1:00am **every** **Sunday**?

Answer: 0       1      \*          \*     0