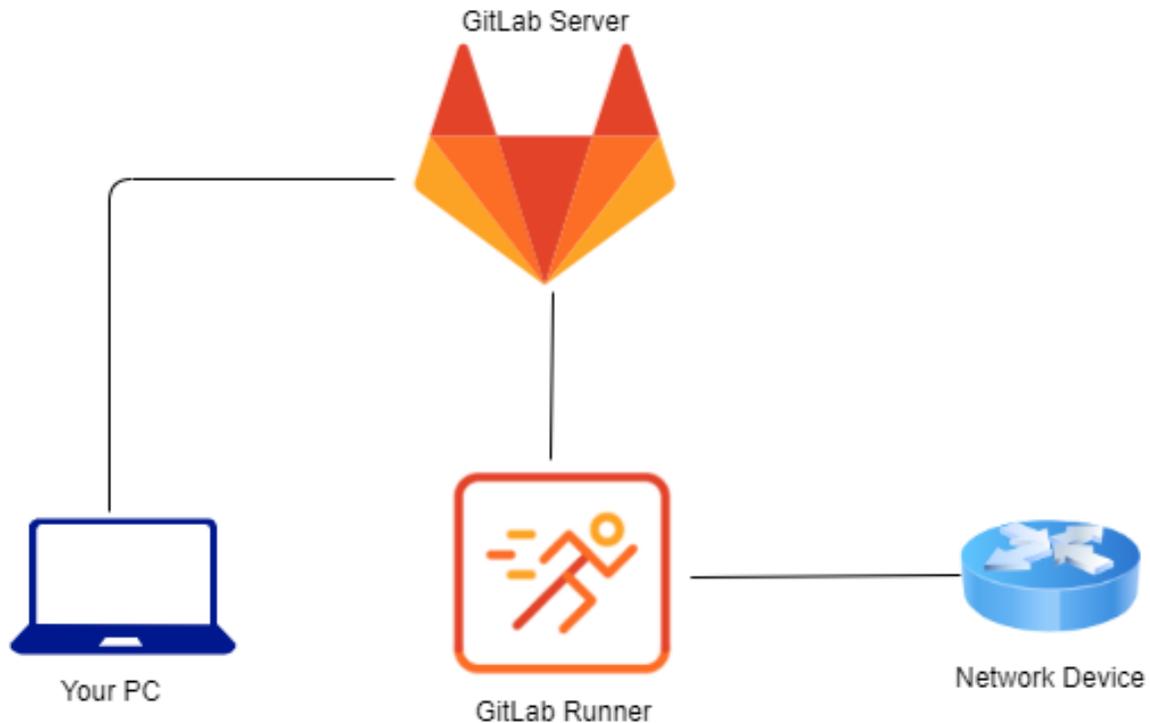


Lab - Sử dụng Gitlab CI cấu hình hostname cho thiết bị

1. Mô hình LAB



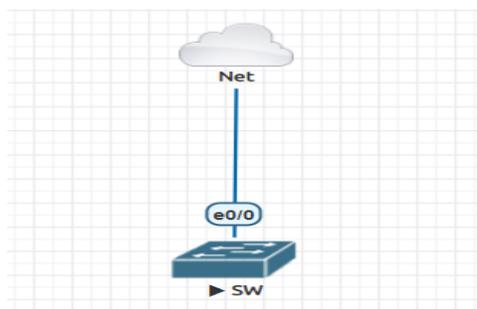
Hình 1: Mô hình LAB sử dụng để thực thi.

2. Yêu cầu

Thực hiện xây dựng luồng CI/CD cơ bản để thực hiện deploy thành công cấu hình hostname cho thiết bị với gitlab server và Gitlab Runner.

3. Các bước thực hiện

- Sau khi thực hiện cài đặt thành công Gitlab Server và Gitlab Runner ở bài lab trước chúng ta tiếp tục sử dụng chúng để cấu hình hostname cho thiết bị.
- Thiết bị cần có kết nối SSH để thực hiện cấu hình:



- Tiếp theo thực hiện sử dụng Ansible cấu hình hostname cho thiết bị như ở lab 31 và thực hiện chạy thành công.

```
root@ubuntu: /etc/ansible
- - -
- name: cau hinh SW1
  hosts: all
  gather_facts: no

  tasks:
    - name: cau hinh hostname thiet bi
      ios_config:
        lines: hostname R1

root@ubuntu:/etc/ansible# ansible-playbook hostname.yml
PLAY [cau hinh SW1] *****
TASK [cau hinh hostname thiet bi] *****
changed: [SW1]

PLAY RECAP *****
SW1 : ok=1   changed=1   unreachable=0   failed=0   s
kipped=0   rescued=0   ignored=0
```

- Thực hiện tạo project trên Gitlab Server và thực hiện kết nối Gitlab Runner với Server:

+ Tạo project như đã tạo đối với Lab: CI/CD cơ bản



Create blank project

Create a blank project to house your files, plan your work, and collaborate on code, among other things.

Project name

Project URL
 / Project slug

Want to house several dependent projects under the same namespace? [Create a group.](#)

Project description (optional)

Visibility Level [?](#)

Private
Project access must be granted explicitly to each user. If this project is part of a group, access will be granted to members of t

Internal
The project can be accessed by any logged in user except external users.

Public
The project can be accessed without any authentication.

Project Configuration

Initialize repository with a README
Allows you to immediately clone this project's repository. Skip this if you plan to push up an existing repository.

Enable Static Application Security Testing (SAST)
Analyze your source code for known security vulnerabilities. [Learn more.](#)

+ Tạo project thành công:

GitLab Instance > project_2

Project 'project_2' was successfully created. X

project_2 [?](#)
Project ID: 3

0 Commits 1 Branch 0 Tags 0 Bytes Files 0 Bytes Storage

main project_2 /

Initial commit a639966c [?](#)
Administrator authored just now

Name	Last commit	Last update
README.md	Initial commit	just now

+ Thực hiện vào Settings → CI/CD → Runner

The screenshot shows the GitLab interface for configuring runners. On the left is a sidebar with navigation options like 'Project information', 'Repository', 'Issues', etc. The main content area is titled 'Runners' and includes a 'Collapse' button. It explains that runners are processes that pick up and execute CI/CD jobs. It lists two states: 'active' (available to run jobs) and 'paused' (not available to run jobs). Below this, there are sections for 'Specific runners' (with instructions on how to set up a runner for a project, including a registration URL and token) and 'Shared runners' (with instructions on how to enable them for the project). There are also sections for 'Group runners'.

- Thực hiện kết nối Runner với Server ở máy ubuntu:

```

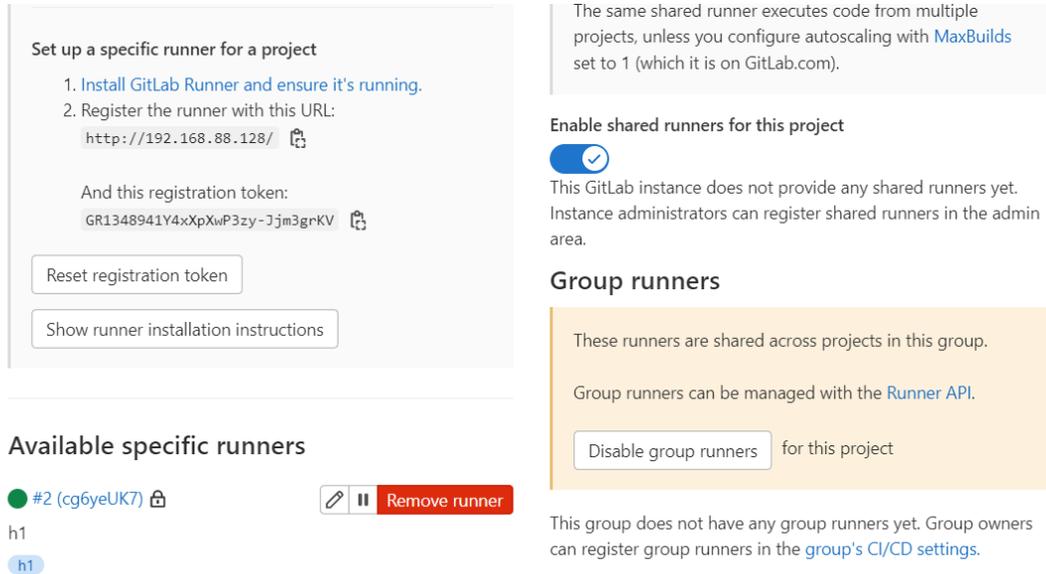
root@ubuntu:/home/huuhiiep/Desktop/project_2# gitlab-runner register
Runtime platform                          arch=amd64 os=linux pid=3515
revision=76984217 version=15.1.0
Running in system-mode.

Enter the GitLab instance URL (for example, https://gitlab.com/):
http://192.168.88.128/
Enter the registration token:
GR1348941Y4xXpXwP3zy-Jjm3grKV
Enter a description for the runner:
[ubuntu]: h1
Enter tags for the runner (comma-separated):
h1
Enter optional maintenance note for the runner:
h1
Registering runner... succeeded                runner=GR1348941Y4xXpXwP
Enter an executor: custom, ssh, virtualbox, docker+machine, docker-ssh+machine,
docker, docker-ssh, parallels, shell, kubernetes:
docker
Enter the default Docker image (for example, ruby:2.7):
centos:centos7.9.2009
Runner registered successfully. Feel free to start it, but if it's running already
the config should be automatically reloaded!

```

(Ghi chú: nhập các url và token để kết nối cũng như điền tên cần thiết để thực hiện viết file và chọn docker làm nơi thực thi trên đó)

- Kiểm tra Runner đã hoạt động hay chưa bằng cách reload lại trang:



The screenshot shows the GitLab Runner configuration interface. On the left, under "Set up a specific runner for a project", there are instructions to install GitLab Runner and register it with a URL (`http://192.168.88.128/`) and a registration token (`GR1348941Y4xXpXwP3zy-Jjm3grKV`). Below these are buttons for "Reset registration token" and "Show runner installation instructions".

On the right, there's a section "Enable shared runners for this project" with a toggle switch turned on. Below it, text explains that the instance does not provide shared runners yet and that administrators can register them in the admin area.

Below the shared runners section is the "Group runners" section, which includes a "Disable group runners" button for this project. Text below explains that the group does not have any group runners yet and that group owners can register them in the group's CI/CD settings.

At the bottom left, under "Available specific runners", there is a list of runners: "#2 (cg6yeUK7)" with a lock icon, "h1", and "h1". A "Remove runner" button is visible next to the "#2" runner.

- Và thực hiện chỉnh sửa ở hình chỉnh sửa:

This runner is associated with specific projects.

You can set up a specific runner to be used by multiple projects but you cannot make this a shared runner. [Learn more.](#)

Active Paused runners don't accept new jobs

Protected This runner will only run on pipelines triggered on protected branches

Run untagged jobs Indicates whether this runner can pick jobs without tags

Lock to current projects When a runner is locked, it cannot be assigned to other projects

IP Address

Description

Maximum job timeout
Enter the number of seconds, or other human-readable input, like "1 hour". This timeout takes precedence over lower timeout

Tags
You can set up jobs to only use runners with specific tags. Separate tags with commas.

Save changes

- Tiếp theo ta thực hiện clone project đã tạo về máy và truy cập vào thư mục:

project_2
Project ID: 3

1 Commit 1 Branch 0 Tags 72 KB Files 72 KB Storage

main project_2 / +

Initial commit
Administrator authored 7 minutes ago

README Auto DevOps enabled Add LICENSE Add CHANGELOG

Configure Integrations

Name	Last commit
README.md	Initial commit

Clone with SSH
git@192.168.88.128:gitlab-instance

Clone with HTTP
http://192.168.88.128/gitlab-insta

Open in your IDE
Visual Studio Code (SSH)
Visual Studio Code (HTTPS)
IntelliJ IDEA (SSH)

```
root@ubuntu:/home/huuhiiep/Desktop# git clone http://192.168.88.128/gitlab-instance-4ce34dd9/project_2.git
Cloning into 'project_2'...
Username for 'http://192.168.88.128': root
Password for 'http://root@192.168.88.128':
remote: Enumerating objects: 3, done.
remote: Counting objects: 100% (3/3), done.
remote: Compressing objects: 100% (2/2), done.
remote: Total 3 (delta 0), reused 0 (delta 0), pack-reused 0
Unpacking objects: 100% (3/3), 2.79 KiB | 2.79 MiB/s, done.
root@ubuntu:/home/huuhiiep/Desktop# cd project_2
root@ubuntu:/home/huuhiiep/Desktop/project_2#
```

- Thực hiện tạo file `.gitlab-ci.yml` để thực thi cấu hình hostname:

```

root@ubuntu: /home/huuhiiep/Desktop/project_2
---
image: centos:centos7.9.2009
stages:
  - deploy to test

deploy to test:
  stage: deploy to test
  image: centos:centos7.9.2009
  script:
    - yum update -y
    - yum install -y epel-release
    - yum install ansible -y
    - yum install -y python3
    - cp -rf * /etc/ansible
    - cd /etc/ansible
    - ansible-playbook hostname.yml

```

- Thực hiện copy các file `ansible.cfg`, `hosts`, `hostname.yml` vào project đã clone về:

```

root@ubuntu: /home/huuhiiep/Desktop/project_2# cp /etc/ansible/{ansible.cfg,hosts,hostname.yml} /home/huuhiiep/Desktop/project_2
root@ubuntu: /home/huuhiiep/Desktop/project_2# ls
ansible.cfg  hostname.yml  hosts  README.md
root@ubuntu: /home/huuhiiep/Desktop/project_2# ls -la
.  ..  ansible.cfg  .git  .gitlab-ci.yml  hostname.yml  hosts  README.md

```

- Sau đó thực hiện push code lên:

```

root@ubuntu: /home/huuhiiep/Desktop/project_2# git add .
root@ubuntu: /home/huuhiiep/Desktop/project_2# git commit -m "add file"
[main 6bfaf91] add file
 4 files changed, 562 insertions(+), 3 deletions(-)
 create mode 100644 ansible.cfg
 create mode 100644 hostname.yml
 create mode 100644 hosts

```

```

root@ubuntu: /home/huuhiiep/Desktop/project_2# git push
Username for 'http://192.168.88.128': root
Password for 'http://root@192.168.88.128':
Enumerating objects: 13, done.
Counting objects: 100% (13/13), done.
Delta compression using up to 4 threads
Compressing objects: 100% (9/9), done.
Writing objects: 100% (9/9), 9.19 KiB | 4.60 MiB/s, done.
Total 9 (delta 2), reused 0 (delta 0)
To http://192.168.88.128/gitlab-instance-4ce34dd9/project_2.git
 a2880fb..4130fc1  main -> main

```

- Kiểm tra kết quả thông qua pipeline:

GitLab Instance > project_2 > Pipelines > #41

running Pipeline #41 triggered just now by Administrator

Update .gitlab-ci.yml file

1 job for main (queued for 1 second)

latest

d00ae361

No related merge requests found.

Pipeline Needs Jobs 1 Tests 0

Deploy to test

deploy to test

```
716 python3-pip.noarch 0:9.0.3-8.e17 python3-setuptools.noarch 0:39.2.0-10.e17
717 Complete!
718 $ cp -rf * /etc/ansible
719 $ ansible-playbook hostname.yml
720 [WARNING] Ansible is being run in a world writable directory (/builds/gitlab-instance-4ce34dd9/project_2), ignoring it as
an ansible.cfg source. For more information see https://docs.ansible.com/ansible/devel/reference\_appendices/config.html#cfg-
in-world-writable-dir
721 PLAY [cau hình SW1] *****
722 TASK [cau hình hostname thiết bị] *****
723 ok: [SW1]
724 PLAY RECAP *****
725 SW1 : ok=1 changed=0 unreachable=0 failed=0 skipped=0 rescued=0 ignored=0
726 Job succeeded
```

→ Kiểm tra trên thiết bị thành công.

```
R1>  
R1>  
R1>  
R1>  
R1>  
R1>  
R1>  
R1>  
R1>  
R1> █
```