Lab 4: Install Gitea Using Docker

1. Objective

The purpose of this lab is to install and configure Gitea using Docker on a Windows environment, verify that Gitea supports Git Large File Storage (LFS), and demonstrate uploading a large (1GB+) file to a repository hosted on the local Gitea instance.

2. Environment

- Operating System: Windows 10/11
- Tools: Docker Desktop, PowerShell, Git, Git LFS
- Application: Gitea (installed via Docker)
- Browser: Microsoft Edge / Google Chrome (for accessing Gitea web interface)

3. Experimental Steps

Step 1: Install and Start Docker Desktop

Open PowerShell and verify Docker installation:

- docker --version

Ensure Docker Desktop is running before proceeding.

Step 2: Pull and Run Gitea Docker Container

Create a folder for Gitea data and run the Gitea container:

- mkdir C:\GiteaData
  docker run -d --name=gitea -p 3000:3000 -p 222:22 ^
    -v C:\GiteaData:/data gitea/gitea:latest

Then open a browser and visit http://localhost:3000 to configure Gitea.

Step 3: Verify Git and LFS Installation

Run these commands:

- git --version

Step 4: Enable LFS in Gitea

Login as administrator → Site Administration → Configuration → Enable LFS.

Step 5: Create and Push a Large File Repository

In PowerShell:

- cd C:\Users\lenovo\Documents
  mkdir gitea-largefile-test
  cd gitea-largefile-test
  git init

Create a 1GB dummy file:
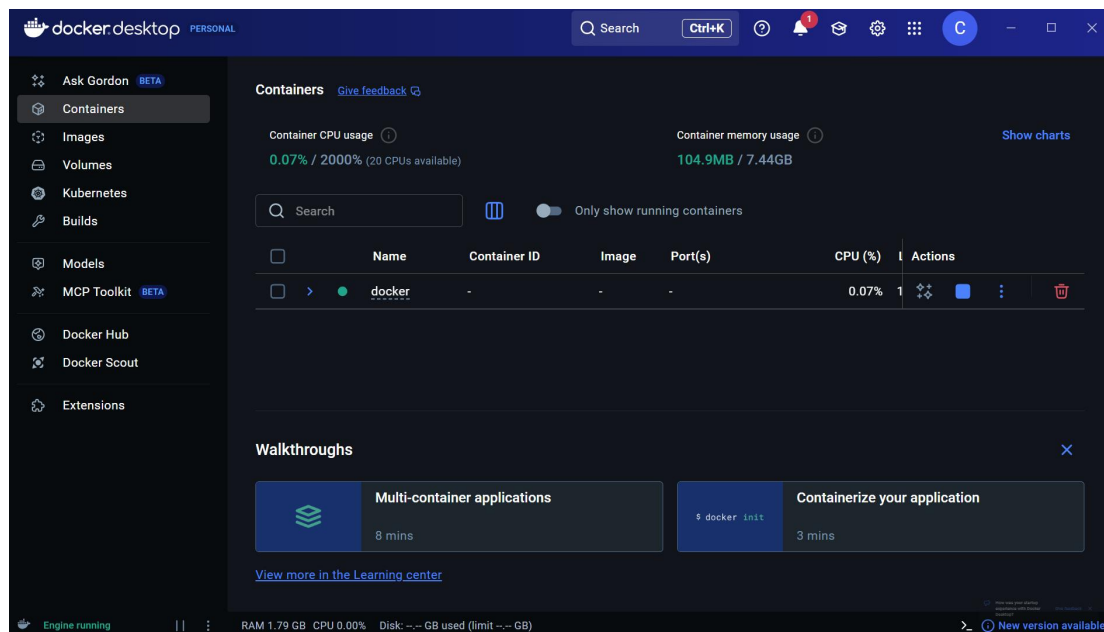
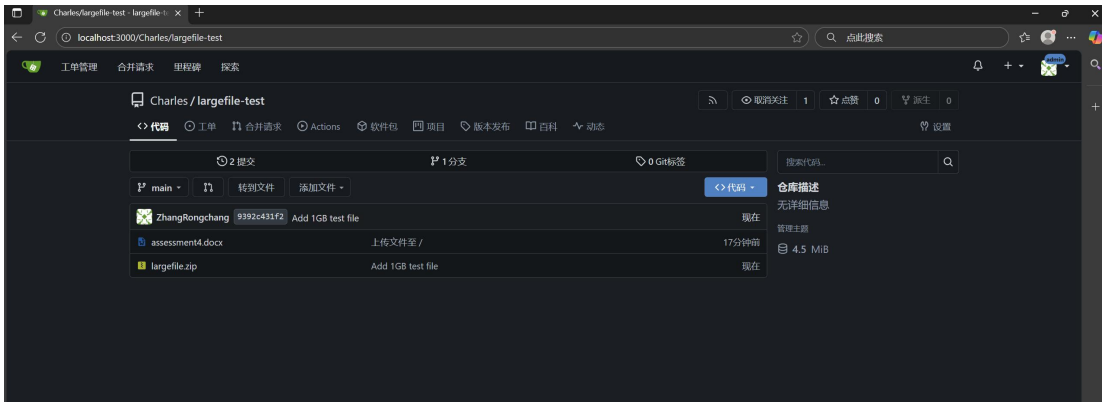- fsutil file createnew largefile.zip 1073741824

Track and commit it with Git LFS:

- git lfs track "*.zip"
  git add .gitattributes
  git add largefile.zip
  git commit -m "Add 1GB test file"

Add remote repo and push:

- git remote add origin http://localhost:3000/Charles/largefile-test.git
  git branch -M main
  git pull origin main --rebase
  git push origin main

4. Verification and Results

localhost:3000/Charles/largefile-test

工单管理　合并请求　里程碑　探索

Charles / largefile-test

取消关注 1　点赞 0　派生 0

<>代码　⊙工单　⊔合并请求　⊕Actions　软件包　项目　版本发布　白科　动态　设置

⊙2 提交　⌥1 分支　0 Git 标签

搜索代码...

main　转到文件　添加文件

<>代码

仓库描述
无详细信息

ZhangRongchang 9392c431f2 Add 1GB test file　现在

管理主题

assessment4.docx　上传文件至 /　17分钟前

4.5 MiB

largefile.zip　Add 1GB test file　现在

已成功安装
PS C:\Users\lenovo\Documents\gitea-largefile-test> git --version
git version 2.51.1.windows.1
PS C:\Users\lenovo\Documents\gitea-largefile-test> cd C:\Users\len

```
PS C:\Users\lenovo\Documents\gitea-largefile-test> winget install --id Git.Git -e --source winget
找到已安装的现有包。正在尝试升级已安装的包...
已找到 Git [Git.Git] 版本 2.51.1
此应用程序由其所有者授权给你。
Microsoft 对第三方程序包概不负责，也不向第三方程序包授予任何许可证。
正在下载 https://github.com/git-for-windows/git/releases/download/v2.51.1.windows.1/Git-2.51.1-64-bit.exe
                      63.1 MB / 63.1 MB
已成功验证安装程序哈希
正在启动程序包安装...
已成功安装
PS C:\Users\lenovo\Documents\gitea-largefile-test> git --version
git version 2.51.1.windows.1
PS C:\Users\lenovo\Documents\gitea-largefile-test> cd C:\Users\lenovo\Documents\gitea-largefile-test
>> git init
Initialized empty Git repository in C:/Users/lenovo/Documents/gitea-largefile-test/.git/
PS C:\Users\lenovo\Documents\gitea-largefile-test> fsutil file createnew largefile.zip 1073741824
已创建文件 C:\Users\lenovo\Documents\gitea-largefile-test\largefile.zip
PS C:\Users\lenovo\Documents\gitea-largefile-test> git remote add origin http://localhost:3000/Charles/largefile-test.git
PS C:\Users\lenovo\Documents\gitea-largefile-test> git add largefile.zip
>> git commit -m "Add 1GB test file"
>>
[master (root-commit) f52702d] Add 1GB test file
 1 file changed, 0 insertions(+), 0 deletions(-)
 create mode 100644 largefile.zip
PS C:\Users\lenovo\Documents\gitea-largefile-test>
PS C:\Users\lenovo\Documents\gitea-largefile-test>
PS C:\Users\lenovo\Documents\gitea-largefile-test> git branch -M main
>> git push origin main
>>
warning: use of unencrypted HTTP remote URLs is not recommended; see https://aka.ms/gcm/unsaferemotes for more information.
To http://localhost:3000/Charles/largefile-test.git
 ! [rejected]        main -> main (fetch first)
error: failed to push some refs to 'http://localhost:3000/Charles/largefile-test.git'
hint: Updates were rejected because the remote contains work that you do not
hint: have locally. This is usually caused by another repository pushing to
hint: the same ref. If you want to integrate the remote changes, use
hint: 'git pull' before pushing again.
hint: See the 'Note about fast-forwards' in 'git push --help' for details.
PS C:\Users\lenovo\Documents\gitea-largefile-test> git pull origin main --rebase
>> git push origin main
>>
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 (from 0)
Unpacking objects: 100% (3/3), 35.96 KiB | 3.60 MiB/s, done.
From http://localhost:3000/Charles/largefile-test
 * branch            main       -> FETCH_HEAD
 * [new branch]      main       -> origin/main
Successfully rebased and updated refs/heads/main.
Enumerating objects: 4, done.
Counting objects: 100% (4/4), done.
Delta compression using up to 20 threads
Compressing objects: 100% (2/2), done.
Writing objects: 100% (3/3), 1019.47 KiB | 215.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
remote: . Processing 1 references
remote: Processed 1 references in total
To http://localhost:3000/Charles/largefile-test.git
   b292aa0..9392c43  main -> main
PS C:\Users\lenovo\Documents\gitea-largefile-test>   git --version
```

LFS 配置

启用　✓

LFS 内容存放目录　{"Type":"local","Path":"/var/lib/gitea/git/lfs","TemporaryPath":"/var/lib/gitea/git/lfs/tmp","MinioConfig":{"UseSSL":false,"InsecureSkipVerify":false,"ServeDirect":false},"AzureBlobConfig":{"ServeDirect":false}}

LFS HTTP 身份验证过期时间　24h0m0s

5.

Conclusion

This lab successfully deployed Gitea via Docker and verified LFS support. A 1GB test file was uploaded to the repository, confirming Gitea's ability to handle large binary files efficiently in a Docker environment.