

# GitLab Community Edition installation (using docker)

Although it is possible to [install GitLab directly on Gentoo](#) , this guide covers the installation of the GitLab Community Edition using docker.

## Install and run docker on Gentoo

First of all, you should install the docker package:

```
emerge -avq app-emulation/docker
```

During the installing, please check the emerge messages for missing options in the current kernel.

Once installed, you should check if the system is properly configured for running dockers with:

```
/usr/share/docker/contrib/check-config.sh
```

Enable and start the docker service:

```
systemctl enable docker  
systemctl start docker
```

## Install and run the GitLab CE docker

Download the official GitLab Community Edition Docker image from [Docker Hub](#) [1] using the following command:

```
docker pull gitlab/gitlab-ce
```

To run the docker instance, check the [GitLab Docker images documentation](#).

## Docker commands

To start/restart/stop the gitlab docker (once defined following the previous section link):

```
docker start gitlab  
docker restart gitlab  
docker stop gitlab
```

To see which dockers are running:

## `docker ps`

To see the logs of the gitlab docker:

```
docker exec gitlab gitlab-ctl tail
```

To execute a bash inside the gitlab docker:

```
docker exec -it gitlab /bin/bash
```

To enter the gitlab-rails console:

```
docker exec -it gitlab gitlab-rails console
```

## NFS caveats

The NFS server and client can be fine tuned following the [GitLab NFS documentation](#).

If `/var/opt/gitlab` is not writable errors occur (which can be checked with `docker exec gitlab gitlab-ctl tail`), these can be avoided after starting the gitlab docker by changing the owner of `/var/opt/gitlab` to `git`. Also, the `noac nfs4` mount option should be used on the NFS client to prevent attributes to be cached and, therefore, to allow the previous change to be accounted for as soon as possible.

This change can be made permanent, patching `/opt/gitlab/embedded/cookbooks/gitlab/recipes/default.rb` as follows::

```
--- /opt/gitlab/embedded/cookbooks/gitlab/recipes/default.rb.orig
2019-10-03 13:39:21.826524552 +0000
+++ /opt/gitlab/embedded/cookbooks/gitlab/recipes/default.rb      2019-10-03
13:41:03.499281744 +0000
@@ -45,6 +45,11 @@
   action :create
 end

+directory "/var/opt/gitlab" do
+  owner "git"
+  action :create
+end
+
+directory "Create /var/log/gitlab" do
+  path "/var/log/gitlab"
+  owner "root"
```

The `/var/opt/gitlab` is not writable errors are caused when testing if the directory `/var/opt/gitlab/.bundle` is writable by the user `git`. The `stats()` function says that is not writable unless its parent is also writable by that user. This can be tested with the following command:

```
docker exec gitlab su - git -c "[ -w /var/opt/gitlab/.bundle ] || echo 'no
writable'"
```

## Upgrade the container

1. Check the digest number of the current version with:

```
docker images --digests | grep gitlab-ce | grep latest | grep sha256:
```

2. Compare the first digits of the digest number with those of the latest version in:

<<https://hub.docker.com/r/gitlab/gitlab-ce/tags>>.

3. If there is a newer version, then pull the new version and continue with the next steps:

```
docker pull gitlab/gitlab-ce
```

4. If an NFS mount point is used and the '/var/opt/gitlab' is not writable error occurs, then apply the previously shown patch:

```
# Run the image once using bash as entry point:
docker run -it --entrypoint bash gitlab/gitlab-ce
# Apply the previous patch on default.rb:
nano /opt/gitlab/embedded/cookbooks/gitlab/recipes/default.rb
# Create new image from ID (it appears in the prompt, e.g.
root@9ffa2baf2bb:/#),
docker commit 9ffa2baf2bb my-gitlab-ce
```

5. Stop and delete the current image, then create and start a new container from the newer image

```
docker stop gitlab
docker rm gitlab
docker run --detach \
  [...]
  --name gitlab \
  --restart always \
  --volume /srv/gitlab/config:/etc/gitlab \
  --volume /srv/gitlab/logs:/var/log/gitlab \
  --volume /srv/gitlab/data:/var/opt/gitlab \
  my-gitlab-ce # or gitlab/gitlab-ce:latest if there are no NFS problems
```

6. Cleanup previous images:

```
docker rmi $(docker images -f "dangling=true" -q)
```

7. Check that the backup procedure is working with the new version and delete previous versions backups.

## Backup

The backup strategy described next generates a backup file with a fixed name that will be incrementally backed up using an external tool. The container name is assumed to be `gitlab`.

1. Call the `gitlab-backup` tool (see [Backing up and restoring GitLab](#) for an explanation of the options being used):

```
docker exec -t gitlab gitlab-backup create STRATEGY=copy BACKUP=dump
GZIP_RSYNCABLE=yes
```

2. Use a backup tool to backup the following dirs:

```
/srv/gitlab/config/
/srv/gitlab/data/backups/
```

## Restore

To restore a given backup, restore the previously backed up dirs and follow the instructions in [Backing up and restoring GitLab](#). The next procedure assumes that:

- You have installed the exact same version and type (CE/EE) of GitLab Omnibus with which the backup was created.
- You have run `gitlab-ctl reconfigure` at least once.
- GitLab is running. If not, start it using `gitlab-ctl start`.

First make sure your backup tar file is in the backup directory (`/var/opt/gitlab/backups`). **It needs to be owned by the git user.**

```
cp gitlab-ce-12.3.4_gitlab_backup.tar /srv/gitlab/data/backups/
docker exec -it gitlab bash
chown git.git /var/opt/gitlab/backups/
```

Stop the processes that are connected to the database. Leave the rest of GitLab running:

```
gitlab-ctl stop unicorn
gitlab-ctl stop sidekiq
# Verify
gitlab-ctl status
```

Next, restore the backup, specifying the **name part** of the backup you wish to restore:

```
# This command will overwrite the contents of your GitLab database!
gitlab-backup restore BACKUP=gitlab-ce-12.3.4
```

Next, restore `/etc/gitlab/gitlab-secrets.json` if necessary as mentioned above.

Reconfigure, restart and check GitLab:

```
gitlab-ctl reconfigure  
gitlab-ctl restart  
gitlab-rake gitlab:check SANITIZE=true
```

## References

[1] <https://hub.docker.com/r/gitlab/gitlab-ce/>

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