RedHat Enterprise Linux Essential

Unit 12: **Finding and Processing Files**

Objectives

Upon completion of this unit, you should be able to:

- Use **locate**
- Use **find**
- Use the **Gnome Search tool**

locate

- Queries a pre-built database of paths to files on the system
  - Database must be updated by administrator
  - Full path is searched, not just filename
- May only search directories where the user has read and execute permission

locate –help
head /var/lib/mlocate/mlocate.db
cat /etc/updatedb.conf
cat /etc/cron.daily/mlocate.cron

locate Examples

- **locate foo**
  - Search for files with "foo" in the name or path
- **locate -r '\.foo$‘**
  - Regex search for files ending in ".foo"
- Useful options
  - **-i** performs a case-insensitive search
  - **-n X** lists only the first X matches

find

- **find [directory...] [criteria...]**
- Searches directory trees in real-time
  - Slower but more accurate than **locate**
  - CWD is used if no starting directory given
  - All files are matched if no criteria given
- Can execute commands on found files
- May only search directories where the user has read and execute permission

Basic find Examples

- **find -name snow.png**
  - Search for files named snow.png
- **find -iname snow.png**
  - Case-insensitive search for files named snow.png, Snow.png, SNOW.PNG, etc
- **find -user vmintam -group vmintam**
  - Search for files owned by the user vmintam and the group vmintam

Ex: find / -name ".txt" ; find / -name ".*D.*\.txt"*

find / -name "W.\.txt"*

find and Logical Operators

- Criteria are ANDed together by default.
- Can be OR'd or negated with -**o** and -**not**
- Parentheses can be used to determine logic order, but must be escaped in bash.
  - **find -user vmintam -not -group root**
  - **find -user vmintam -o -user root**
  - **find -not \(-user vmintam -o -user root \)**

find and Permissions

- Can match ownership by name or id
  - **find / -user joe -o -uid 500**
- Can match octal or symbolic permissions
  - **find -perm 755** matches if mode is exactly 755
  - **find -perm +222** matches if *anyone* can write
  - **find -perm -222** matches if *everyone* can write
  - **find -perm -002** matches if other can write

find and Numeric Criteria

- Many **find** criteria take numeric values
- **find -size 1024k**
  - Files with a size of *exactly* 1 megabyte
- **find -size +1024k**
  - Files with a size *over* 1 megabyte
- **find -size -1024k**
  - Files with a size *less than* 1 megabyte

find and Access Times

- **find** can match by inode timestamps
  - **-atime** when file was last read
  - **-mtime** when file data last changed
  - **-ctime** when file data or metadata last changed
- Value given is in days

find -ctime -10

- Files modified less than 10 days ago

```
find / -atime 5;
find / -atime +5;
find / -atime -5;
find / -anewer example.txt        ; try with –cnewer and -newer
```

Executing Commands with find

- Commands can be executed on found files
  - Command must be preceded with **-exec** or **-ok**
    - -**ok** prompts before acting on each file
  - Command must end with **Space**\;
  - Can use **{}** as a filename placeholder
  - **find -size +102400k -ok gzip {} \;**
  - **find -size +100M -exec tar -cvzf /tmp/test.tar.gz {} \;**

find Execution Examples

- **find -name "*.conf" -exec cp {} {}.orig \;**
  - Back up configuration files, adding a .orig extension
- **find /tmp -ctime +3 -user joe -ok rm {} \;**
  - Prompt to remove Joe's tmp files that are over 3 days old
- **find ~ -type f -exec chmod 644 {} \;**
- **find ~ -type d -exec chmod 755 {} \;**

Thank You !