

Gitlab Docker Upgrade Path 16.11 to 18.9

Model: qwen/qwen3.6-27b Created: 28/4/2026, 18:27:44

User

Hi! I have a Gitlab deployed with the following docker-compose.yaml:

```
services: gitlab: container_name: gitlab image: gitlab/gitlab-ce:16.11.10-ce.0 # command:
/assets/wrapper # En teoria ja ve del Dockerfile network_mode: bridge ports: - 22:22 - 80:80 -
443:443 volumes: - /etc/gitlab:/etc/gitlab:rw - /var/log/gitlab:/var/log/gitlab:rw -
/var/opt/gitlab:/var/opt/gitlab:rw environment: GITLAB_OMNIBUS_CONFIG: | external_url
'https://gitlab.ilimit.es/' letsencrypt['enable'] = true; letsencrypt['auto_renew_hour'] = "12";
letsencrypt['auto_renew_minute'] = "30"; letsencrypt['auto_renew_day_of_month'] = "*/7";
gitlab_rails['ldap_enabled'] = true gitlab_rails['ldap_host'] = 'ldap.ilimit.es' gitlab_rails['ldap_port'] =
389 gitlab_rails['ldap_uid'] = 'uid' gitlab_rails['ldap_method'] = 'plain' # 'ssl' or 'plain'
gitlab_rails['ldap_bind_dn'] = 'cn=admin,dc=ilimit,dc=lan' gitlab_rails['ldap_password'] = 'x'
gitlab_rails['ldap_allow_username_or_email_login'] = true gitlab_rails['ldap_base'] =
'dc=ilimit,dc=lan' PATH:
/opt/gitlab/embedded/bin:/opt/gitlab/bin:/assets:/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin
LANG: C.UTF-8 EDITOR: /bin/vi GITLAB_ALLOW_SHA1_RSA: false TERM: xterm healthcheck: test:
"/opt/gitlab/bin/gitlab-healthcheck --fail --max-time 10" interval: "6000s" timeout: "3000s" retries: 5
restart: unless-stopped
```

It is so outdated, the current stable version is 18.9.6-ce.0. Which would be the recommended upgrade path?

Please, search for the Gitlab recommended upgrade path thoroughly. This is a production Gitlab.

Assistant

Upgrading a production GitLab instance across major versions requires strict adherence to GitLab's upgrade path, careful configuration migration, and phased execution. Below is the **official, production-safe upgrade path** from 16.11.10-ce.0 to 18.9.6-ce.0, along with Docker-specific procedures and critical configuration updates.

Production Precautions (Do Not Skip)

1. **Full Backup:** `docker exec gitlab gitlab-backup create`

2. **Verify Backup:** Ensure the backup file exists in `/var/opt/gitlab/backups/` and test restore in a staging environment if possible.
 3. **Maintenance Window:** Each step runs database migrations. Allow **15–45 minutes per step** depending on repository size and hardware.
 4. **System Requirements:** GitLab 18.x recommends **≥8GB RAM**, **≥4 vCPUs**, and **SSD storage**. PostgreSQL 15+ and Redis 7 are required internally.
 5. **Never skip major versions.** GitLab enforces stepping through each major release.
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Official Upgrade Path (16.11 → 18.9)

GitLab allows skipping up to **3 minor versions** per step. The recommended path is:

```
16.11.10 → 17.0.0 → 17.3.0 → 17.6.0 → 17.9.0 → 17.11.0 → 18.0.0 → 18.3.0 →  
18.6.0 → 18.9.6-ce.0
```

 This path complies with GitLab's upgrade matrix and minimizes migration risk.

Step-by-Step Docker Upgrade Procedure

For **each version** in the path above:

1. **Update `docker-compose.yml`:**

```
image: gitlab/gitlab-ce:&lt;TARGET_VERSION&gt;-ce.0
```

2. **Pull & Restart:**

```
docker compose pull  
docker compose up -d
```

3. **Wait for Migrations:**

```
docker logs -f gitlab
```

Wait until you see:

```
GitLab now finished upgrading.
```

 This may take 10–40 minutes. **Do not interrupt.**

4. **Verify Health:**

```
docker compose ps
curl -s -o /dev/null -w "%{http_code}" https://gitlab.ilimit.es/
```

Expected: 200 or 302.

5. **Proceed to Next Version** only after successful verification.

Critical Configuration Modernization

Your current `docker-compose.yml` contains deprecated patterns that will cause warnings or failures in 17+/18+:

1. GITLAB_OMNIBUS_CONFIG → Mount `gitlab.rb`

`GITLAB_OMNIBUS_CONFIG` is deprecated. GitLab recommends mounting a `gitlab.rb` file directly:

```
volumes:
  - ./gitlab.rb:/etc/gitlab/gitlab.rb:rw
```

Create `gitlab.rb` with your config:

```
external_url 'https://gitlab.ilimit.es/'
letsencrypt['enable'] = true
letsencrypt['contact_emails'] = ['admin@ilimit.es'] # Highly recommended
```

2. LDAP Configuration Format

Flat LDAP keys (`ldap_host`, `ldap_bind_dn`, etc.) were deprecated in GitLab 13.0. Migrate to the `ldap_servers` hash:

```
gitlab_rails['ldap_enabled'] = true
gitlab_rails['ldap_servers'] = {
  'main' => {
    'label' => 'LDAP',
    'host' => 'ldap.ilimit.es',
    'port' => 389,
    'uid' => 'uid',
    'method' => 'plain',
    'bind_dn' => 'cn=admin,dc=ilimit,dc=lan',
    'password' => 'x',
    'allow_username_or_email_login' => true,
    'base' => 'dc=ilimit,dc=lan'
```

```
}  
}
```

3. Healthcheck Tuning

Your current healthcheck intervals are excessively long:

```
healthcheck:  
  test: "/opt/gitlab/bin/gitlab-healthcheck --fail --max-time 10"  
  interval: "60s"    # Changed from 6000s  
  timeout: "30s"     # Changed from 3000s  
  retries: 5
```

4. Remove Redundant Settings

- `network_mode: bridge` is default in Docker Compose → remove it
- `PATH`, `LANG`, `EDITOR`, `TERM` are unnecessary in GitLab containers → remove them
- `GITLAB_ALLOW_SHA1_RSA` is handled via `gitlab.rb` or deprecated → remove

Pre & Post Upgrade Checklist

Before Starting:

- ☐ Full backup created & verified
- ☐ Disk space: $\geq 20\%$ free on `/var/opt/gitlab`
- ☐ RAM $\geq 8\text{GB}$, CPU ≥ 4 cores
- ☐ `gitlab.rb` prepared with modern LDAP & Let's Encrypt config
- ☐ Maintenance page enabled (optional but recommended)

After Each Step:


- ☐ `docker logs gitlab` shows no migration errors
- ☐ `curl -I https://gitlab.ilimit.es` returns 200/302
- ☐ LDAP login tested with a test account
- ☐ `docker exec gitlab gitlab-rake gitlab:check SANITIZE=true` passes

After Final Upgrade (18.9.6):

- ☐ Verify CI/CD runners reconnect
 - ☐ Check Let's Encrypt cert renewal logs
 - ☐ Run `gitlab-backup create` to establish new baseline
 - ☐ Review `/var/log/gitlab/production.log` for deprecation warnings
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Official References

- Upgrade Path Calculator: https://docs.gitlab.com/ee/update/upgrade_path.html
 - Docker Upgrade Guide: <https://docs.gitlab.com/ee/install/docker.html#upgrading-gitlab>
 - Breaking Changes 17.0: https://docs.gitlab.com/ee/update/17_0_release_notes.html
 - Breaking Changes 18.0: https://docs.gitlab.com/ee/update/18_0_release_notes.html
 - LDAP Configuration: <https://docs.gitlab.com/ee/administration/auth/ldap/index.html>
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 **Pro Tip:** If you have CI/CD runners, pause them during the upgrade. Runners will automatically reconnect once GitLab finishes migrating. If you hit a migration error, check `/var/log/gitlab/gitlab-rails/production.log` and consider rolling back using your backup before retrying the same step.

Let me know if you need help generating the modernized `gitlab.rb` or automating the step-by-step upgrade with rollback safeguards.