

LINUX OS

PHP Team

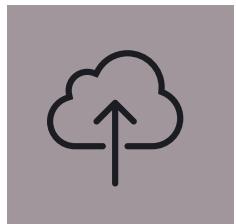
NguyenVQ



Jun 2017

www.asiantech.vn

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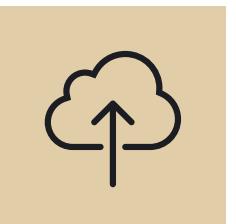
OVERVIEW LINUX OS



THE COMMAND LINE / SSH



USER & GROUP



FILE SYSTEM



INSTALLING SOFTWARE



ubuntu

/ Overview Linux

Linux is a Unix-like computer operating system assembled under the model of free and open-source software development and distribution. The defining component of Linux is the Linux kernel, an operating system kernel first released on September 17, 1991 by **Linus Torvalds**. The Free Software Foundation uses the name GNU/Linux to describe the operating system, which has led to some controversy.

/ User & Group user



CREATE USER



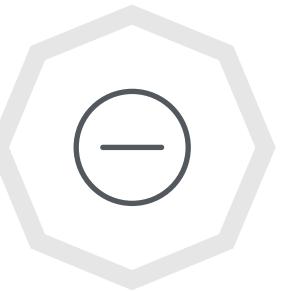
CREATE GROUP



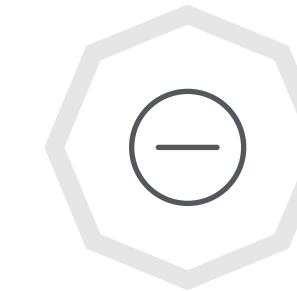
CHANGE PASSWORD



ADD USER INTO GROUP



DELETE USER



DELETE GROUP

/ User

1. CREATE NEW USER

```
$ sudo useradd -m -c 'Nguyen VQ' nguyenvq
```

List options:

- -c: Add descriptions for user
- -d <homedir>: Define home folder for user
- -m: Make home folder for user
- -s shell: Define default shell for user

2. SET PASSWORD FOR USER

```
$ sudo password nguyenvq
```

3. DELETE USER

```
$ sudo userdel nguyenvq
```

/ GROUp user

1. CREATE NEW GROUP

```
$ sudo groupadd phpteam
```

2. ADD USER INTO A GROUP

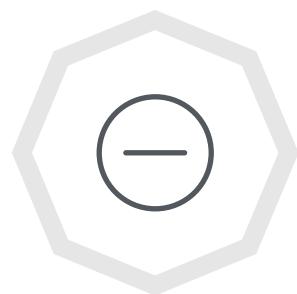
```
$ sudo useradd -m -c 'Nguyen Vo Q.' -G AT, phpteam nguyenvq
```

```
$ sudo usermod -a -G AT, phpteam nguyenvq
```

3. DELETE USER

```
$ sudo groupdel phpteam
```

/ *Installing software*



**SYNAPTIC PACKAGE MANAGER,
UBUNTU SOFTWARE CENTER**



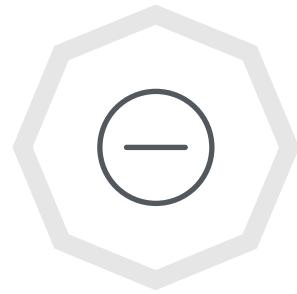
USING TASKSEL



USING APT



USING APTITUDE



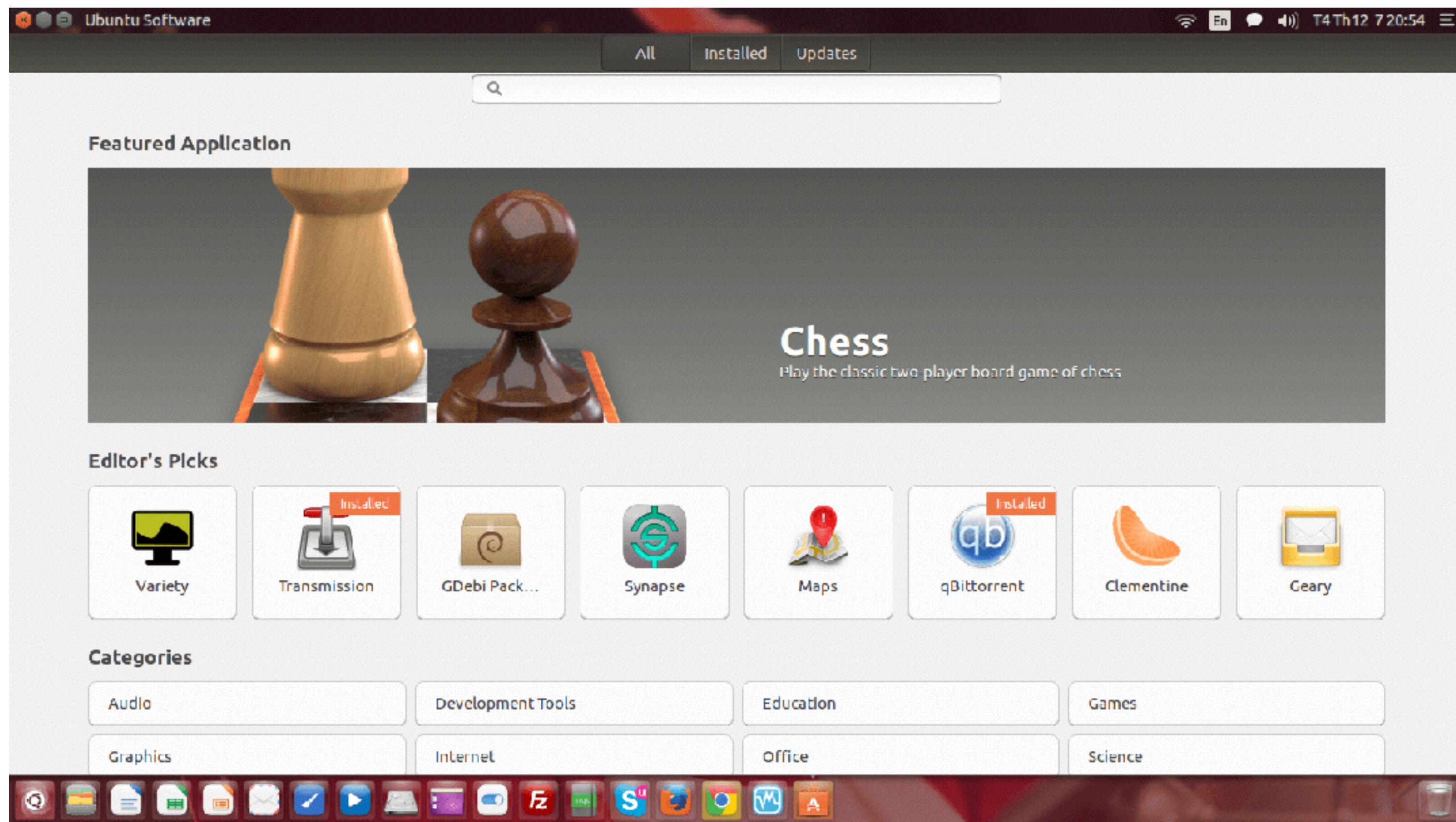
USING DPKG



USING SNAP

/ INstalling software

1. SYNAPTIC PACKAGE MANAGER, UBUNTU SOFTWARE CENTER



2017

/ INStalling software

2. WHAT IS: UBUNTU REPOSITORIES?

Many of these programs are stored in software archives commonly referred to as repositories. Repositories make it easy to install new software, while also providing a high level of security, since the software is thoroughly tested and built specifically for each version of Ubuntu.

The four main repositories are:

- 1. Main** - Canonical-supported free and open-source software.
- 2. Universe** - Community-maintained free and open-source software.
- 3. Restricted** - Proprietary drivers for devices.
- 4. Multiverse** - Software restricted by copyright or legal issues.

/ INStalling software

3. INSTALL SOFTWARE USING COMMAND TOOL

3.1. Install new software using apt command

```
$ sudo apt-get install <software_name>
// Or
$ sudo apt install <software_name>
// Example
$ sudo apt install nginx
```

3.2. Uninstall software using apt command

```
$ sudo apt-get remove <software_name>
// Or
$ sudo apt remove <software_name>
// Example
$ sudo apt remove nginx
```

3.3. Update software using apt command

```
$ sudo apt-get update & sudo apt-get upgrade
// Or
$ sudo apt update & sudo apt upgrade
```

3.4. Install new snap package

```
$ sudo snap install <software_name>
// Example
$ sudo snap install nginx
```

3.5. Find snap package

```
$ sudo snap find <software_name>
// Example
$ sudo snap find nginx
```

3.6. Remove snap package

```
$ sudo snap remove <software_name>
```

3.7. Update snap package

```
$ sudo snap refresh <software_name>
```

3.8. List snap packages

```
$ sudo snap list
```

/ INStalling software

3. INSTALL SOFTWARE USING COMMAND TOOL

3.9. Install new software using dpkg

```
$ sudo dpkg -i <package_name>.deb  
// Example  
$ sudo dpkg -i skype.deb
```

3.10. Remove software using dpkg

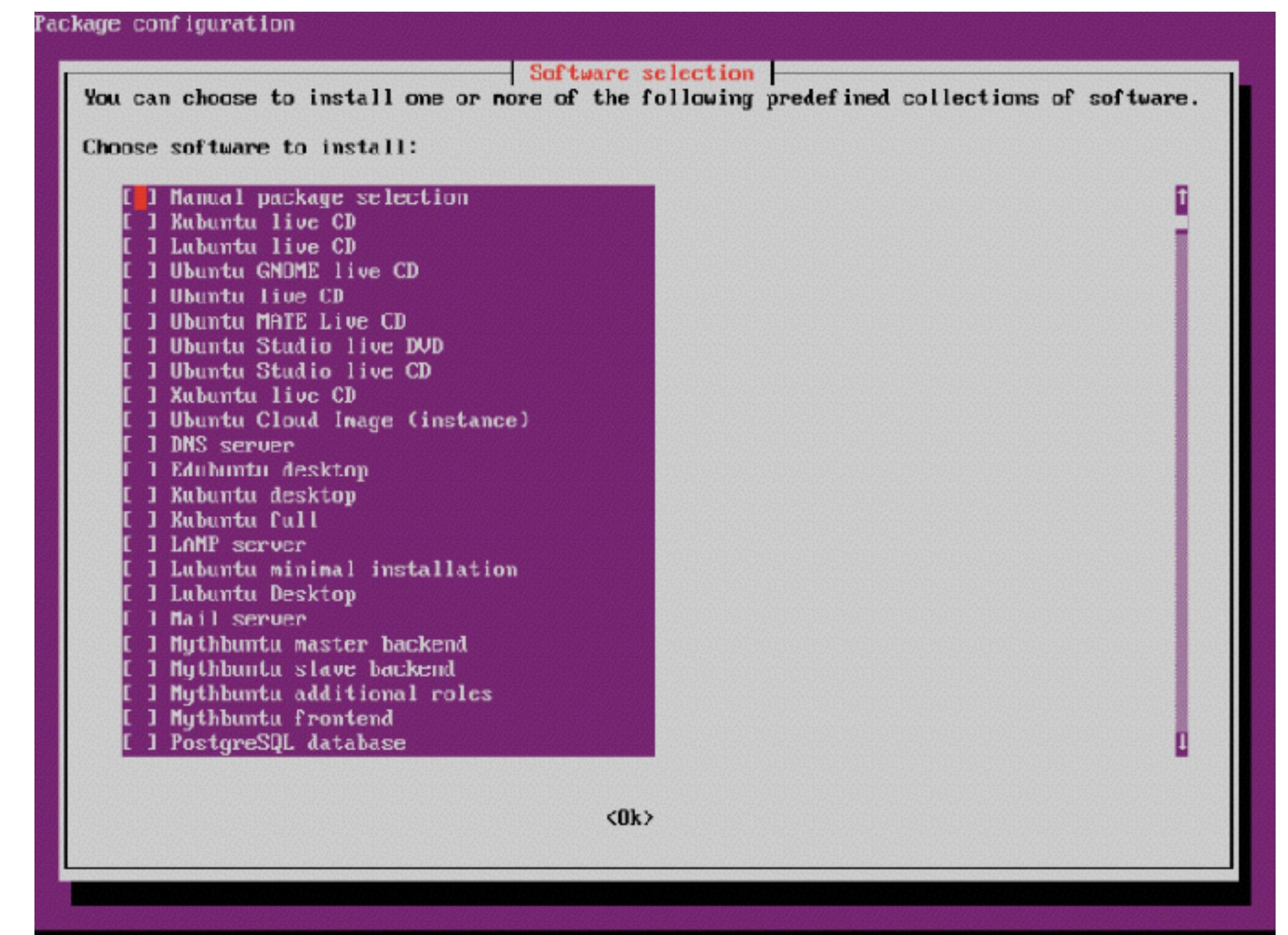
```
$ sudo dpkg -r <package_name>.deb  
// Example  
$ sudo dpkg -r skype.deb
```

3.11. List all package installed

```
$ sudo dpkg -l
```

3.12. Install software using tasksel

```
$ sudo tasksel
```



/ INStalling software

3. INSTALL SOFTWARE USING COMMAND TOOL

3.9. Install new software using aptitude

```
$ sudo aptitude
```

The screenshot shows the terminal window with the command \$ sudo aptitude entered. Below it is the output of the aptitude command, which displays various package statistics:

```
Actions Undo Package Resolver Search Options Views Help
C-t: Menu ?: Help q: Quit u: Update g: Preview/Download/Install/Remove Pkg
aptitude 0.7.4
--- Security Updates (30)
--- Upgradable Packages (61)
--- Installed Packages (375)
--- Not Installed Packages (82966)
--- Virtual Packages (10956)
--- Tasks (52427)

Security updates for these packages are available from security.ubuntu.com.
This group contains 30 packages.
```

1. WHAT IS THE SSH

- SSH is a cryptographic network protocol for operating network services security
- The best known example application is for remote login to computer systems by users.
- Common applications include remote command-line login and remote command execution

2. WHAT IS THE SSH AUTHENTICATION

- Used public-private and password to authenticate
- Keys are stored in .ssh directory
- If public key is stored in ~/.ssh/authorized_keys then no need password
- Default keys: id_rsa and id_rsa.pub

3. HOW TO CONNECT TO SERVER USING SSH COMMAND

```
$ ssh -i <key.pem> <username>@<ip>
```

```
$ ssh -i pub.pem ec2-user@10.10.10.13
```

4. HOW TO MANAGEMENT CONFIG SSH

```
$ sudo vi ~/.ssh/config
```

```
Host intern-2017
```

```
HostName 192.168.10.10
```

```
User root
```

```
Host ec2
```

```
HostName 10.10.10.13
```

```
IdentityFile ~/.ssh/pub.pem
```

```
User ec2-user
```

4. HOW TO TRANSFER FILE/FOLDER USING SSH

```
// Download
$ scp <username>@<ip>:<path_file> <file_name>
// Download folder
$ scp -r -i <key file> <username>@<ip>:<path_file> <file_name>
// Upload file
$ scp <local_file_name> <username>@<ip>:<path_file>
// Upload folder
$ scp -r -i <key file> <local_file_name> <username>@<ip>:<path_file>
```

/ file systems

1. LIST FILES IN DIRECTORY

```
→ laravel ls -l
total 296
drwxr-xr-x  7 nguyenvq staff   238 May 11 19:42 app
-rw-rxr-x  1 nguyenvq staff  1646 May 11 19:42 artisan
drwxr-xr-x  5 nguyenvq staff   170 May 11 19:42 bootstrap
-rw-r--r--  1 nguyenvq staff  1337 Jun  2 10:23 composer.json
-rw-r--r--  1 nguyenvq staff 122025 Jun  2 10:14 composer.lock
drwxr-xr-x 13 nguyenvq staff   442 May 11 19:42 config
drwxr-xr-x  6 nguyenvq staff   204 May 11 19:42 database
drwxr-xr-x  6 nguyenvq staff   204 May 11 19:42 tests
drwxr-xr-x 32 nguyenvq staff  1088 Jun  2 10:14 vendor
```

2. FILE TYPES

What is: drwxr-xr-x ?

The first character define type of files on linux:

- Regular file: (-)
- Directory files: (d)
- Block file: (b)
- Character device file: (c)
- Named pipe file or just a pipe file: (p)
- Symbolic link file: (l)
- Socket file: (s)

3. FILE PERMISSIONS

Permission Groups

Each file and directory has three user based permission groups:

1. **owner** - The Owner permissions apply only the owner of the file or directory, they will not impact the actions of other users.
2. **group** - The Group permissions apply only to the group that has been assigned to the file or directory, they will not effect the actions of other users.
3. **all users** - The All Users permissions apply to all other users on the system, this is the permission group that you want to watch the most.

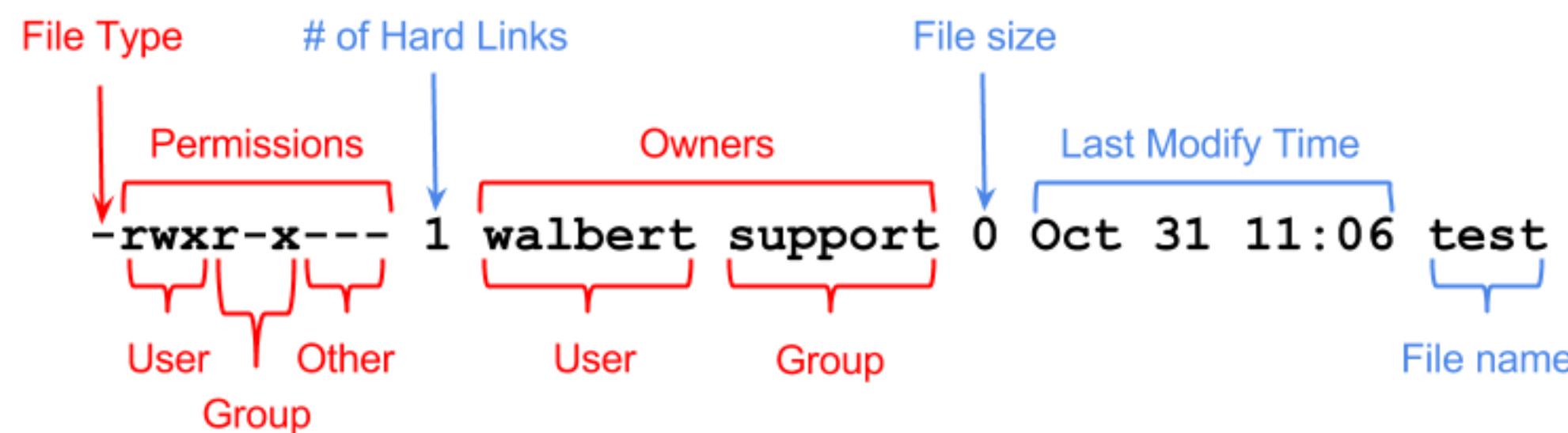
Permission Types

Each file or directory has three basic permission types:

1. **read** - The Read permission refers to a user's capability to read the contents of the file.
2. **write** - The Write permissions refer to a user's capability to write or modify a file or directory.
3. **execute** - The Execute permission affects a user's capability to execute a file or view the contents of a directory.

/ file systems

3. FILE PERMISSIONS



```
// Update permission for file/folder
$ sudo chmod -R <permission> <file/folder>
// Example
$ sudo chmod -R 777 upload/

// Update owner for file/folder
$ sudo chown -R <username>:<groupname> <file/folder>
// Example
$ sudo chown -R nguyenvq:phpteam phpteam/
```

Octal	Decimal	Permission	Representation
000	0 (0+0+0)	No Permission	---
001	1 (0+0+1)	Execute	--x
010	2 (0+2+0)	Write	-w-
011	3 (0+2+1)	Write + Execute	-wx
100	4 (4+0+0)	Read	r--
101	5 (4+0+1)	Read + Execute	r-x
110	6 (4+2+0)	Read + Write	rw-
111	7 (4+2+1)	Read + Write + Execute	rwx

/ summary

- 1. BASIC KNOWLEDGE LINUX OPERATING SYSTEM**
- 2. HOW TO CREATE USER, GROUP USER IN LINUX**
- 3. HOW TO INSTALL NEW SOFTWARE IN UBUNTU**
- 4. HOW TO CONNECT TO SERVER USING SSH METHOD**
- 5. WORKING WITH FILE, FOLDER. SET PERMISSION TO FILE, FOLDER IN UBUNTU**

QUESTION TIME

THANK YOU
2017

THANK YOU



DROP PICTURE HERE