Linux - Bag of Tricks

Introduction

This document has many useful command.

Change Files and Folder Permissions

To change the permissions of files to 655 and subfolders to 755 (which is the common practice for directories to allow execution for navigating into them) within a specified directory and its subdirectories, you can use the `find` command with `chmod`.

Explanation of permissions:

- **655 for files:**
  - Owner: Read (4) + Write (2) = 6
  - Group: Read (4) + Execute (1) = 5
  - Others: Read (4) + Execute (1) = 5
- **755 for directories:**
  - Owner: Read (4) + Write (2) + Execute (1) = 7
  - Group: Read (4) + Execute (1) = 5
  - Others: Read (4) + Execute (1) = 5

Command

```
find /path/to/directory -type f -exec chmod 655 {} +
find /path/to/directory -type d -exec chmod 755 {} +


find /path/to/directory \( -type d -exec chmod 755 {} + \) -o \( -type f -exec chmod 644 {} + \)


chmod -R u+rwX,go+rX,go-w /path/to/directory


find /path/to/directory -type d -print0 | xargs -0 chmod 755
find /path/to/directory -type f -print0   | xargs -0 chmod 644
```

```
find /path/to/directory -print0 \
  \( -type d -exec chmod 755 {} + \) \
  -o \( -type f -exec chmod 644 {} + \)
```

Linux Set Time Examples

You can also simplify format using following syntax:

```
date +%Y%m%d -s "20081128"
```

To set time use the following syntax:

```
date +%T -s "10:13:13"
```

Use the following syntax to set new data and time:

```
date --set="STRING"
```

For example, set new data to 2 Oct 2006 18:00:00, type the following command as root user:

```
date -s "2 OCT 2006 18:00:00"
```

OR

```
date --set="2 OCT 2006 18:00:00"
```

Rclone Copy Examples

Click here for the page HERE

Rsync Copy Examples

This is to move files from one server to another

Ending the folder WITHOUT a “/” slash means copy that folder everything in that folder

Ending the folder WITH a “/” slash means copy everything within that folder

Example for “remote to local” location

```
rsync -chavzP --stats --progress -e ssh user@remote_host:/remote_folder/dir1/ /local_folder/dir1/
```

Example for “local to remote” location

```
rsync -chavzP --stats --progress -e ssh /local_folder/dir1/ user@remote_host:/remote_folder/dir1/
```

Rsync Auto Login while sending

Example to add a Rsync key on the remote server

On the local server simply login as a given user ex: ROOT or USER

```
ssh-keygen -t rsa
```

If it already exists simply hit "n"

```
Generating public/private rsa key pair.
Enter file in which to save the key (/root/.ssh/id_rsa):
/root/.ssh/id_rsa already exists.
Overwrite (y/n)?
```

If not then simply hit enter through all options

Example: of using ROOT

```
Generating public/private rsa key pair.
Enter file in which to save the key (/root/.ssh/id_rsa):
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /root/.ssh/id_rsa
Your public key has been saved in /root/.ssh/id_rsa.pub
The key fingerprint is:
SHA256:JoMN/cxvsqZWBHws4eyrU5Q0F0qRe//44qdrrjiQmbU root@client01
The key's randomart image is:
+---[RSA 3072]----+
|     .+=..       |
|     =B.+        |
|    ..=O         |
|     ==+o        |
|    = E=...      |
|     o... oo     |
|    ..o..++ o    |
|    .oo+o==*.    |
+----[SHA256]-----+
You have mail in /var/spool/mail/root
```

Run the following to add the key to the remote server, you can also use IP instead of host name

```
ssh-copy-id -i ~/.ssh/id_rsa.pub remuser@server01
```

Example of using a USER you will have to enter yes and the USER password

```
/usr/bin/ssh-copy-id: INFO: Source of key(s) to be installed: "/root/.ssh/id_rsa.pub"
The authenticity of host 'server02 (192.168.x.x)' can't be established.
ED25519 key fingerprint is SHA256:oZnvrgY+2Xpd2/huaffvzLMBAgI52AMPUmq/LPLIXbE.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
/usr/bin/ssh-copy-id: INFO: attempting to log in with the new key(s), to filter out any that are already installed
/usr/bin/ssh-copy-id: INFO: 1 key(s) remain to be installed -- if you are prompted now it is to install the new keys
remuser@server02's password:
tput: No value for $TERM and no -T specified
tput: No value for $TERM and no -T specified
tput: No value for $TERM and no -T specified
tput: No value for $TERM and no -T specified
tput: No value for $TERM and no -T specified
tput: No value for $TERM and no -T specified
tput: No value for $TERM and no -T specified
Number of key(s) added: 1
Now try logging into the machine, with:   "ssh 'remuser@server02'"
and check to make sure that only the key(s) you wanted were added.
```

Optional: If the command cannot be run above you can copy the key to the remote server manually into the “authorized_keys” file

```
cd
cd .ssh
vi authrized_keys
```

Optional: Change the permissions on the local server

```
chmod 600 ~/.ssh/*
chmod 711 ~/.ssh
chmod 711 ~
```

Synology Rsync

```
rsync -aXHmS --syno-acl /volum1/[xxx] /volume2/[xxx]
```

-a, --archive archive mode; equals -rlptgoD (no -H,-A,-X)
-p, --perms preserve permissions

-X, --xattrs preserve extended attributes
-o, --owner preserve owner (super-user only)
-g, --group preserve group
--syno-acl copy Synology ACL data

I use the following options myself:
rsync -avhxWog --stats --backup --suffix $OLDSUFFIX --exclude-from=$RSYEXCL --syno-pseudo-root

No idea why I list options "og" since they're implied by -a, but it works...

Regards, Arild
PS: "rsync --help" lists all available options for rsync

Find and Replace String with `sed`

There are several versions of `sed`, with some functional differences between them. macOS uses the BSD version, while most Linux distributions come with GNU `sed` pre-installed by default. We'll use the GNU version.

The general form of searching and replacing text using `sed` takes the following form:

```
sed -i 's/SEARCH_REGEX/REPLACEMENT/g' INPUTFILE
```

Cop

- `-i` - By default, `sed` writes its output to the standard output. This option tells `sed` to edit files in place. If an extension is supplied (ex -i.bak), a backup of the original file is created.
- `s` - The substitute command, probably the most used command in sed.
- `/ / /` - Delimiter character. It can be any character but usually the slash (`/`) character is used.
- `SEARCH_REGEX` - Normal string or a regular expression to search for.
- `REPLACEMENT` - The replacement string.
- `g` - Global replacement flag. By default, `sed` reads the file line by line and changes only the first occurrence of the `SEARCH_REGEX` on a line. When the replacement flag is provided, all occurrences are replaced.
- `INPUTFILE` - The name of the file on which you want to run the command.

Find and Replace String with `sed` within `vi`

This is to search and replace a file globally withing vi

```
:%s/search_string/replacement_string/g
```

Kill Users in Linux

This is to be used when trying to kill users using the connection, replace the ? with the number of the session.

```
pkill -KILL -t pts/?
```

Continued in Linux - Bag of Tricks (Part 2): Certificates, Databases, Disks & Boot.

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