Laporan Tugas Akhir Sistem Terdistribusi

M Raihan Kanjul Adhim 1203210138

M Farhan Siregar 1203210108

1. Buat lxc baru dan konfigurasikan IP masing-masing lxc

```
root@DESKTOP-6JQ34U7:~# lxc-ls -f
                         AUTOSTART GROUPS IPV4
                STATE
NAME
                                                        IPV6 UNPRIVILEGED
LXC_DB_SERVER
LXC_PHP5_1
                RUNNING
                                            10.0.3.89
                                                              false
                RUNNING 0
                                            10.0.3.102 -
LXC_PHP5_
                RUNNING 0
                                            10.0.3.137 -
                RUNNING 0
                                            10.0.3.200 -
                RUNNING 0
                                            10.0.3.187
                RUNNING
XC_PHP7_6
                RUNNING
                                            10.0.3.70
```

- sudo lxc-create -t download -n LXC_PHP7_1 -- -d ubuntu -r focal -a amd64
- O sudo lxc-create -t download -n LXC PHP7 2 -- -d ubuntu -r focal -a amd64
- O sudo lxc-create -t download -n LXC PHP7 3 -- -d ubuntu -r focal -a amd64
- O sudo lxc-create -t download -n LXC PHP7 4 -- -d ubuntu -r focal -a amd64
- O sudo lxc-create -t download -n LXC PHP7 5 -- -d ubuntu -r focal -a amd64
- O sudo lxc-create -t download -n LXC PHP7 6 -- -d ubuntu -r focal -a amd64
- O sudo lxc-create -t download -n LXC PHP5 1 -- -d debian -r buster -a amd64
- O sudo lxc-create -t download -n LXC PHP5 2 -- -d debian -r buster -a amd64
- O sudo lxc-create -t download -n LXC DB SERVER -- -d debian -r buster -a amd64

2. Lakukan Langkah ini pada setiap LXC

- O sudo lxc-attach -n LXC PHP7 1 -- apt update
- sudo lxc-attach -n LXC_PHP7_1 -- apt install -y php7.4 php7.4-fpm openssh-server
- O sudo lxc-attach -n LXC PHP7 2 -- apt update
- O sudo lxc-attach -n LXC PHP7 2 -- apt install -y php7.4 php7.4-fpm openssh-server
- O sudo lxc-attach -n LXC PHP7 3 -- apt update
- sudo lxc-attach -n LXC PHP7 3 -- apt install -y php7.4 php7.4-fpm openssh-server

- O sudo lxc-attach -n LXC PHP7 4 -- apt update
- sudo lxc-attach -n LXC_PHP7_4 -- apt install -y php7.4 php7.4-fpm openssh-server
- O sudo lxc-attach -n LXC PHP7 5 -- apt update
- O sudo lxc-attach -n LXC PHP7 5 -- apt install -v php7.4 php7.4-fpm openssh-server
- O sudo lxc-attach -n LXC PHP7 6 -- apt update
- sudo lxc-attach -n LXC PHP7 6 -- apt install -y php7.4 php7.4-fpm openssh-server
- sudo lxc-attach -n LXC_PHP5_1 -- apt-get install -y software-properties-common apttransport-https lsb-release ca-certificates
- sudo lxc-attach -n LXC_PHP5_1 -- wget -O /etc/apt/trusted.gpg.d/php.gpg https://packages.sury.org/php/apt.gpg
- sudo lxc-attach -n LXC_PHP5_1 -- sh -c 'echo "deb https://packages.sury.org/php/ \$(lsb release -sc) main" > /etc/apt/sources.list.d/php.list'
- O sudo lxc-attach -n LXC_PHP5_1 -- apt update
- sudo lxc-attach -n LXC_PHP5_2 -- apt-get install -y software-properties-common apttransport-https lsb-release ca-certificates
- sudo lxc-attach -n LXC_PHP5_2 -- wget -O /etc/apt/trusted.gpg.d/php.gpg https://packages.sury.org/php/apt.gpg
- sudo lxc-attach -n LXC_PHP5_2 -- sh -c 'echo "deb https://packages.sury.org/php/ \$(lsb_release -sc) main" > /etc/apt/sources.list.d/php.list'
- sudo lxc-attach -n LXC_PHP5_2 -- apt update
- sudo lxc-attach -n LXC PHP5 1 -- apt install php5.6 php5.6-fpm php5.6-cli php5.6-json
- sudo lxc-attach -n LXC PHP5 2 -- apt install php5.6 php5.6-fpm php5.6-cli php5.6-ison
- sudo lxc-attach -n LXC DB SERVER -- apt update
- O sudo lxc-attach -n LXC DB SERVER -- apt install mariadb-server
- sudo lxc-attach -n LXC DB SERVER -- systemctl start mariadb
- sudo lxc-attach -n LXC DB SERVER -- mysql secure installation
- sudo apt install openssh-server python
- O apt install nano
- O cd /etc/ssh
- O nano sshd config

- O tambahkan
- O PermitRootLogin yes
- Sudo service sshd restart
- O passwd
- O set passwd bebas
- O exit
- O ssh root@ip lxc
- 3. Dan kemudian pergi ke 'nano host' untuk mengklasifikasikan setiap lxc seperti skema di bawah

```
root@DESKTOP-6JQ34U7:~/ansible/TUBES# cat host
[yii2_containers]
LXC_PHP7_1 ansible_host=10.0.3.222 ansible_ssh_user=root ansible_become_pass=Hans
LXC_PHP7_2 ansible_host=10.0.3.224 ansible_ssh_user=root ansible_become_pass=Hans
LXC_PHP7_4 ansible_host=10.0.3.187 ansible_ssh_user=root ansible_become_pass=Hans
LXC_PHP7_5 ansible_host=10.0.3.70 ansible_ssh_user=root ansible_become_pass=Hans
LXC_PHP7_6 ansible_host=10.0.3.70 ansible_ssh_user=root ansible_become_pass=Hans
LXC_PHP7_2 ansible_host=10.0.3.224 ansible_ssh_user=root ansible_become_pass=Hans
LXC_PHP7_3 ansible_host=10.0.3.280 ansible_ssh_user=root ansible_become_pass=Hans
LXC_PHP7_5 ansible_host=10.0.3.281 ansible_ssh_user=root ansible_become_pass=Hans
LXC_PHP7_5 ansible_host=10.0.3.282 ansible_ssh_user=root ansible_become_pass=Hans
LXC_PHP7_1 ansible_host=10.0.3.224 ansible_ssh_user=root ansible_become_pass=Hans
LXC_PHP7_2 ansible_host=10.0.3.284 ansible_ssh_user=root ansible_become_pass=Hans
LXC_PHP7_3 ansible_host=10.0.3.290 ansible_ssh_user=root ansible_become_pass=Hans
LXC_PHP7_5 ansible_host=10.0.3.293 ansible_ssh_user=root ansible_become_pass=Hans
LXC_PHP7_6 ansible_host=10.0.3.187 ansible_ssh_user=root ansible_become_pass=Hans
LXC_PHP7_6 ansible_host=10.0.3.70 ansible_ssh_user=root ansible_become_pass=Hans
LXC_PHP7_6 ansible_host=10.0.3.70 ansible_ssh_user=root ansible_become_pass=Hans
LXC_PHP5_1 ansible_host=10.0.3.102 ansible_ssh_user=root ansible_become_pass=Hans
LXC_PHP5_2 ansible_host=10.0.3.102 ansible_ssh_user=root ansible_become_pass=Hans
LXC_PHP5_1 ansible_host=10.0.3.102 ansible_ssh_user=root ansible_become_pass=Hans
LXC_PHP5_2 ansible_host=10.0.3.102 ansible_ssh_user=root ansible_become_pass=Hans
LXC_PHP5_2 ansible_host=10.0.3.102 ansible_ssh_user=root ansible_become_pass=Hans
LXC_PHP5_1 ansible_host=10.0.3.102 ansible_ssh_user=root ansible_become_pass=Hans
LXC_PHP5_2 ansible_host=10.0.3.103 ansible_ssh_user=root ansible_become_pass=Hans
LXC_PHP5_1 ansible_host=10.0.3.103 ansible_ssh_user=root ansible_become_pass=Hans
```

- O cd ~/tubes/inventories
- O nano hosts

4. Lalu membuat file

- nano install-ci.yml //for code igniter
- nano install-laravel.yml //for laravel
- nano install-wp.yml //for wordpress
- nano install-yii.yml //for yii2.0
- nano install-mariadb.yml //for phpMyAdmin

root@MSI:~/tubes/inventories# ls hosts install-ci.yml install-laravel.yml install-mariadb.yml install-wp.yml install-yii.yml

```
GNU nano 6.2

- hosts : ci
vars:
    git_url: 'http://github.com/aldonesia/sas-ci'
    destdir: '/var/www/html/ci'
    domain : 'lxc_php5.dev'
roles:
    - app
```

```
GNU nano 6.2

---
- hosts: Laravel
vars:
    username: 'admin'
    password: '1203210131'
    domain: '10.0.3.187'

roles:
    - php
    - lv
```

```
GNU nano 6.2

- hosts: database
vars:
    username: 'admin'
    password: '1203210131'
    domain: '10.0.3.59'
roles:
    - db
    - pma
```

```
GNU nano 6.2

---
- hosts: Wordpress
vars:
    username: 'admin'
    password: '1203210131'
    domain: '10.0.3.204'
roles:
    - wp
```

```
GNU nano 6.2

---
- hosts: yii2
vars:
    username: 'admin'
    password: '1203210131'
    domain: 'lxc_php7_10.dev'
roles:
    - yii
```

- 5. Setelah selesai lakukan seperti ini
 - O cd /roles/ci/tasks
 - O nano main.yml

```
GUU nano 6.2

become senthed; su

apt: name:{{ item }} state=latest update_cache=true

up
```

- O cd ../templates
- O nano app.conf

```
GNU nano 6.2
server {
  listen 80;
  server_name {{servername}};
  root {{ destdir }};
  index index.php;
  location / {
    try_files $uri $uri/ /index.php?$query_string;
  }
  location ~ \.php$ {
    fastcgi_pass unix:/run/php/php5.6-fpm.sock;
    fastcgi_index index.php;
    fast_param SCRIPT_FILENAME {{ desstdir }}$fastcgi_script_name;
    include fastcgi_params;
  }
}
```

- O cd ../handlers
- O nano main.yml

```
GNU nano 6.2

---
- name: restart nginx
become: yes
become_user: root
become_method: su
action: service name=nginx state=restarted

- name: restart php
become: yes
become_user: root
become_user: root
become_method: su
action: service name=php5.6-fpm state=restarted
```

- **O** cd ../../
- O cd php/tasks
- O nano main.yml

- O cd ../handlers
- O nano main.yml

```
GNU nano 6.2

---
- name: restart php
become: yes
become_user: root
become_method: su
action: service name=php7.4-fpm state=restarted
```

- **O** cd ../../
- O cd lv/tasks

O nano main.yml

```
CMU nano 6.2

- name: delete apt chache
become: yes
become: user: root
become.monthad: and install Composer
shell: curl -ss https://getcomposer.org/installer | php
args:
chdir: /usr/src/
creates: /usr/local/bin/composer
mann: false
become: yes

- name: Add Composer to global path
compy:
dest: /usr/local/bin/composer
group: root
mode: 'e055'
owner: root
secome: yes

- name: Ansible delete file create_project
file:
    path: /var/www/html/landing
    state: absent

- name: Composer create-project
shell: /usr/local/bin/composer create-project laravel/laravel /var/www/html/landing --prefer-dist --no-interaction

- name: Composer create-project
shell: /usr/local/bin/composer create-project laravel/laravel /var/www/html/landing --prefer-dist --no-interaction

- name: Composer create-project
shell: /usr/local/bin/composer create-project laravel/laravel /var/www/html/landing --prefer-dist --no-interaction

- name: Composer create-project
shell: /usr/local/bin/composer create-project laravel/laravel /var/www/html/landing --prefer-dist --no-interaction

- name: Composer create-project
shell: /usr/local/bin/composer create-project laravel/laravel /var/www/html/landing --prefer-dist --no-interaction

- name: Composer create-project
shell: /usr/local/bin/composer create-project laravel/laravel /var/www/html/landing --prefer-dist --no-interaction
```

```
- name: composer
shell: cd /var/www/html/landing; /usr/local/bin/composer install --no-interaction

- name: key
shell: /usr/bin/php7.4 /var/www/html/landing/artisan key:generate

- name: chmod
become: tes
become_user: root
become_user: root
become_user: root
become_user: root
become_user: sroot
become_user: root
beco
```

- O cd ../templates
- O nano env.template

```
GNU nano 6.2
APP_NAME=Laravel
APP ENV=local
APP_DEBUG=true
APP_URL=http://vm.local
LOG_CHANNEL=stack
LOG_DEPRECATIONS_CHANNEL=null
DB_CONNECTION=mysql
DB_HOST=10.0.3.59
DB_PORT=3306
DB_DATABASE=landing
DB_USERNAME=admin
DB_PASSWORD=1203210131
BROADCAST_DRIVER=log
CACHE_DRIVER=file
CACHE_DRIVER=+11e
FILESYSTEM_DRIVER=file
QUEUE_CONNECTION=sync
SESSION_DRIVER=file
SESSION_LIFETIME=120
MEMCACHED_HOST=127.0.0.1
REDIS_HOST=127.0.0.1
REDIS_PASSWORD=null
REDIS_PORT=6379
MAIL_MAILER=smtp
MAIL_HOST=mailhog
MAIL_PORT=1025
MAIL_USERNAME=null
MAIL_PASSWORD=null
MAIL_ENCRYPTION=null
MAIL_FROM_ADDRESS=null
MAIL_FROM_NAME="${APP_NAME}"
 AWS_ACCESS_KEY_ID=
 AWS_SECRET_ACCESS_KEY=
 AWS_DEFAULT_REGION=us-east-1
 AWS_BUCKET=
AWS_USE_PATH_STYLE_ENDPOINT=false
PUSHER_APP_ID=
PUSHER_APP_KEY=
PUSHER_APP_SECRET=
PUSHER_APP_CLUSTER=mt1
MIX_PUSHER_APP_KEY="${PUSHER_APP_KEY}"
```

O nano lv.conf

```
GNU nano 6.2
server {
    listen 80;
    listen [::]:80;
    #log files for debugging
    access_log /var/log/nginx/vhostlaravel-access.log;
    error_log /var/log/nginx/vhostlaravel-error.log;
    #webroot directory for laravel project
    root /var/www/html/landing/public;
    index index.php index.html index.htm;
    server_name {{servername}};
    location / {
        try_files $uri $uri/ /index.php?$query_string;
    }
    location ~ \.php$ {
        try_files $uri = 404;
        fastcgi_psit_path_info ^(.+\.php)(/.+)$;
        fastcgi_pass 127.0.0.1:9001;
        fastcgi_param SCRIPT_FILENAME $document_root$fastcgi_script_name;
        include fastcgi_params;
    }
}
```

MIX_PUSHER_APP_CLUSTER="\${PUSHER_APP_CLUSTER}"

0

cd ../handlers nano main.yml

```
GNU nano 6.2

---
- name: restart php
become: yes
become_user: root
become_method: su
action: service name=php7.4-fpm state=restarted

- name: restart nginx
become: yes
become_user: root
become_method: su
action: service name=nginx state=restarted
```

- **O** cd ../../
- O cd db/tasks
- O nano main.yml

```
GNU nano 6.2
                                                                                      main.
- name: delete apt cache
 become_user: root
 become_method: su
command: rm -vf /var/lib/apt/list/*
- name: install mariadb
  become:
  become_user: root
 become_method: su
apt: name={{ item }} state=latest update_cache=true
 with_items:
- python
  - mariadb-server
  - python-mysqldb
  - python-pymysql
- name: Stop MySQL
  service: name=mysqld state=stopped
- name: set environment variables
 shell: systemctl set-environment MYSQLD_OPTS="--skip-grant-tables"
- name: Start MySQL
service: name=mysqld state=started
```

- O cd ../templates
- O nano my.cnf

cd ../handlers nano main.yml

```
GNU nano 6.2

---
- name: restart mysql
become: yes
become_user: root
become_method: su
action: service name=mysql state=restarted
```

- **o** cd ../../
- O cd pma/tasks
- O nano main.yml

```
main.vml
 name: Add Php Repository
    repo: "deb https://
state: present
filename: php.list
update_cache: true
name: wget repository php
shell: wget -0 /etc/apt/trusted.gpg.d/php.gpg https://packages.sury.org/php/apt.gpg
name: add repository php
shell: echo "deb https://
                                    sury.org/php/ $(lsb_release -sc) main" | tee /etc/apt/source.list.d/php.list
name: wget repository shell: wget https://files.phpmyadmin.net/phpMyAdmin/5.1.1/phpMyAdmin-5.1.1-all-languages.tar.gz
name: tar pypmyadmin
shell: tar -zxvf phpMyAdmin-5.1.1-all-languages.tar.gz
name: move phpadmin shell: mv pypMyAdmin-5.1.1-all-languages /usr/share/phpMyAdmin
name: apt update
shell: apt update
 name: Copy lxc_mariabd.conf
  src=templates/lxc_mariadb.conf
dest=/etc/nginx/sites-available/{{ domain }}
   servername: '{{ domain }}
name: Synlink lxc_mariadb.conf
command: ln -sfn /etc/nginx/sites-avaiblable/{{ domain }} /etc/nginx/sites-enable/{{ domain }}
    notify:
         - restart nginx
- name: Write {{ domain }} to /etc/hosts
    lineinfile:
         dest: /etc/hosts
         regexp: '.*{{ domain }}$'
         line: "127.0.0.1 {{ domain }}"
         state: present
```

cd ../templates

lxc_mariadb.con

```
GNU nano 6.2

server {
    listem 80;
    server_name {{servername}};
    root /usr/share/phpMyAdmin;
    index index.php;
    location / {
        try_files $uri $uri/ @phpmyadmin;
    }
    location @phpmyadmin {
        fastcgi_pars unix:/run/php/php7.2-fpm.sock; #sesuaikan dengan versi PHP

        fastcgi_param SCRIPT_FILENAME /usr/share/phpMyAdmin/index.php;
        include /etc/nginx/fastcgi-params;
        fastcgi_param SCRIPT_NAME /index.php;
}
location ~ \.php$ {
        fastcgi_pars unix:/run/php/php7.2-fpm.sock; #sesuaikan dengan versi php

        fastcgi_index index.php;
        fastcgi_param SCRIPT_FILENAME /usr/share/phpMyAdmin$fastcgi_script_name;
        include fastcgi_params;
}
```

OO cd ../handlersO nano main.yml

```
GNU nano 4.8
                                                        main.yml
- name: stop apache2
  become: yes
  become_user: root
  become_method: su
  action: service name=apache2 state=stopped
- name: restart nginx
  become: yes
 become_user: root
  become_method: su
  action: service name=nginx state=restarted
- name: restart php
  become: yes
  become_user: root
  become_method: su
  action: service name=php7.2-fpm state=restarted
```

cd ../../ cd yii/tasks

O nano main.yml

GNU nano 4.8

name: delete apt chache

```
become: yes
  become_user: root
  become_method: su
  command: rm -vf /var/lib/apt/lists/*
  name: install php
  become: yes
  become_user: root
  become_method: su
  apt: name={{ item }} state=latest update_cache=true
  with_items:
     - curl
     - nginx
     - nginx-extras
     - php7.4
     - php7.4-fpm
     - php7.4-curl
     - php7.4-xml
     - php7.4-gd
     - php7.4-opcache
     - php7.4-mbstring
- php7.4-zip
     - php7.4-json
     - php7.4-cli
                                                                           main.yml
  name: Download and install Composer
shell: curl -sS https://getcomposer.org/installer | php
  args:
     chdir: /usr/src/
    creates: /usr/local/bin/composer
warn: false
  become: yes
  name: Add Composer to global path
  сору:
    dest: /usr/local/bin/composer
    group: root
mode: '0755'
owner: root
src: /usr/src/composer.phar
     remote_src: yes
  become: yes
  name: Ansible delete file create-project
    path: /var/www/html/basic
     state: absent
  name: composer create-project
GNU nano 4.8
- name: chmod
                                                            main.yml
 become: yes
become_user: root
become_method: su
command: chmod +x /usr/local/bin/composer
 name: composer shell: cd /var/www/html/basic; /usr/local/bin/composer install --no-interaction
 name: Copy yii.conf
   src=templates/yii.conf
dest=/etc/nginx/sites-available/{{    domain }}
   servername: '{{ domain }}'
 name: Symlink yii.conf
command: ln -sfn /etc/nginx/sites-available/{{ domain }} /etc/nginx/sites-enabled/{{ domain }}
 notify:
- restart nginx
 name: Write {{ domain }} to /etc/hosts
lineinfile:
   dest: /etc/hosts
   regexp: '.*{{ domain }}'
   line: "127.0.0.1 {{ domain }}"
```

main

cd ../templates

nano yii.conf

```
set $host_path "/var/www/html/basic";
       #access_log /www/basic/log/access.log main;
server_name lxc_php7_6.dev www.lxc_php7_6.dev;
       root $host_path/web;
       set $yii_bootstrap "index.php";
       charset utf-8;
      location / {
   index index.html $yii_bootstrap;
   try_files $uri $uri/ /$yii_bootstrap?$args;
       location ~ ^/(protected|framework|themes/\w+/views) {
                   deny all;
       #avoid processing of calls to unexisting static files by yii
       location ~ \.(js|css|png|jpg|gif|swf|ico|pdf|mov|fla|zip|rar)$ {
                     try_files $uri =404;
       # pass the PHP scripts to FastCGI server listening on UNIX socket
      location ~ \.php {
    fastcgi_split_path_info ^(.+\.php)(.*)$;
                    #let yii catch the calls to unexising PHP files
set $fsn /$yii_bootstrap;
                     if (-f $document_root$fastcgi_script_name){
                                set $fsn $fastcgi_script_name;
GNU nano 4.8
                                                                                                                                                                             yii.conf
         # pass the PHP scripts to FastCGI server listening on UNIX socket location \sim \ensuremath{{\setminus}} \ensuremath{{\cap}} \ensuremath{
                     fastcgi_split_path_info ^(.+\.php)(.*)$;
#let yii catch the calls to unexising PHP files
                      set $fsn /$yii_bootstrap;
                     if (-f $document_root$fastcgi_script_name){
    set $fsn $fastcgi_script_name;
                   fastcgi_pass unix:/run/php/php7.4-fpm.sock;
                     include fastcgi_params;
fastcgi_param SCRIPT_FILENAME $document_root$fsn;
                   #PATH_INFO and PATH_TRANSLATED can be omitted, but RFC 3875 specifies them for CGI
                      fastcgi_param PATH_INFO $fastcgi_path_info;
fastcgi_param PATH_TRANSLATED $document_root$fsn;
          # prevent nginx from serving dotfiles (.htaccess, .svn, .git, etc.)
          location ~ /\. {
                    deny all;
                     access_log off;
log_not_found off;
```

- O cd ../handlers
- O nano main.yml

```
GNU nano 4.8

---

- name: restart php
become: yes
become_user: root
become_method: su
action: service name=php7.4-fpm state=restarted

- name: restart nginx
become: yes
become_user: root
become_user: root
become_method: su
action: service name=nginx state=restarted
```

cd ../../ cd wp/tasks

O nano main.yml

```
GNU nano 4.8
                                                               main.yml
 name: delete apt chache
 become: yes
 become_user: root
 become_method: su
 command: rm -vf /var/lib/apt/lists/*
 name: install php
 become: yes
 become_user: root
 become_method: su
 apt: name={{ item }} state=latest update_cache=true
 with_items:
    - nginx
    - nginx-extras
    - php7.4
    - php7.4-fpm
- php7.4-curl
    - php7.4-xml
    - php7.4-gd
- php7.4-opcache
    - php7.4-mbstring
    - php7.4-zip
    - php7.4-json
- php7.4-cli
    - php7.4-mysqlnd
```