

Jenkins Peering Guide

Jenkins Agents

Agents are computers that are set up to build projects for a **Jenkins Master**.

Jenkins runs a separate agent program on build nodes. When agents are registered to a master, the master starts distributing load to agents by scheduling jobs to run on agents if the jobs are set to run on them.

Term **Node** is used to refer to all machines that are part of Jenkins grid, agents and master.

Two types of agents are currently connected to Akraino Jenkins and handling different tasks depending on the purpose of connecting the agent.

- Agents hosted in Community Lab.
- Agents hosted in Validation Lab.

Agents without red cross next to computer icon are fully functional.

Connecting Agents to Akraino Jenkins

The method that is normally used for connecting agents to Jenkins requires direct SSH access to servers. This is the method that is used for connecting agents hosted in LF Lab.

Connecting agents using direct SSH access can become a challenge given that Akraino has number of different Validation labs provided by community as mentioned in previous section. All these labs have different security requirements which can increase the effort and the time needed for connecting agents to Jenkins. In order to reduce the effort and the time needed for connecting agents and streamline the process, it has been decided to connect agents using [Java Network Launch Protocol \(JNLP\)](#).

Connecting Agents from LF Lab to Akraino Jenkins

Agents hosted in LF handled by LF. All the requests and questions regarding these agents should be submitted to [Jira Support Desk](#).

Connecting Agents from Community Labs to Akraino Jenkins

As noted in corresponding section, agents from Community Lab are connected using JNLP. Via JNLP, agents open connection towards Jenkins Master instead of Jenkins Master accessing to them directly.

Servers connecting to Akraino Jenkins using this method must have access to the internet.

Please follow below steps to connect an agent to Akraino Jenkins.

1. Create a user named **Jenkins** on the machine you want to connect to Akraino Jenkins and give the user sudo rights.
2. Install needed software on the machine you want to connect to Akraino Jenkins as an agent.
 - a. `openjdk 8`
 - b. `monit`
3. If the agent will be used for running virtual deployments, Functest, and Yardstick, install below software and make Jenkins user the member of the groups.
 - a. `docker`
 - b. `libvirt`
4. Create agent root in Jenkins user home directory.

```
mkdir -p /home/jenkins/akraino/agent_root
```

5. Clone Akraino ci-management repository.

```
mkdir -p /home/jenkins/akraino/repos
cd /home/jenkins/akraino/repos
git clone https://gerrit.akraino.org/r/ci-management
```

6. Add all required information to the [Community managed Jenkins agents](#) wiki page.
7. Contact LF by submitting a ticket to the [LF Support Desk](#) and request creation of an agent on Akraino Jenkins. Include below information in your mail.
 - a. Remote root directory (`/home/jenkins/akraino/agent_root`)
 - b. Number of executors (the number of concurrent jobs to allow on the agent).
 - c. Label(s). The label(s) define what jobs can be run on a particular agent. Each job should have a build-node defined in its JJB definition.
 - d. An agent name. This has generally followed the convention of "`<OS>-dev-<CPUs>c-<RAM>g`", though this is not a strict rule. The important thing is that the name is a unique and useful identifier. Other elements, such as "prd" or "snd" to identify the environment or numbering at the end, will be added by LF.
8. You will receive a confirmation from LF containing the complete agent name and a secret token.

9. Run the following script in order to make sure there is no problem connecting. You should see **INFO: Connected** in the console log.

```
cp /home/jenkins/akraino/repos/ci-management/utils/jenkins-jnlp-connect.sh /home/jenkins/  
cd /home/jenkins  
sudo ./jenkins-jnlp-connect.sh -j /home/jenkins -u jenkins -n <agent name on Akraino Jenkins> -s <the  
token you received from LF> -t
```

- a. If you receive a connectivity error, then you need to check your firewall and allow outgoing connections for the port.
10. Kill the Java agent.jar process.
11. Run the same script normally without test (-t) in order to get monit script created.

```
sudo ./jenkins-jnlp-connect.sh -j /home/jenkins -u jenkins -n <agent name on Akraino Jenkins> -s <the  
token you received from LF>
```

12. Edit monit configuration and enable http interface. The file to edit is /etc/monit/monitrc on Ubuntu systems. Uncomment below lines.

```
# set httpd port 2812 and  
#   use address localhost # only accept connection from localhost  
#   allow localhost      # allow localhost to connect to the server and
```

13. Restart monit service.

- a. Without systemd:
- ```
sudo service monit restart
```
- b. With systemd: you have to enable monit service first and then restart it.
- ```
sudo systemctl enable monit  
sudo systemctl restart monit
```

14. Check to see if Jenkins comes up as managed service in monit.

```
sudo monit status
```

15. Connect agent to Akraino Jenkins using monit.

```
sudo monit start jenkins
```

16. Check agent on Akraino Jenkins to verify the agent is reported as connected. The agent on Akraino Jenkins should have some executors in "Idle" state if the connection is successful.