Special Workshop in IT

Week 1: Installing Frappe

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Today's Objectives

1) Installation of Prerequisites
    a) VirtualBox
    b) Ubuntu 20.04 LTS
2) Frappe Framework Installation
3) Starting and testing the Bench server environment

Installation of Prerequisites

VirtualBox

- Free and open source virtualization software
- Allows creation and management of "guest" virtual machines running Windows, Linux and etc.
    - Enables users and administrators to easily run multiple guest operating systems on a single host
- "Guest Additions" package of device drivers and system applications is available, which typically improves performance, especially that of graphics

Ubuntu

- Free (mostly) and open source operating system on Linux
- Generally used in an enterprise server, desktop, cloud, and IoT
- As of October 2020, the most recent long-term support (LTS) version is 20.04, which is supported until 2025.

Setting up a VM

1. Download and install VirtualBox
2. Download Ubuntu ISO
3. Install Ubuntu using VirtualBox

Step 3: Install Ubuntu using VirtualBox

1. Select Minimal install
2. After Installation has completed, select Device > Insert Guest Additions CD image..., then click run
3. This will open a terminal
4. To install a required kernel modules, run

   `sudo apt install build-essential dkms linux-headers-generic`

   `sudo rcvboxadd setup`
5. Restart Ubuntu
6. VM's screen resolution can be changed, including drag and drop setting

Prerequisites

```
Python 3.6+
Node.js 12
Redis 5                                 (caching and realtime updates)
MariaDB 10.3.x / Postgres 9.5.x         (to run database driven apps)
yarn 1.12+                              (js dependency manager)
pip 20+                                 (py dependency manager)
wkhtmltopdf (version 0.12.5 with patched qt)  (for pdf generation)
cron                                    (bench's scheduled jobs: automated certificate renewal, scheduled
backups)
NGINX                                   (proxying multitenant sites in production)
```

Steps

1. Update System

   `sudo apt update && sudo apt upgrade`

   `sudo apt -y install software-properties-common`
2. Install git, python, and redis

   `sudo apt install git python-dev redis-server`
3. Install MariaDB
4. Install Node.js
5. Install other utilities

Step 3: Install MariaDB

3.1 Import MariaDB gpg key

`sudo apt-key adv --fetch-keys 'https://mariadb.org/mariadb_release_signing_key.asc'`

- This will add repository key to the system

3.2 Add MariaDB APT repository

`sudo add-apt-repository 'deb [arch=amd64] http://mariadb.mirror.globo.tech/repo/10.5/ubuntu focal main'`

Step 3: Install MariaDB

3.3 Install MariaDB server on Ubuntu

`sudo apt update`

`sudo apt install mariadb-server mariadb-client`

- Hit the ‘y’ key to accept installation of MariaDB 10.5 on Ubuntu

3.4 Secure MariaDB server

`sudo mysql_secure_installation`

- Enter root password
- Can change password of MariaDB to a new one (123) - need to remember!
- Continue to hit the ‘y’ key

Step 3: Install MariaDB

3.5 Check if database service is started

`systemctl status mysql`

Press Enter to show terminal console

3.6 Try login to MariaDB

`sudo mysql -u root -p`

3.7 On MariaDB shell, check version by entering

`SELECT VERSION();`

Press Ctrl-C to exit MariaDB shell

3.8 Install MySQL DB development files

`sudo apt install libmysqlclient-dev`

Step 3: Install MariaDB

3.9 In order to enable MariaDB to work with Frappe development framework

`sudo nano /etc/mysql/my.cnf`

Then add this configuration

```
[mysqld]
character-set-client-handshake = FALSE
character-set-server = utf8mb4
collation-server = utf8mb4_unicode_ci

[mysql]
default-character-set = utf8mb4
```

3.10 Hit Ctrl-X followed by Y and Enter, and then Restart the MySQL service

`service mysql restart`

Step 4: Install Node.js

4.1 Install curl

`sudo apt install curl`

4.2 Install nvm (Node Version Manager)

`curl -o- https://raw.githubusercontent.com/creationix/nvm/v0.33.11/install.sh | bash`

4.3 Open another terminal, verify nvm installation

`command -v nvm`

4.4 install Node version 12

`nvm install 12`

Step 4: Install Node.js

4.5 Verify the node installation

`node -v`

4.6 Install yarn (JS package manager) using npm (JS package manager)

- Yarn caches every package it has downloaded, allow faster installs
- Yarn guarantees that any installation that works on one system will work on another system

`npm install -g yarn`

Step 5: Install other utilities

`sudo apt install xvfb libfontconfig wkhtmltopdf`

Bench Installation

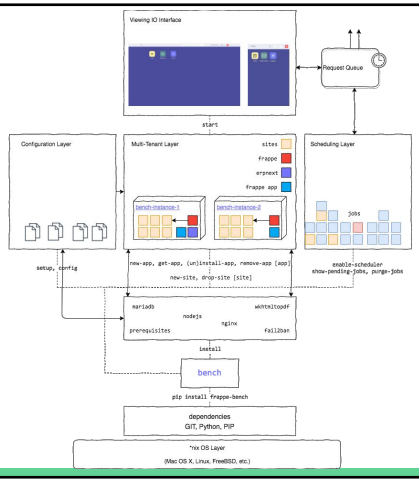
Steps

1. Bench can be installed via pip3, so need to install pip3 first

   `sudo apt install python3-pip`
2. Install bench

   `sudo pip3 install frappe-bench`

Overview



Frappe Framework Installation (Manual)

Frappe-Bench

- Bench is the command line tool to manage Frappe apps and sites.
- To create a project folder which contain apps and sites, run

  `bench init frappe-bench`

  - This will create a directory named “frappe-bench” in current working directory
  - Then, it creates a python virtual environment directory (env)
  - Fetch and install “frappe” app as a python package
  - Install node modules of “frappe”
  - Build static assets.

Frappe-Bench

```
.
├── Procfile
├── apps
│   └── frappe
├── config
│   ├── pids
│   ├── redis_cache.conf
│   ├── redis_queue.conf
│   └── redis_socketio.conf
├── env
│   ├── bin
│   ├── include
│   ├── lib
│   └── share
├── logs
│   ├── backup.log
│   └── bench.log
└── sites
    ├── apps.txt
    ├── assets
    └── common_site_config.json
```

- **env**: Python virtual environment
- **config**: Config files for Redis and Nginx
- **logs**: Log files for every process (web, worker)
- **sites:** Sites directory
  - **assets:** Static assets that served via Nginx in production
  - **apps.txt:** List of installed frappe apps
  - **common*site*config.json:** Site config that is available in all sites
- **apps:** Apps directory
  - **frappe:** The Frappe app directory
- **Procfile:** List of processes that run in development

Start the Bench Server

- To start the Frappe web server, go to frappe-bench directory

  `cd frappe-bench`

  `bench start`

  - This will create several processes:
    - Python web server based on Gunicorn
    - Redis servers for caching, job queuing and socketio pub-sub
    - Background workers
    - Node server for socketio
    - Node server for compiling JS/CSS files

Bench Server

- The web server will start listening on the port 8000
  - However, we don’t have any sites yet
  - Next step is to create an app and a site that will have this app installed (Next week!)
- When bench server is running, do not close the terminal!