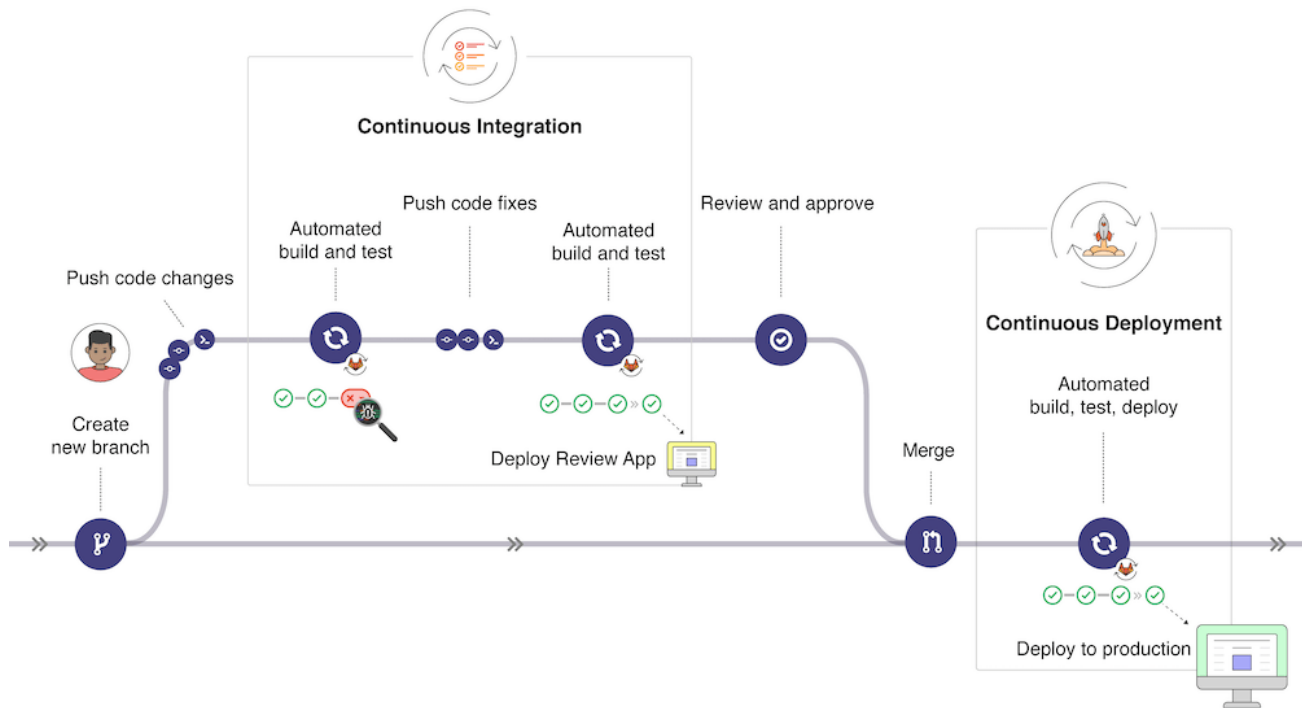


Introduction of GitLAB CI

GitLab CI Key Concept


- GitLab CI Workflow




- Pipelines are the fundamental building blocks for CI/CD in GitLab, includes:
 - Jobs, which define **what** to do.
 - Stages, which define **when** to run the jobs.
- Pipelines is described by `.gitlab-ci.yml` (or other *.yml and can be configed in gitlab) file.
- GitLab Runner is an application that works with GitLab CI/CD to run jobs in a pipeline.


Create GitLab Project






- Run a local GitLab from docker
 - <https://gitlab.icelab.lenovo.com/> issue.1: Gitlab runner register error: - x509: certificate...
- Create a project (Test code is from HR650X v2)


 **GitLab**

Projects ▾ Groups ▾ More ▾

 ▾

Search or jump to... 

    ▾  ▾



Create blank project

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

New project ▸ Create blank project

Project name

Wv2

Project URL

http://localhost/ root ▾


Project slug


Wv2

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


Project description (optional)

Description format


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 the group.

☐  Internal

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

☐  Public

The project can be accessed without any authentication.

☐ **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.

Create project

Cancel

The screenshot shows the GitLab web interface for a project named 'Wv2' (Project ID: 35). The interface is in dark mode. The top navigation bar includes the GitLab logo, 'Projects', 'Groups', and 'More' dropdowns, a search bar, and icons for repository management, settings, help, and user profile. The left sidebar contains icons for home, search, repository, merge requests, issues, packages, and settings. The main content area shows the project 'Wv2' with a lock icon and 'Project ID: 35'. It indicates that the repository is empty and provides options to clone, create a new file, or add README, LICENSE, CHANGELOG, or CONTRIBUTING files. Below this, there are sections for 'Command line instructions' and 'Git global setup'. The 'Git global setup' section shows the commands to configure the global user name and email. The 'Create a new repository' section shows the commands to clone the repository, create a README file, commit it, and push it to the origin. The 'Push an existing folder' section shows the commands to initialize a new repository, add the existing folder, commit it, and push it to the origin. The 'Push an existing Git repository' section shows the commands to rename the origin, add the existing repository, and push it to the origin.

Administrator > Wv2

Wv2 Project ID: 35

The repository for this project is empty

You can get started by cloning the repository or start adding files to it with one of the following options.

[Clone](#) [New file](#) [Add README](#) [Add LICENSE](#) [Add CHANGELOG](#) [Add CONTRIBUTING](#)

Command line instructions

You can also upload existing files from your computer using the instructions below.

Git global setup

```
git config --global user.name "Administrator"
git config --global user.email "admin@example.com"
```

Create a new repository

```
git clone git@localhost:root/Wv2.git
cd Wv2
touch README.md
git add README.md
git commit -m "add README"
git push -u origin master
```

Push an existing folder

```
cd existing_folder
git init
git remote add origin git@localhost:root/Wv2.git
git add .
git commit -m "Initial commit"
git push -u origin master
```

Push an existing Git repository

```
cd existing_repo
git remote rename origin old-origin
git remote add origin git@localhost:root/Wv2.git
git push -u origin --all
git push -u origin --tags
```

- Init project with project code

```

efika@HSuEFI-L3A209-LiuYi28 ~>Desktop>gitlab>Wv2 /master #
> git log
commit 410891f98302ce20a59dabdb88a8c15575003f26 (HEAD -> master)
Author: Karl Yi28 Liu <liuyi28@lenovo.com>
Date: Tue Mar 9 11:45:35 2021 +0800

1st commit

efika@HSuEFI-L3A209-LiuYi28 ~>Desktop>gitlab>Wv2 /master #
> git push
Enumerating objects: 30220, done.
Counting objects: 100% (30220/30220), done.
Delta compression using up to 16 threads
Compressing objects: 100% (19660/19660), done.
Writing objects: 100% (30220/30220), 349.28 MiB | 20.49 MiB/s, done.
Total 30220 (delta 9940), reused 30220 (delta 9940), pack-reused 0
remote: Resolving deltas: 100% (9940/9940), done.
remote: Checking connectivity: 30220, done.
To localhost:root/Wv2.git
 * [new branch]      master -> master

efika@HSuEFI-L3A209-LiuYi28 ~>Desktop>gitlab>Wv2 /master #
>

```

Administrator > Wv2

Wv2 Project ID: 35

🔔 1 Commit 🌿 1 Branch 🏷️ 0 Tags 📁 350.1 MB Files 📦 350.1 MB Storage

master Wv2 / + History Find file Web IDE Clone

1st commit Karl Yi28 Liu authored 10 minutes ago 410891f9

☐ Auto DevOps enabled
 ☐ Add README
 ☐ Add LICENSE
 ☐ Add CHANGELOG
 ☐ Add CONTRIBUTING

☐ Add Kubernetes cluster

Name	Last commit	Last update
.gitlab/issue_templates	1st commit	10 minutes ago
A5Debugger	1st commit	10 minutes ago
AMIDebuggerPkg	1st commit	10 minutes ago
AmiChipsetModulePkg	1st commit	10 minutes ago

Setup GitLab Runner

- [Install on Windows](#)

```
> ls
```

目录: C:\Users\efika\Desktop\gitlab\ci\runner

Mode	LastWriteTime	Length	Name
----	-----	-----	----
-a----	2021/2/24 14:33	41490944	gitlab-runner.exe

- [Register a runner](#), URL and token refer to [Settings > CI / CD > Runners](#).

```
> .\gitlab-runner.exe register
Runtime platform arch=amd64 os=windows pid=34136 revision=2ebc4dc4
version=13.9.0
```

```
Enter the GitLab instance URL (for example, https://gitlab.com/):
http://localhost/
```

```
Enter the registration token:
Fxy9zwfX4YsQzDytj_hG
```

```
Enter a description for the runner:
[HSuEFI-L3A209-LiuYi28]: build
```

```
Enter tags for the runner (comma-separated):
build
```

```
Registering runner... succeeded runner=Fxy9zwfX
```

```
Enter an executor: shell, ssh, ... custom:
shell
```

```
Runner registered successfully.
> ls
```

目录: C:\Users\efika\Desktop\gitlab\ci\runner

Mode	LastWriteTime	Length	Name
----	-----	-----	----
-a----	2021/3/9 13:57	332	config.toml
-a----	2021/2/24 14:33	41490944	gitlab-runner.exe

- Install GitLab Runner as a service and start it

```
> .\gitlab-runner.exe install
> .\gitlab-runner.exe start
```

Setup GitLab Pipeline

- Add a `.gitlab-ci.yml` to the root of project code, and submit it.

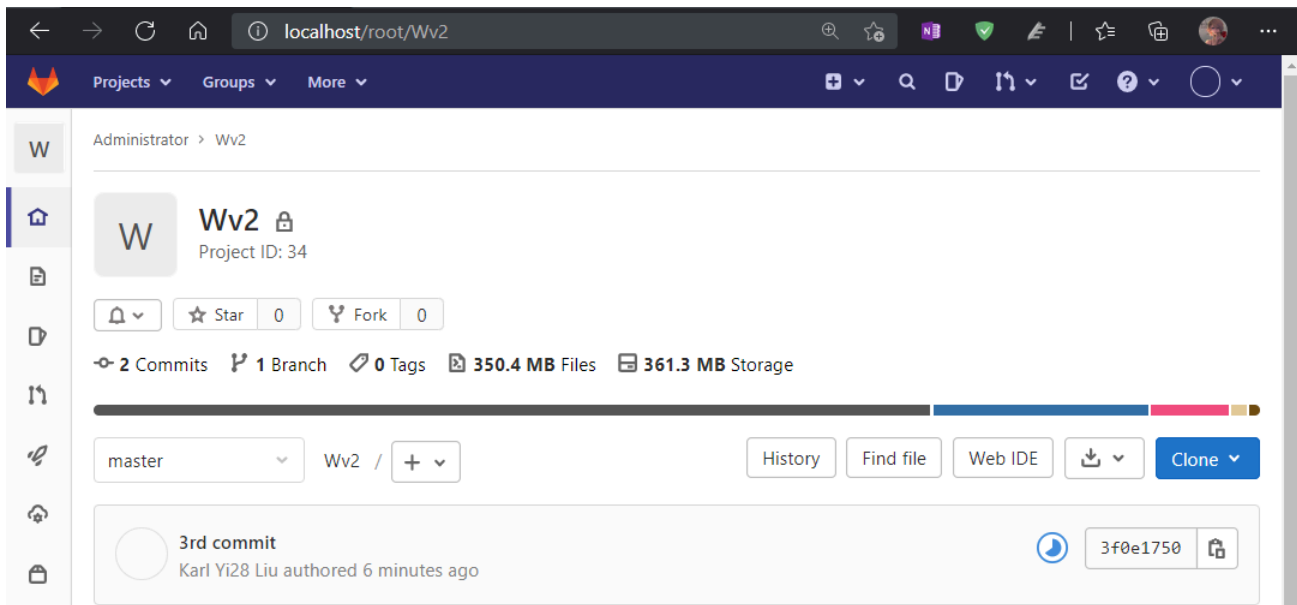
```
stages:
  - build
  - test

job1:
  stage: build
  script:
    - C:\Users\efika\Desktop\gitlab\ci\tools\AptioV\AptioV.bat
  only:
    - master
  tags:
    - build
  artifacts:
    paths:
      - xge*_*.*bin
```

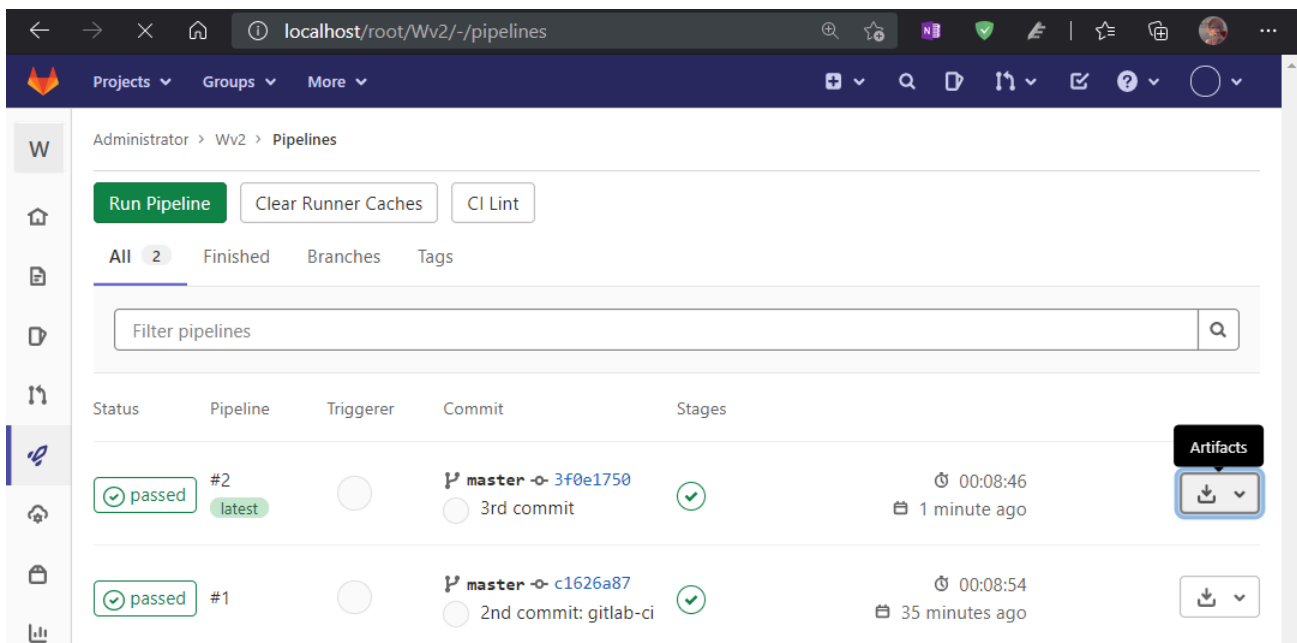
```
::C:\Users\efika\Desktop\gitlab\ci\tools\AptioV\AptioV.bat
@SET WORKSPACE=%CI_PROJECT_DIR%
@SET _APTIO_V_=%~dp0\Aptio_5.x_TOOLS_40
@SET MSVC_HOST=%~dp0\WDDK\7600.16385.1\bin\x86
@SET EWDK_HOME=%~dp0\EWDK
@SET PYTHON_II_HOME=C:\Efika\PYii
::+ Standard env for VEB
@SET CCX86DIR=%MSVC_HOST%\x86
@SET CCX64DIR=%MSVC_HOST%\amd64
@SET EWDK_DIR=%EWDK_HOME%
@SET TOOLS_DIR=%_APTIO_V_%\BuildTools
::-----
@SET VEB=WhitleyHR630XV2
@SET PYTHON_COMMAND=%PYTHON_II_HOME%\python.exe
::-----
```

```
@SET PATH=%TOOLS_DIR%;%PYTHON_II_HOME%;%PATH%
::- Standard env for VEB
CD /D %WORKSPACE% && make.exe rebuild
@CMD /K
```

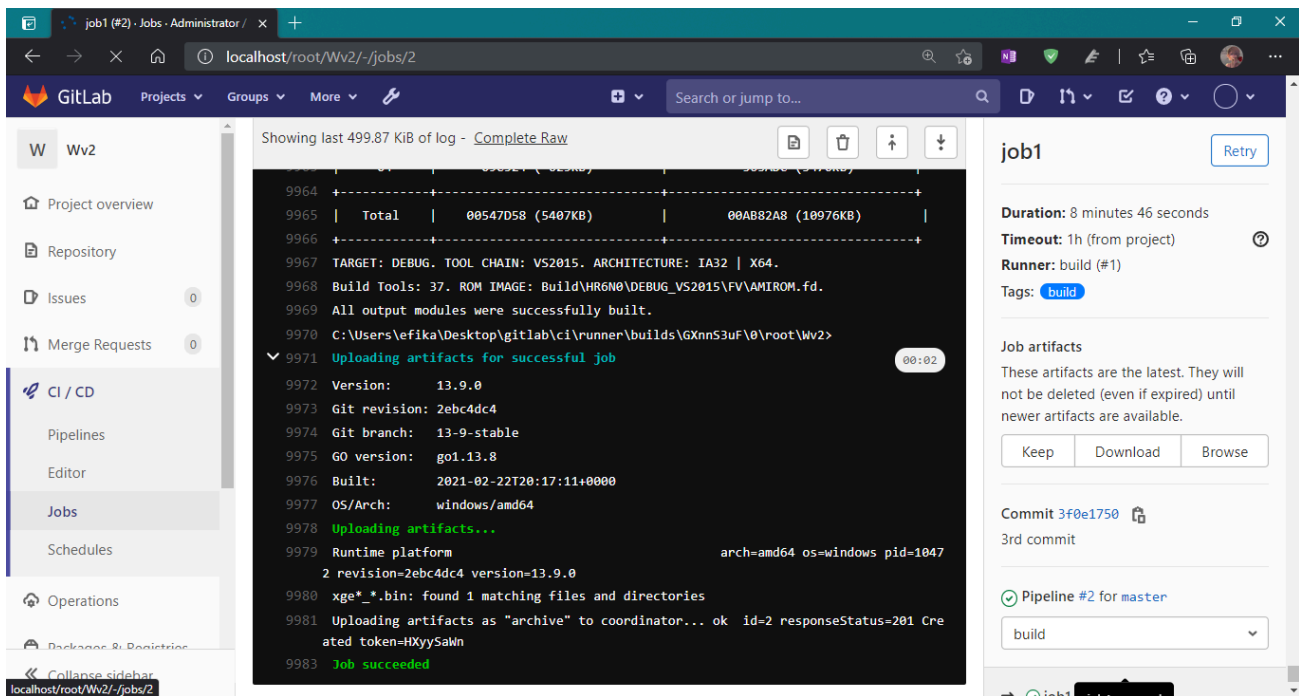
- Then the CI process is running.



- After pipeline done, the artifacts can be downloaded from **CI/CD > PipeLines** Page.



- Checking pipeline process and result log by click into it.



现存的问题

问题：GitLab服务器的防火墙限制了Gitlab Runner (CI) 的使用。

因为每一次提交的时间具有不确定性，防火墙的会话有效时间是一个小时，假设代码提交的机器并非Runner所在的机器，那么此时Runner就会运行失败，至少Runner上传给GitLab的内容会受阻。

解决A，以下二者之一：

- 为防火墙添加IP白名单功能。
- 将防火墙登录的机制接口化，提供API，让Runner可以按需登录防火墙，此时CI需要专用账户和密码。

解决B：

- 代码编译提交的环境与Runner环境共用。