

Install PSA with minikube on an offline machine

Last verified by Ricardo Pesciotta on 10-18-2022

How to install PSA with minikube on a machine that has no internet connection

The installation of PSA with minikube includes different components to be installed, most of which assume an internet connection is available. That might however not be the case everywhere. So here's how to perform the installation on an "offline" machine.

PREPARATION - ON A TEMPORARY LINUX MACHINE

1. Install minikube (<https://k8s-docs.netlify.app/en/docs/tasks/tools/install-minikube/>)
2. Export the kicbase docker image used by minikube (this will be imported manually on the target machine)
3. Download (docker pull) the official postgresql image from docker hub, and export it to a tar file (this will be imported manually on the target machine)
4. Unpack the PSA installation files and build the necessary docker images (ex: heimdall and synth-api) locally on this machine ([Set up the Web Monitoring PSA and API Monitoring PSA in Minikube](#)). After building, export them into tar files (they will be manually imported on the target machine)

Command for exporting a docker image into a file:

```
1 docker save --output="target_file.tar" image/tag
```

Command for importing a docker image:

```
1 docker load --input target_file.tar
```

PREPARATION - ON THE TARGET OFFLINE MACHINE

Transfer the installation files to the offline machine:

- Docker RPMs

- Minikube RPM
- helm binary
- exported kicbase docker image
- exported postgresql:12 docker image
- exported PSA docker images (ex: heimdall, api-synth)
- PSA installation files

PERFORM THE INSTALLATION - ON THE TARGET OFFLINE MACHINE

- Install docker using the RPMs - example: <https://docs.docker.com/engine/install/rhel/>
- Install helm binary - <https://helm.sh/docs/intro/install/>
- Install minikube with RPM - <https://k8s-docs.netlify.app/en/docs/tasks/tools/install-minikube/>
- Import the kicbase docker image directly into docker
- Create a minikube cluster specifying the exact docker image tag that was just imported. This is very important, because even the documented mechanism (<https://minikube.sigs.k8s.io/docs/handbook/offline/>) for importing the cache of a successfully installed minikube instance into an offline machine currently does not work. Thus, the workaround is to import the image directly into docker, and then specify that as a "custom image" fo minikube in order for it to work:

```
1 minikube start --cpus=8 --memory=32gb --kubernetes-version=v1.22.2 --driver=docker --
  base-image="grc.io/k8s-minikube/kicbase:v0.0.27"
```

- Import the postgres docker image into the minikube namespace (similar to how PSA-specific images are loaded according to the PSA documentation). Example:

```
1 (eval $(minikube docker-env) && docker load -i postgres-12.tar.gz)
```

- Import the PSA docker images built on the temporary linux machine, in the minikube namespace (similar command as above)
- Unpack the PSA installation files into a temporary folder and perform installation
- Edit the values.yaml file and insure the docker images and tags match with the ones manually imported
- Perform the normal helm installation, as documented ([Set up the Web Monitoring PSA and API Monitoring PSA in Minikube](#))