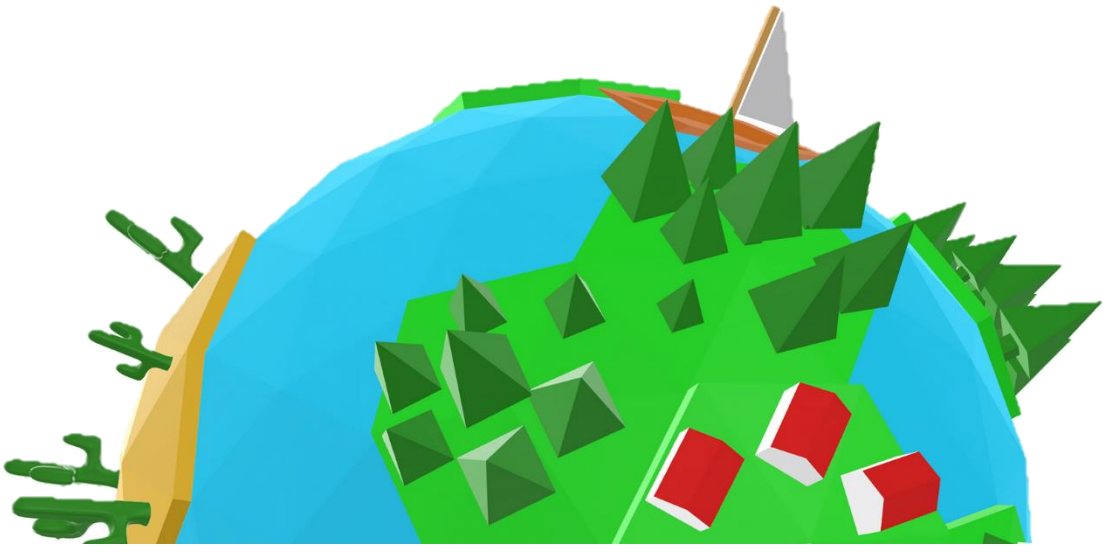
우리의 추억 포레스트

츄레스트

포팅매뉴얼



목차

1. 프로젝트 개발 환경

1) FRONT END

react	18.2.0
Next.js	13.3.0
node.js	18.15.12
typescript	5.0.4
three.js	0.151.3
react-three/fiber	8.12.2
react-three/rapier	0.15.1
react-three/drei	9.65.4
blender	3.5
react query	3.39.3
axios	1.3.6
recoil	0.7.7
stomp.js	7.0.0

2) BACK END

java	11.0.18
springboot	2.7.9
gradle	Openjdk 11.0.18+10
swagger	org.springdoc:springdoc-openapi-starter-webmvc-ui:2.0.0
MySQL	8.0.30

3) IDE

Visual Studio Code	1.77.3
IntelliJ	IDEA 2022.3.2

4) Server

Nginx	1.18.0
Jenkins	1.18.0
Docker	23.0.1

2. 설정 파일 목록

1) Front End

- **.env**
  - 카카오톡 REDIRECT URI 설정

```
NEXT_PUBLIC_IMAGE_ROOT="https://storage.cloud.google.com/churest-bucket"
NEXT_PUBLIC_API_KAKAO_KEY = bc4a08b635ae352a453b10a7dc3d78ca
# local 용
NEXT_PUBLIC_API_REDIRECT_URL = http://localhost:3000/redirect
# 서버용
NEXT_PUBLIC_API_REDIRECT_URL = https://k8a505.p.ssafy.io/redirect
```

- **package.json**

```
"scripts": {
    "dev": "next dev",
    "build": "next build",
    "start": "next start -p 3000",
    "lint": "next lint"
  },
```

- **배포 설정 파일**
  - Docker File

```
FROM node:18.15.0-alpine

WORKDIR /var/jenkins_home/workspace/Development/Development/FE/churest
COPY package*.json ./
RUN npm install
COPY . .
RUN npm run build

EXPOSE 3000

CMD ["npm", "start"]
```

- nginx.conf

```
user www-data;
worker_processes auto;
pid /run/nginx.pid;
include /etc/nginx/modules-enabled/*.conf;
events {
        worker_connections 768;
        # multi_accept on;
}
http {
        ##
        # Basic Settings
        ##

        sendfile on;
        tcp_nopush on;
        tcp_nodelay on;
        keepalive_timeout 65;
        types_hash_max_size 2048;
        client_max_body_size 2048;
        # server_tokens off;

        # server_names_hash_bucket_size 64;
        # server_name_in_redirect off;

        include /etc/nginx/mime.types;
        default_type application/octet-stream;

        ##
        # SSL Settings
        ##

        ssl_protocols TLSv1 TLSv1.1 TLSv1.2 TLSv1.3; # Dropping SSLv3, ref: POODLE
        ssl_prefer_server_ciphers on;

        ##
        # Logging Settings
        ##

        access_log /var/log/nginx/access.log;
        error_log /var/log/nginx/error.log;

        ##
        # Gzip Settings
        ##

        gzip on;

        # gzip_vary on;
        # gzip_proxied any;
        # gzip_comp_level 6;
        # gzip_buffers 16 8k;
        # gzip_http_version 1.1;
        # gzip_types text/plain text/css application/json application/javascript text/xml application/xml application/xml+rss text

        ##
        # Virtual Host Configs
        ##

        include /etc/nginx/conf.d/*.conf;
        include /etc/nginx/sites-enabled/*;
}
```

2) Back End

- **Spring Boot 설정 파일**
  - WebConfig

```
@Override
    public void addCorsMappings(CorsRegistry registry) {
        registry.addMapping("/**")
                .allowedHeaders("Origin", "Content-Type", "Accept", "X-AUTH-TOKEN")
                .allowedOrigins("*","http://localhost:8080", "http://localhost:3000"
                        , "https://k8a505.p.ssafy.io", "https://k8a505.p.ssafy.io:80", "https://k8a505.p.ssafy.io:8080", "https://
                .allowedMethods("OPTIONS", "GET", "POST", "PUT", "DELETE", "PATCH");
    }
}
```

- **application.properties**

```
#port
server.port=8080

#base url
# server.servlet.contextPath=/api
# Charset of HTTP requests and responses. Added to the "Content-Type" header if not set explicitly.
server.servlet.encoding.charset=UTF-8
# Enable http encoding support.
server.servlet.encoding.enabled=true
# Force the encoding to the configured charset on HTTP requests and responses.
server.servlet.encoding.force=true

# MySQL Driver
spring.datasource.driver-class-name=com.mysql.cj.jdbc.Driver

# DB URL serverTimezone=Asia/Seoul
spring.datasource.url=jdbc:mysql://k8a505.p.ssafy.io:3306/churest?serverTimezone=UTC&useUniCode=yes&characterEncoding=UTF-8&allowM

# DB username
spring.datasource.username=churest

# DB password
spring.datasource.password=churest7581

spring.mvc.pathmatch.matching-strategy=ant_path_matcher

spring.jpa.database=mysql
```

- **배포 설정 파일**
  - Docker File

```
FROM adoptopenjdk/openjdk11 AS builder
COPY gradlew .
COPY gradle gradle
COPY build.gradle .
COPY settings.gradle .
COPY src src
RUN chmod +x ./gradlew
RUN ./gradlew bootJAR

FROM adoptopenjdk/openjdk11
COPY --from=builder build/libs/*.jar app.jar
EXPOSE 8080
ENTRYPOINT ["java", "-jar", "app.jar"]
```

  - build.gradle

```
plugins {
  id 'java'
  id 'org.springframework.boot' version '2.7.9'
  id 'io.spring.dependency-management' version '1.1.0'
}

group = 'com.ssafy'
version = '0.0.1-SNAPSHOT'
sourceCompatibility = '11'

configurations {
  compileOnly {
    extendsFrom annotationProcessor
  }
}

repositories {
  mavenCentral()
}

dependencies {
//  implementation 'org.springframework.boot:spring-boot-starter-data-jdbc'
  implementation 'org.springframework.boot:spring-boot-starter-data-jpa'
  implementation 'org.springframework.boot:spring-boot-starter-security'
  implementation 'org.springframework.boot:spring-boot-starter-webflux'
  implementation 'org.springframework.boot:spring-boot-starter-oauth2-client'
```

```
  implementation 'org.springframework.boot:spring-boot-starter-web'
  compileOnly 'org.projectlombok:lombok'
  runtimeOnly 'com.mysql:mysql-connector-j'
  annotationProcessor 'org.projectlombok:lombok'
  testImplementation 'org.springframework.boot:spring-boot-starter-test'
  testImplementation 'org.springframework.security:spring-security-test'

  //  swagger
  implementation 'io.springfox:springfox-swagger2:2.9.2'
  implementation 'io.springfox:springfox-swagger-ui:2.9.2'

  // google cloud
  implementation group: 'com.google.cloud', name: 'spring-cloud-gcp-starter', version: '3.4.3'
  implementation group: 'com.google.cloud', name: 'spring-cloud-gcp-storage', version: '3.4.3'

  // validation 체크
  implementation 'org.springframework.boot:spring-boot-starter-validation'

  // jwt
  implementation 'io.jsonwebtoken:jjwt:0.9.1'

  //websocket
  implementation 'org.springframework.boot:spring-boot-starter-websocket'
  implementation 'org.webjars:sockjs-client:1.1.2'
  implementation 'org.webjars:stomp-websocket:2.3.3-1'
//
////   new
//  implementation "com.h2database:h2"
//
//  implementation "io.jsonwebtoken:jjwt-api:0.11.2"
//  implementation "io.jsonwebtoken:jjwt-impl:0.11.2"
//  implementation "io.jsonwebtoken:jjwt-jackson:0.11.2"

  implementation 'com.google.firebase:firebase-admin:9.1.1'

  // Multipart file
  implementation 'commons-io:commons-io:2.11.0'    /* Apache commons-io */
  implementation group: 'commons-fileupload', name: 'commons-fileupload', version: '1.4' /* Apache Commons FileUpload */

}

tasks.named('test') {
  useJUnitPlatform()
}

bootJar{
  bootJar.enabled=true
}

jar {
    enabled = false
}
```

3. EC2 설정 시나리오

0) 사용 포트

구분	포트 번호
Front-end	3000
Back-end	8080
Sub-Back-end	9090
MySQL	3306

1) EC2 인증키를 이용한 접근

cmd 또는 windows powershell 을 이용해 다운받은 Pem 파일이 있는 폴더에서 명령어를 입력

```
$ ssh -i K8A505T.pem ubuntu@k8a505.p.ssafy.io
```

2) 방화벽 설정

현재 방화벽 status 확인 및 설정

```
$ sudo ufw status
$ sudo ufw allow 22
$ sudo ufw enable
$ sudo reboot
```

3) Docker 설치

Ubuntu에 도커 설치

```
$ sudo apt update

# 필수 패키지 설치
$ sudo apt-get install -y ca-certificates \
    curl \
    software-properties-common \
    apt-transport-https \
    gnupg \
    lsb-release

# GPG Key 다운로드
$ sudo mkdir -p /etc/apt/keyrings
$ curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo gpg --dearmor -o /etc/apt/keyrings/docker.gpg
$ echo \
    "deb [arch=$(dpkg --print-architecture) signed-by=/etc/apt/keyrings/docker.gpg] https://download.docker.com/linux/ubuntu \
    $(lsb_release -cs) stable" | sudo tee /etc/apt/sources.list.d/docker.list > /dev/null

# Docker 설치 (docker-compose 도 추가로 설치해주기)
$ sudo apt update
$ sudo apt install docker-ce docker-ce-cli containerd.io docker-compose

# 도커 확인
$ sudo service docker status
```

4) Jenkins 설치 및 설정

1. docker-compose 를 이용해 젠킨스 컨테이너 생성

```
$ vim docker-compose.yml
```

docker-compose.yml 파일

- Esc 이후 :wq 를 입력하여 파일 저장

```
version: '3'

services:
    jenkins:
        image: jenkins/jenkins:lts
        container_name: jenkins
        volumes:
      - /usr/bin/docker:/usr/bin/docker
            - /var/run/docker.sock:/var/run/docker.sock
            - /jenkins:/var/jenkins_home
        ports:
            - "9090:8080"
        privileged: true
        user: root
```

컨테이너 생성

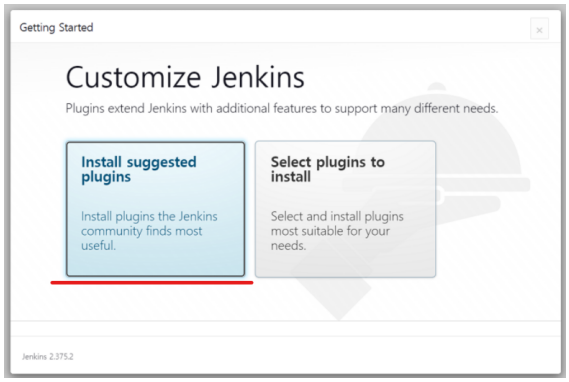
```
$ sudo docker-compose up -d
컨테이너 확인
$ sudo docker ps
```

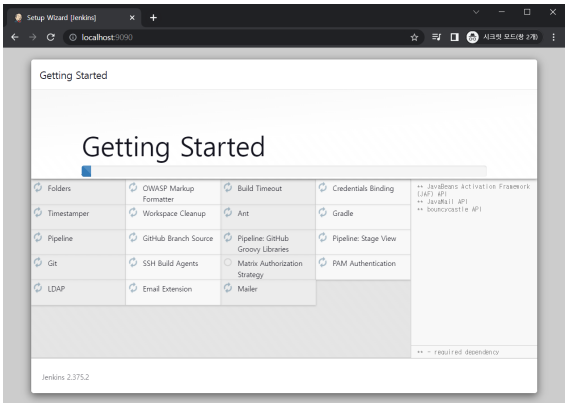
2. jenkins 접속 (서버 주소)

서버공인 IP:9090 으로 접속하면 젠킨스 시작 화면이 나오게 됨


```
# 비밀번호 확인 방법
$ sudo docker logs jenkins
```

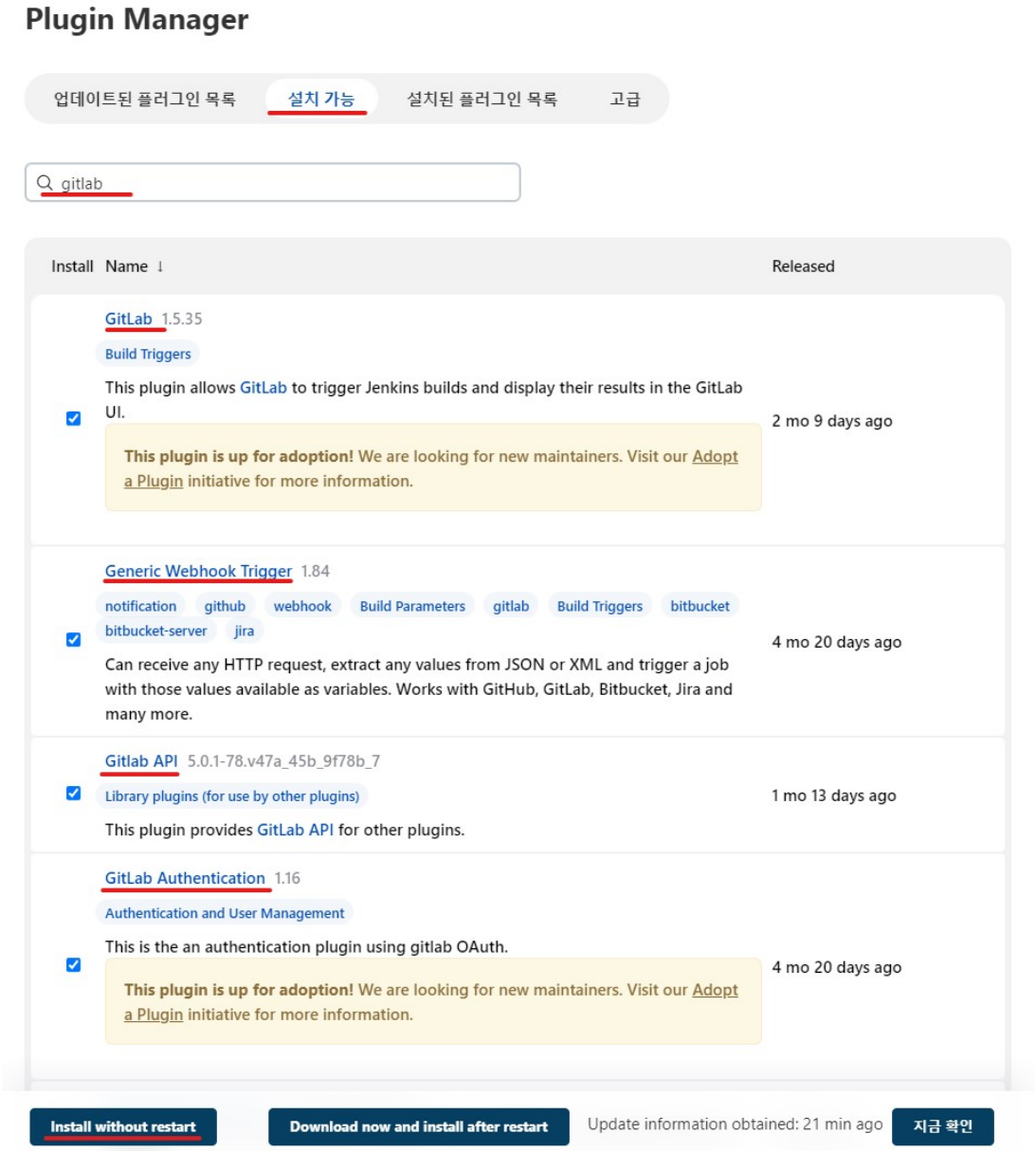
3. 기본 설치



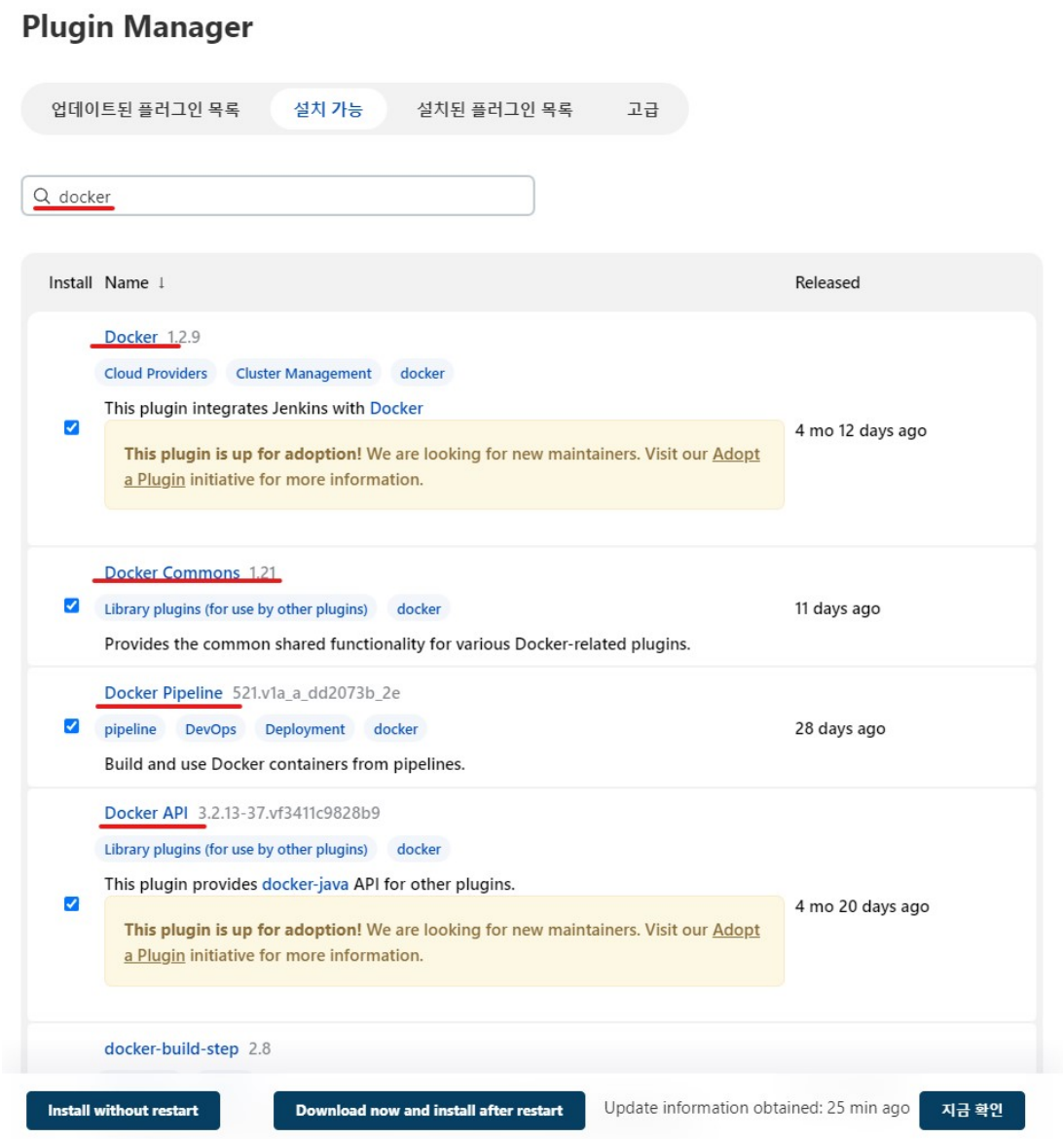


4. jenkins 플러그인 설치

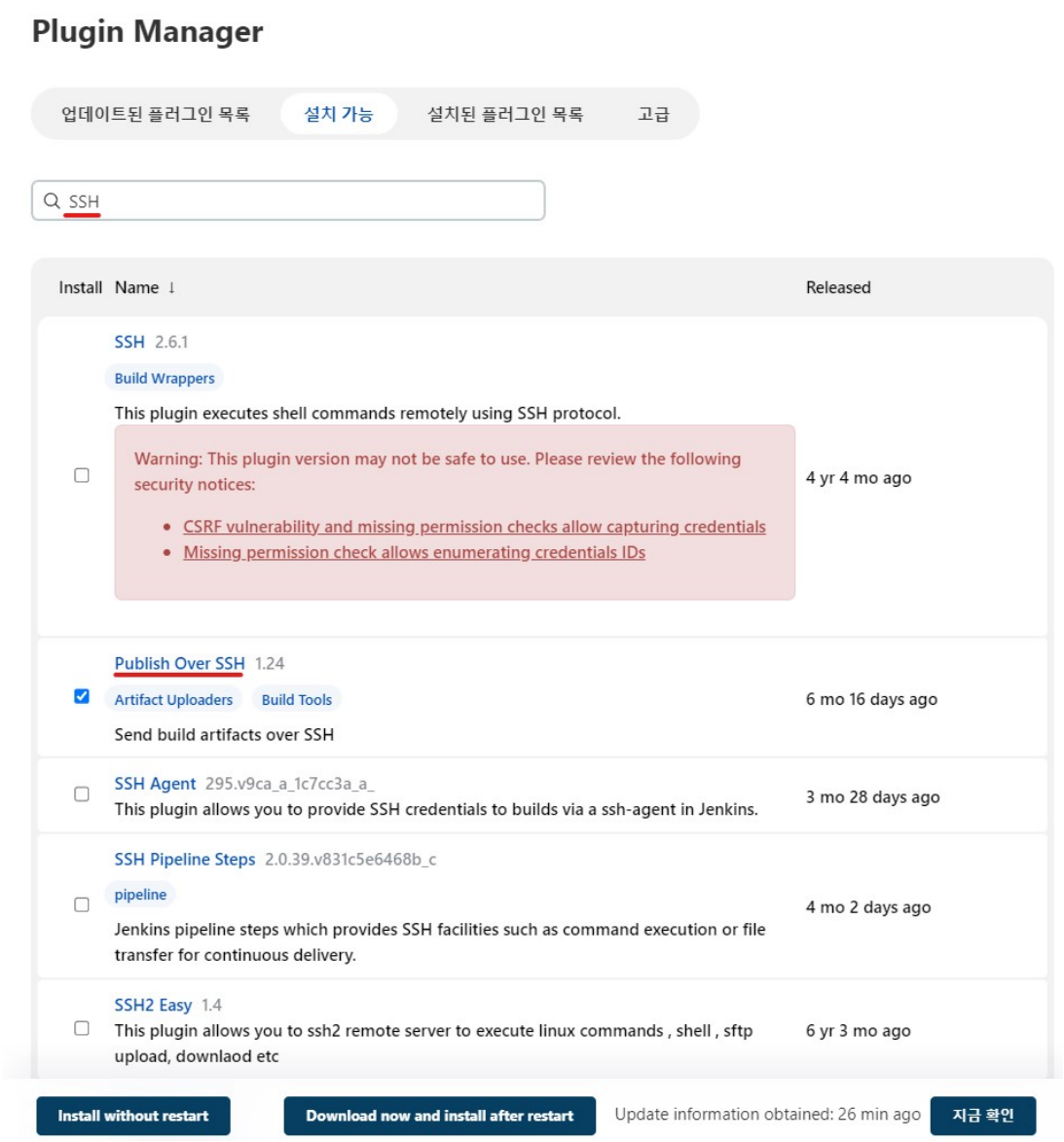
- **Dashboard → Jenkins 관리 → 플러그인 관리 → Available plugins**
- **Gitlab 관련 항목 설치**
  - Gitlab, Generic Webhook Trigger, Gitlab API, Gitlab Authentication 설치



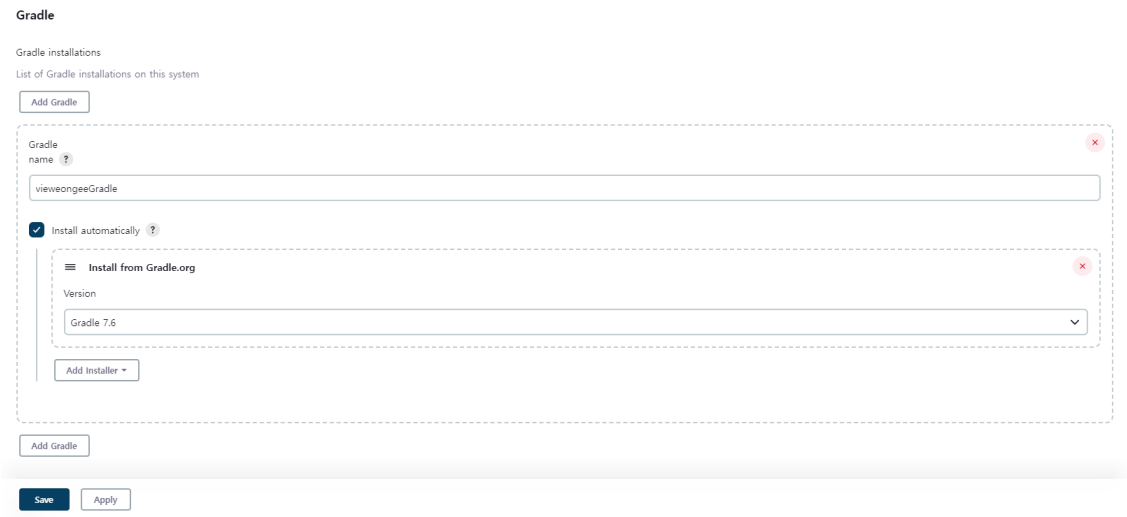
- **Docker 관련 항목 설치**
  - Docker, Docker Commons, Docker Pipeline, Docker API 설치



- **SSH 연결 관련 항목 설치**
  - Publish Over SSH 설치



5. Gradle 사용하는 경우
   - Jenkins 관리 → Global Tool Configuration → Gradle 버전 설정 후 추가



5) Nginx 설치

```
# 설치
$ sudo apt-get install nginx

# 설치 확인 및 버전 확인
$ nginx -v

# Nginx 설정은 SSL 인증서 발급 후에
```

6) SSL 인증서 발급

```
# certbot 설치
$ sudo apt-get install python3-certbot-nginx
$ sudo certbot certonly --nginx -d k8a505.p.ssafy.io
# 인증서 발급
$ sudo certbot certonly --nginx -d k8a505.p.ssafy.io
# 인증서 내역 확인
$ sudo certbot certificates

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
Found the following certs:
  Certificate Name: k8a505.p.ssafy.io
    Domains: k8a505.p.ssafy.io
    Expiry Date: 2023-07-27 03:01:38+00:00 (VALID: 89 days)
    Certificate Path: /etc/letsencrypt/live/k8a505.p.ssafy.io/fullchain.pem
    Private Key Path: /etc/letsencrypt/live/k8a505.p.ssafy.io/privkey.pem
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
```

7) Nginx 설정

```
$ sudo vi /etc/nginx/sites-available/churest.conf
$ sudo vi /etc/nginx/conf.d/default.conf
```

```
# 잘 돌아가는 지 테스트
$ sudo nginx -t

# nginx 실행
$ sudo systemctl start nginx

# 실행 확인
$ sudo systemctl status nginx
```

```
server {

         location / {
                proxy_hide_header Access-Control-Allow-Origin;
                add_header 'Access-Control-Allow-Origin' '*';
                add_header 'Access-Control-Allow-Methods' 'GET, POST, OPTIONS';
                add_header 'Access-Control-Allow-Headers' 'DNT,User-Agent,X-Requested-With,If-Modified-Since,Cache-Control,Content-Typ
                add_header 'Access-Control-Expose-Headers' 'Content-Length,Content-Range';
                proxy_connect_timeout 90;
                proxy_send_timeout 90;
                proxy_read_timeout 90;

                proxy_pass http://localhost:3000;

                proxy_buffer_size 128k;
                proxy_buffers   4 256k;
                proxy_busy_buffers_size 256k;
                proxy_http_version 1.1;
    #         proxy_set_header Upgrade $http_upgrade;
     #          proxy_set_header Connection "upgrade";
      #         proxy_set_header Host $host;
       #        proxy_set_header Origin "";


#proxy_set_header    X-Real-IP           $remote_addr;
#    proxy_set_header    X-Forwarded-For     $proxy_add_x_forwarded_for;
location /api {
                proxy_hide_header Access-Control-Allow-Origin;
                add_header 'Access-Control-Allow-Origin' '*';
                add_header 'Access-Control-Allow-Methods' 'GET, POST, OPTIONS';
                add_header 'Access-Control-Allow-Headers' 'DNT,User-Agent,X-Requested-With,If-Modified-Since,Cache-Control,Content-Typ
                add_header 'Access-Control-Expose-Headers' 'Content-Length,Content-Range';
                proxy_connect_timeout 90;
                proxy_send_timeout 90;
                proxy_read_timeout 90;
                proxy_pass http://localhost:8080/api;

#               proxy_http_version 1.1;
 #              proxy_set_header Upgrade $http_upgrade;
  #             proxy_set_header Connection "upgrade";
   #            proxy_set_header Host $host;
    #            proxy_set_header Origin "";


     }

        location /chat {
#               proxy_hide_header Access-Control-Allow-Origin;
   #             add_header 'Access-Control-Allow-Origin' '*';
  #              add_header 'Access-Control-Allow-Methods' 'GET, POST, OPTIONS';
 #               add_header 'Access-Control-Allow-Headers' 'DNT,User-Agent,X-Requested-With,If-Modified-Since,Cache-Control,Content-Ty
#                add_header 'Access-Control-Expose-Headers' 'Content-Length,Content-Range';
 #               proxy_connect_timeout 90;
 #               proxy_send_timeout 90;
#                proxy_read_timeout 90;
                proxy_pass http://localhost:8080/chat; # WebSocket Server

               proxy_http_version 1.1;
               proxy_set_header Upgrade $http_upgrade;
               proxy_set_header Connection "upgrade";
               proxy_set_header Host $host;
                proxy_set_header Origin "";

#proxy_set_header    X-Real-IP           $remote_addr;
 #   proxy_set_header    X-Forwarded-For     $proxy_add_x_forwarded_for;

        }

        listen 443 ssl;

        ssl_certificate /etc/letsencrypt/live/k8a505.p.ssafy.io/fullchain.pem;
        ssl_certificate_key /etc/letsencrypt/live/k8a505.p.ssafy.io/privkey.pem;
 }
 server {
        server_name k8a505.p.ssafy.io;
        listen 80;
        return 301 https://$server_name$request_uri;
 }
```

```
$ sudo vi /etc/nginx/nginx.conf
```

```
user www-data;
worker_processes auto;
pid /run/nginx.pid;
include /etc/nginx/modules-enabled/*.conf;
events {
        worker_connections 768;
        # multi_accept on;
}
http {
        ##
        # Basic Settings
        ##

        sendfile on;
        tcp_nopush on;
        tcp_nodelay on;
        keepalive_timeout 65;
        types_hash_max_size 2048;
        client_max_body_size 2048;
        # server_tokens off;

        # server_names_hash_bucket_size 64;
        # server_name_in_redirect off;

        include /etc/nginx/mime.types;
        default_type application/octet-stream;

        ##
        # SSL Settings
        ##

        ssl_protocols TLSv1 TLSv1.1 TLSv1.2 TLSv1.3; # Dropping SSLv3, ref: POODLE
        ssl_prefer_server_ciphers on;

        ##
        # Logging Settings
        ##

        access_log /var/log/nginx/access.log;
        error_log /var/log/nginx/error.log;

        ##
        # Gzip Settings
        ##

        gzip on;

        # gzip_vary on;
        # gzip_proxied any;
        # gzip_comp_level 6;
        # gzip_buffers 16 8k;
        # gzip_http_version 1.1;
        # gzip_types text/plain text/css application/json application/javascript text/xml application/xml application/xml+rss text/jav

        ##
        # Virtual Host Configs
        ##

        include /etc/nginx/conf.d/*.conf;
        include /etc/nginx/sites-enabled/*;
}
```

8) MySQL 설치

(1) Ubuntu에 MySQL 설치

```
# MySQL을 설치
sudo apt-get update
sudo apt-get install mysql-server

# MySQL 구동
sudo systemctl start mysql.service

# MySQL 접속s
$ sudo mysql
```

```
# 계정 생성
mysql> CREATE USER '계정이름'@'%' IDENTIFIED BY '비밀번호';

# GRANT로 권한 부여 - 어떠한 ip에서든 해당 계정에 모든 권한 부여
mysql> GRANT ALL PRIVILEGES ON . TO '계정이름'@'%' WITH GRANT OPTION;
mysql> FLUSH PRIVILEGES;

# 현재 mysql에서 기본으로 세팅 되어있는 유저들과 추가된 유저를 확인
mysql > SELECT user,authentication_string,plugin,host FROM mysql.user;

# database 생성- utf8 확장 버전
mysql > CREATE DATABASE '데이터베이스명' CHARACTER SET utf8mb4 collate utf8mb4_general_ci;

# 해당 계정이 database의 모든 테이블에 모든 권한 행사
mysql > GRANT ALL PRIVILEGES ON '데이터베이스명'.* TO '계정이름'@'%';
```

(2) MySQL Workbench 사용법

1. MySQL Workbench 설치
2. Connection 설정
   - MySQL Connection → '+' 버튼
   - Server에 있는 MySQL과 연결
     - Connection Name: 원하는 이름
     - Hostname: 접속할 서버 주소
     - Username: 생성한 MySQL 계정의 username

3. 배포

1) Jenkins & GitLab 연동

(1) jenkins에서 프로젝트 생성

Dashboard → 새로운 Item → 프로젝트 이름 입력 → Freestyle project

(2) 소스 코드 관리

소스 코드 관리 > Git 선택 > git clone 주소 입력

→ Credentials 아래의 Add > Jenkins 선택 > Username: 싸피깃 아이디 / Password: 싸피깃 비밀번호 / ID: Credential 구별할 아무 텍스트 입력하기 > Add 버튼

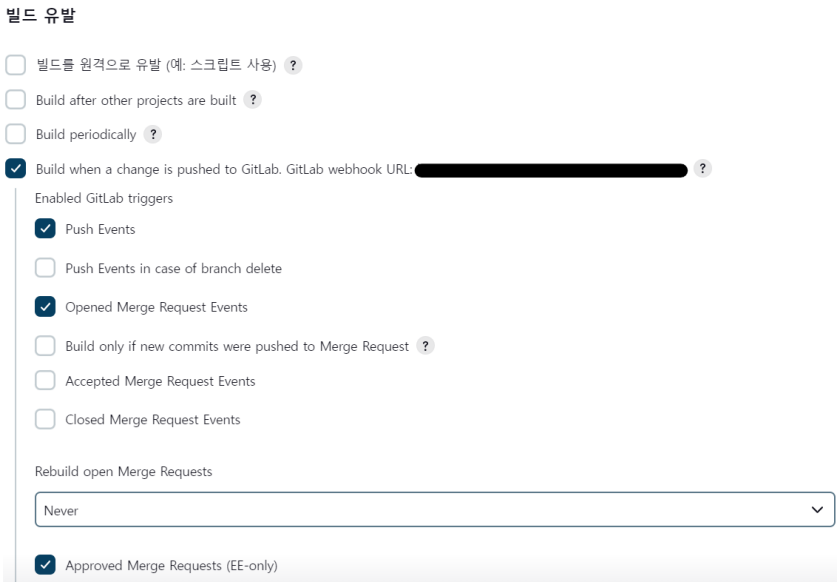
→ 저장한 credential을 클릭했을 때 에러메세지가 뜨지 않으면 정상 접근 연동 성공

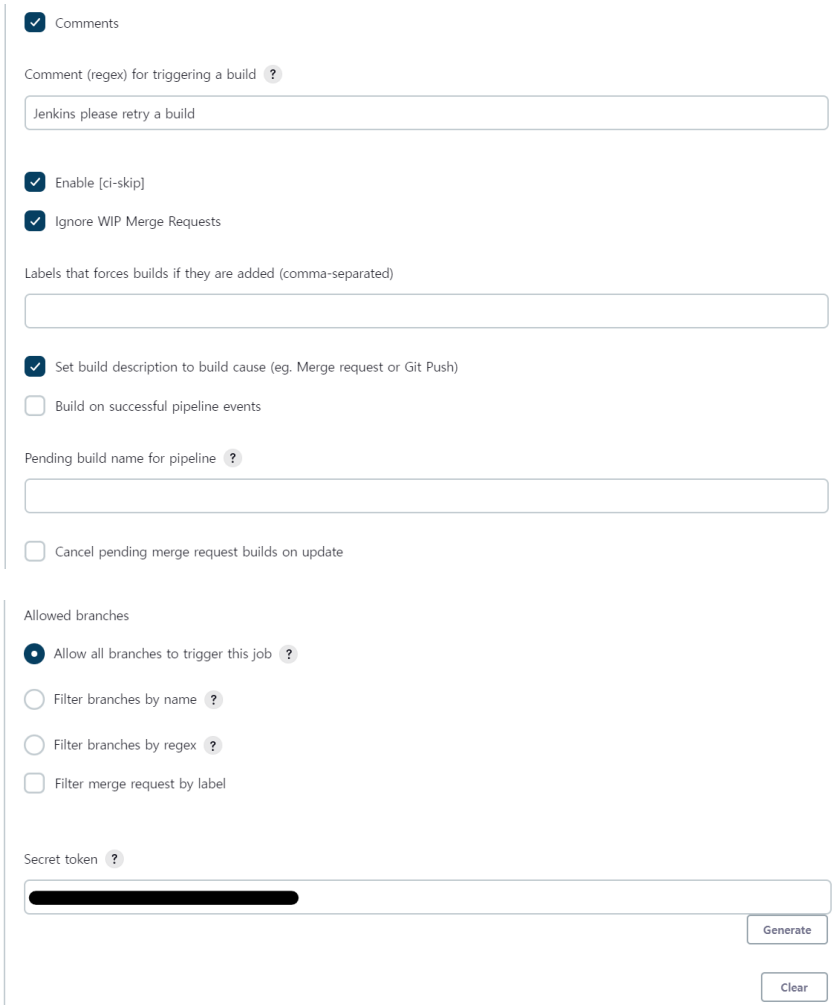
(3) 빌드 유발

- `Build when a change is pushed to GitLab` 체크

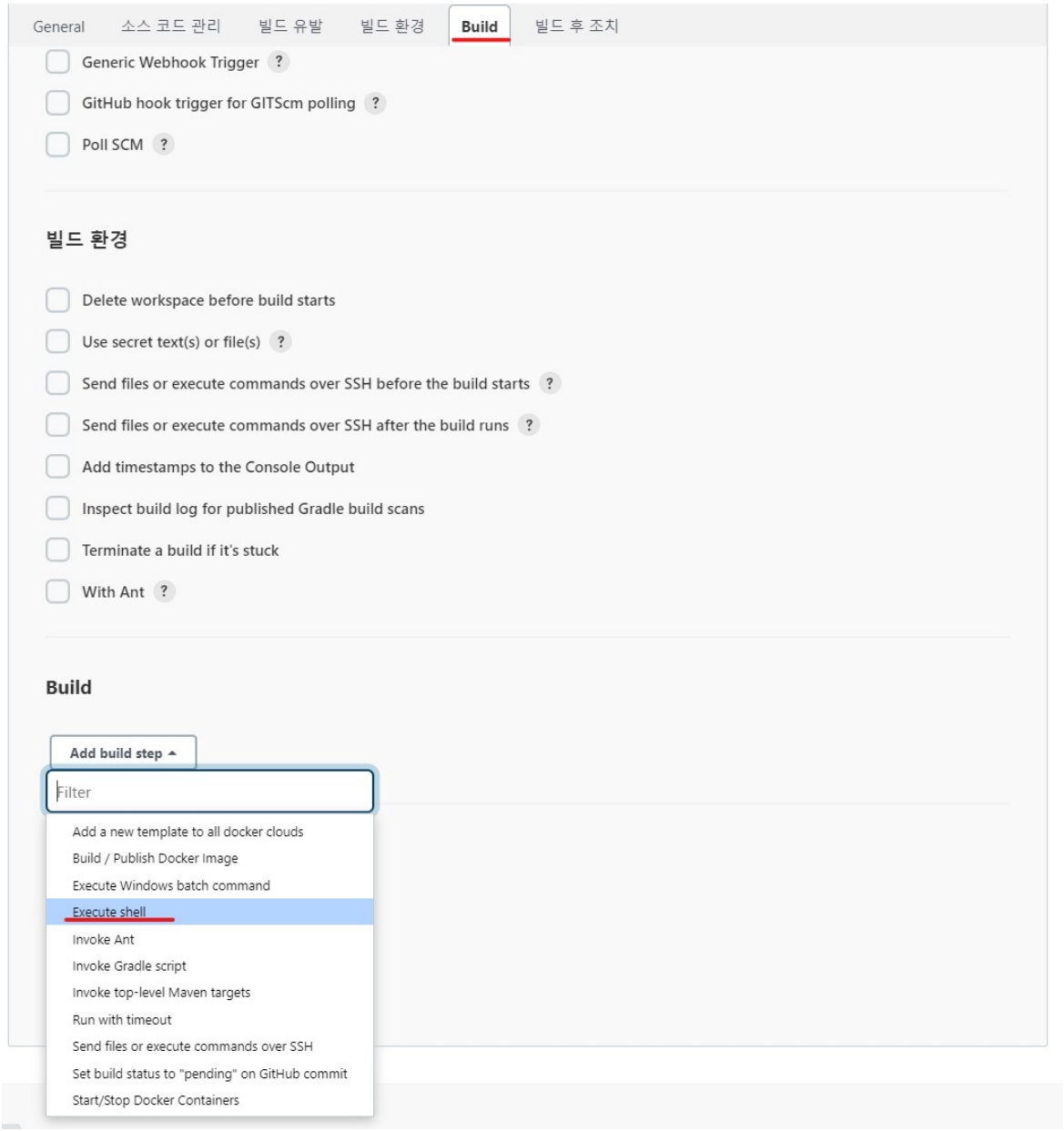
(4) Webhook 설정

1. Jenkins project 선택 > 구성 > 빌드 유발 > Secret token Generate(따로 기록해두기) > 저장

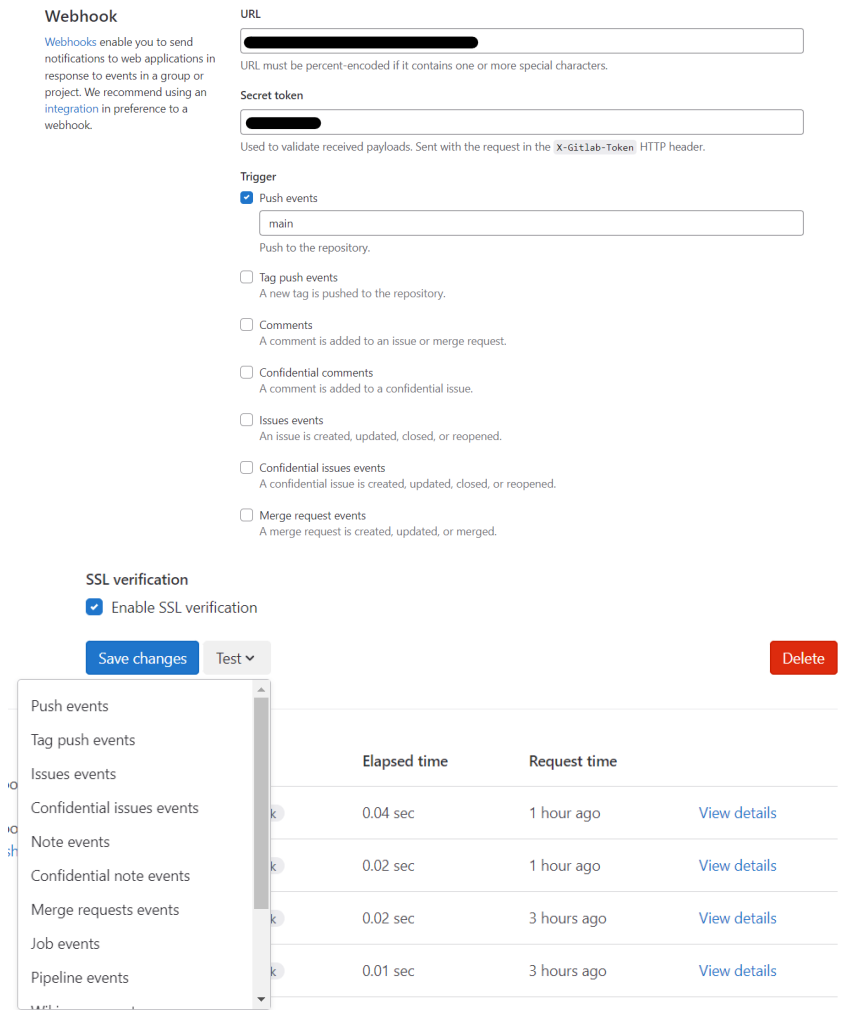




- Build 탭 > Add build Step > Execute Shell 선택



2. GitLab Settings > Webhooks



3. GitLab Webhooks의 URL과 Secret token에 Jenkins의 URL과 Secret token 작성
4. 원하는 브랜치에 push할 때마다 자동 빌드 되도록 설정 (develop)

(5) Execute Shell

```
echo "Run BE"
if (docker ps | grep "BackEnd"); then docker stop BackEnd; fi
if (docker images | grep "backimg"); then docker rmi backimg; fi
docker build -t backimg ./Development/BE/churest
docker run -it -d --rm -p 8080:8080 --name BackEnd backimg

echo "Run FE"
if (docker ps | grep "FrontEnd"); then docker stop FrontEnd; fi
if (docker images | grep "frontimg"); then docker rmi frontimg; fi
docker build -t frontimg ./Development/FE/churest
docker run -it -d --rm -p 3000:3000 --name FrontEnd frontimg
```

4. 외부 서비스

1) Kakao

- **기본 정보**
- **redirect**

```
https://k8a505.p.ssafy.io/redirect
http://localhost:3000/redirect
```

- **수집 정보**
  - 닉네임, 카카오계정 (이메일)

2) Google Cloud Storage

- **키 발급**
  - google cloud platform console 접속 후 project 생성
  - Storage > browser에서 버킷 생성
- **SpringBoot 설정**
  - build.gradle

```
implementation group: 'com.google.cloud', name: 'spring-cloud-gcp-starter', version: '3.4.3'
implementation group: 'com.google.cloud', name: 'spring-cloud-gcp-storage', version: '3.4.3'
```

  - application.properties

```
# Google cloud key
spring.cloud.gcp.storage.credentials.location=classpath:churest-project-a89b305ab00e.json
```