OpenClovis inc.
USA

Software Installation Manual

8th May 2023

STAKEHOLDERS

Internal

- Anand Pandey
- Hung Ta
- Sang Dinh
- Tuyen Ho
- Dennis
- Jimmy

External

- None

OVERVIEW

This document describes the installation of Openclovis' SDK on Ubuntu 22.04 with two nodes.

PURPOSE

To provide detailed instructions on how to install and setup Openclovis SDK on Ubuntu 22.04 on two separate nodes.

SCOPE

The installation instruction is valid only for Ubuntu 22.04 and assumes that the software is installed on two separate servers. No virtual machines should be used.

PREREQUISITES

Servers

- Need two physical servers.

OS

- Ubuntu 22.04

OpenClovis SDK

- 6.0

OpenClovis 3rd Party

- 1.3

Networking

- Both machines should be connected to the network using a cabled connection. No WiFi.
- Turn off Wifi on both the nodes. This is important.

RESPONSIBILITIES

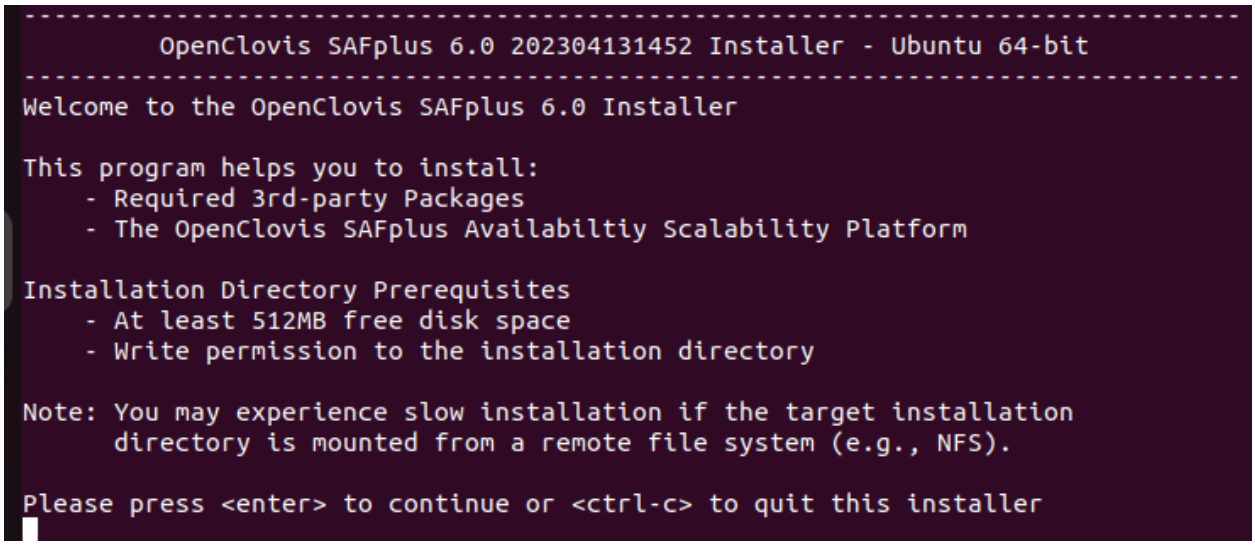
- Author : Vijay Kaushik
- Reviewers
    - Hung Ta
    - Sang Dinh
    - Tuyen Ho

PROCEDURE

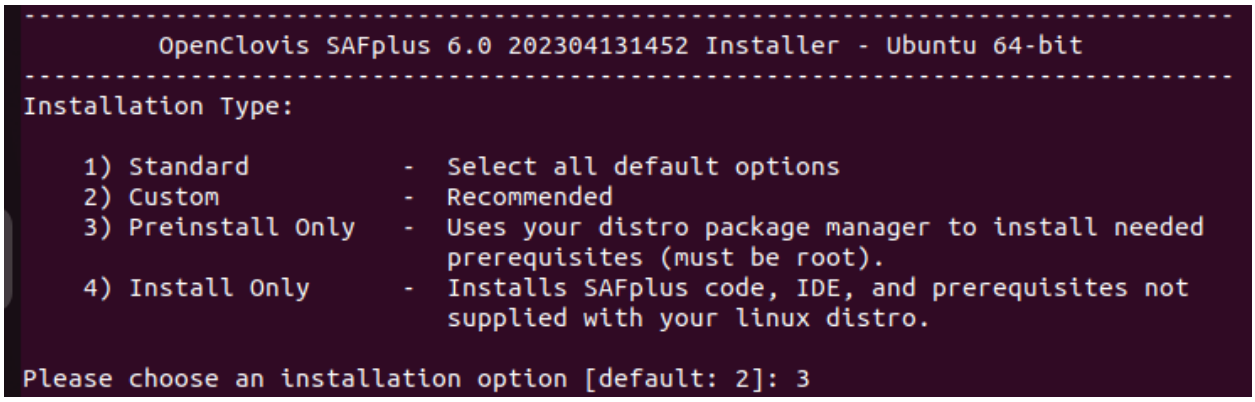
Download Software, Installation

1. Download OpenClovis SDK from here.
2. Download the 3rd party libraries from here.
3. Extract the SDK in the $HOME directory.
4. Create a softlink to the extracted directory running the following command.
    a. `ln -s <extracted directory name> openclovis`
5. Copy the 3rd party library to $HOME.

6. `cd $HOME/openclovis`
7. `sudo su root`
8. Run the command `./install`
9. You will see the following screen. Press `<enter>` to continue.

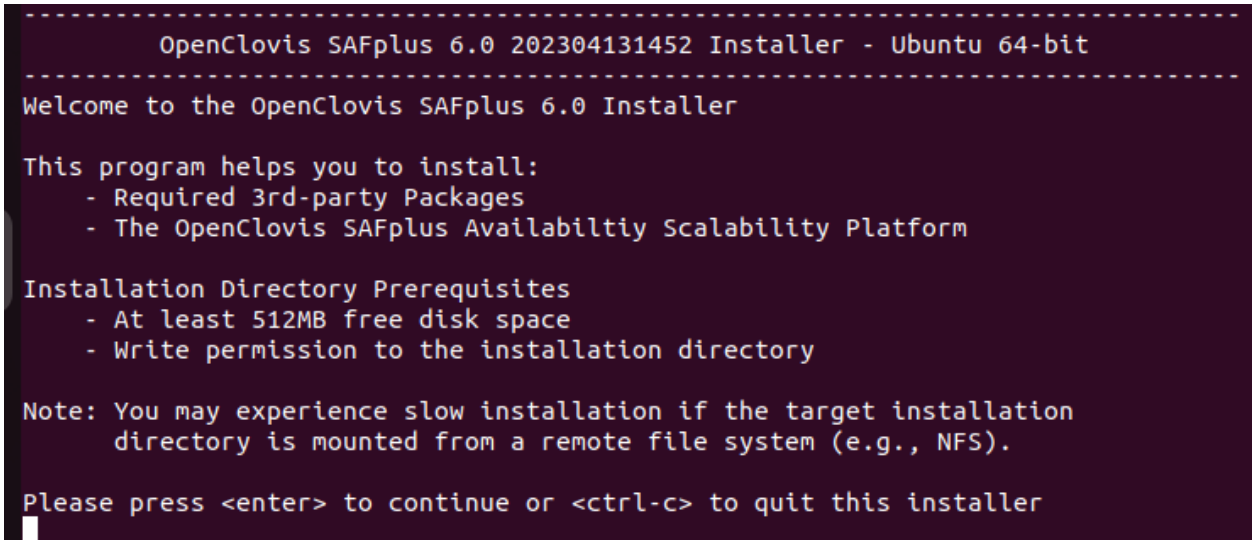


10. You will see the following screen. Choose option 3.

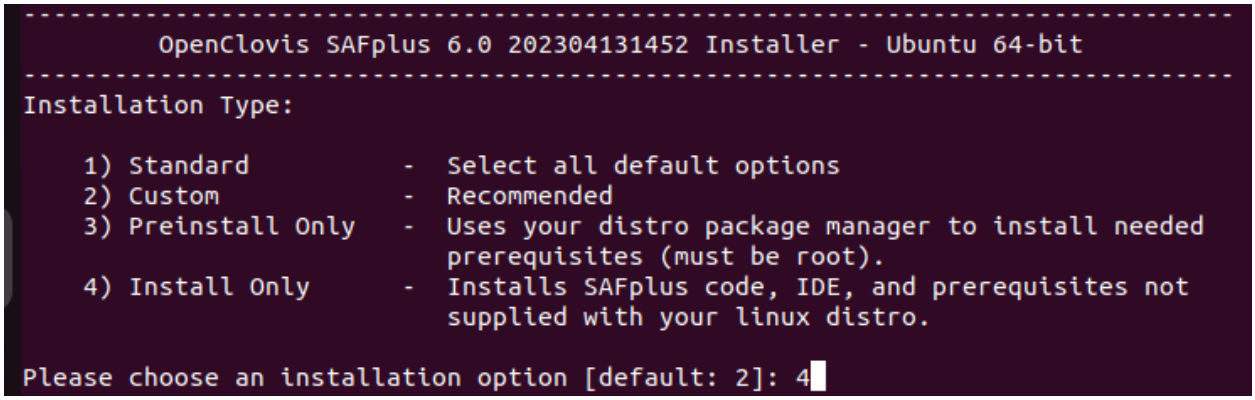


11. Again run `./install`

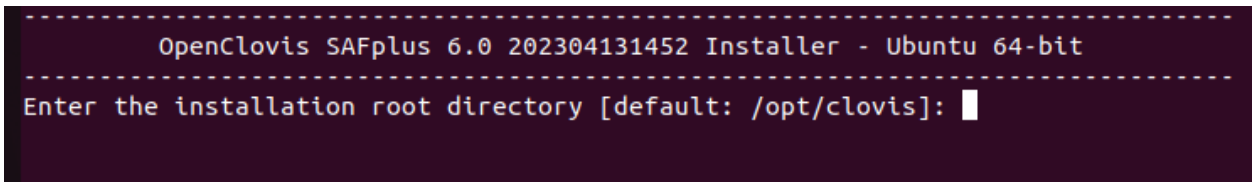
12. You will see the following screen. Press <enter> to continue.



13. You will see the following screen. This time choose option 4.



14. You will see the following screen. Accept the default value.



15. Here are some transitional screenshots.

```
--------------------------------------------------------------------------------
        OpenClovis SAFplus 6.0 202304131452 Installer - Ubuntu 64-bit
--------------------------------------------------------------------------------
Enter the installation root directory [default: /opt/clovis]:
TIPC : True
Install tipc module
tipc major : 2 - tipc minor : 0
/bin/sh: 1: sqlite3: not found
Working root set to [/home/vkaushik], package root at [/opt/clovis/sdk-6.0]
List ['3rdparty-base-1.30-x86_64.tar']
Beginning configure, build, and install of: net-snmp 5.8
tar xfm /home/vkaushik/3rdparty-base-1.30-x86_64.tar net-snmp-5.8.tar.gz
move into extracted folder: /home/vkaushik/openclovis-safplus-sdk-6.0-202304131452/workspace
move into extracted folder: net-snmp-5.8
```

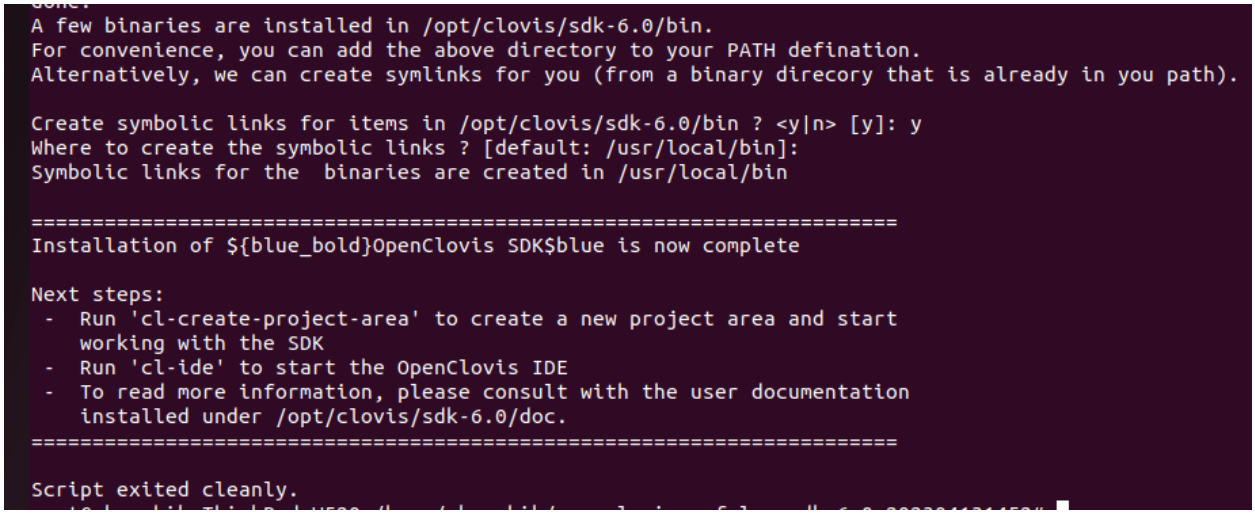
```
net-snmp 5.8 was installed successfully
Beginning configure, build, and install of: openhpi-subagent 2.3.4
tar xfm /home/vkaushik/3rdparty-base-1.30-x86_64.tar openhpi-subagent-2.3.4.tar.gz
move into extracted folder: /home/vkaushik/openclovis-safplus-sdk-6.0-202304131452/workspace
move into extracted folder: openhpi-subagent-2.3.4
openhpi-subagent 2.3.4 was installed successfully
Beginning configure, build, and install of: tipc-config 2.0.2
tar xfm /home/vkaushik/3rdparty-base-1.30-x86_64.tar tipcutils-2.0.2.tar.gz
move into extracted folder: /home/vkaushik/openclovis-safplus-sdk-6.0-202304131452/workspace
move into extracted folder: tipcutils-2.0.2
tipc-config 2.0.2 was installed successfully
Beginning configure, build, and install of: JRE 1.8.0
JRE 1.8.0 was installed successfully
Beginning configure, build, and install of: eclipse 3.7.1
eclipse 3.7.1 was installed successfully
Beginning configure, build, and install of: EMF 2.7.1
EMF 2.7.1 was installed successfully
Beginning configure, build, and install of: GEF 3.7.2
GEF 3.7.2 was installed successfully
Beginning configure, build, and install of: CDT 8.0.1
cdt-master-8.0.1.zip
CDT 8.0.1 was installed successfully
Beginning configure, build, and install of: sqlite 3.6.23
tar xfm /home/vkaushik/3rdparty-base-1.30-x86_64.tar sqlite-3.6.23.tar.gz
move into extracted folder: /home/vkaushik/openclovis-safplus-sdk-6.0-202304131452/workspace
move into extracted folder: sqlite-3.6.23
```

16. Accept default to the prompts.

```
Installing SAFplus...
Starting IDE installation...
Linking Eclipse in /opt/clovis/sdk-6.0...
cp -rf /home/vkaushik/openclovis-safplus-sdk-6.0-202304131452/IDE /opt/clovis/sdk-6.0
rm -rf /opt/clovis/sdk-6.0/eclipse/plugins/*clovis*
cp -rl /opt/clovis/buildtools/local/eclipse /opt/clovis/sdk-6.0
sed -e '/-showsplash\|org.eclipse.platform/d' /opt/clovis/sdk-6.0/eclipse/eclipse.ini > /opt/clovis/s
rm /opt/clovis/sdk-6.0/eclipse/eclipse.ini
mv /opt/clovis/sdk-6.0/eclipse/eclipse_ini.tmp /opt/clovis/sdk-6.0/eclipse/eclipse.ini
mv -f /opt/clovis/sdk-6.0/IDE/plugins/* /opt/clovis/sdk-6.0/eclipse/plugins
rm -rf /opt/clovis/sdk-6.0/IDE/plugins
cp -rf /opt/clovis/sdk-6.0/IDE/scripts/config.ini /opt/clovis/sdk-6.0/eclipse/configuration
Copying documents...
Done.
Starting utilities installation...
Working root set to [/home/vkaushik], package root at [/opt/clovis/sdk-6.0]
List []
Build SAFplus libraries for the local machine and/or installed crossbuild toolchains ? <y|n> [y]:
Where to build ? [default: /opt/clovis/sdk-6.0/prebuild]:
The following installed build tool packages are found:
local
Select the crossbuild tool(s) to build from the above list, [Default: local]

/opt/clovis/sdk-6.0/src/SAFplus/configure --with-asp-build > build.log
```

17. After this it will start linking and compiling. This takes about 15 minutes (depending on your server). You will see a lot of messages scroll through. Here is one of the final prompts. Accept the defaults.



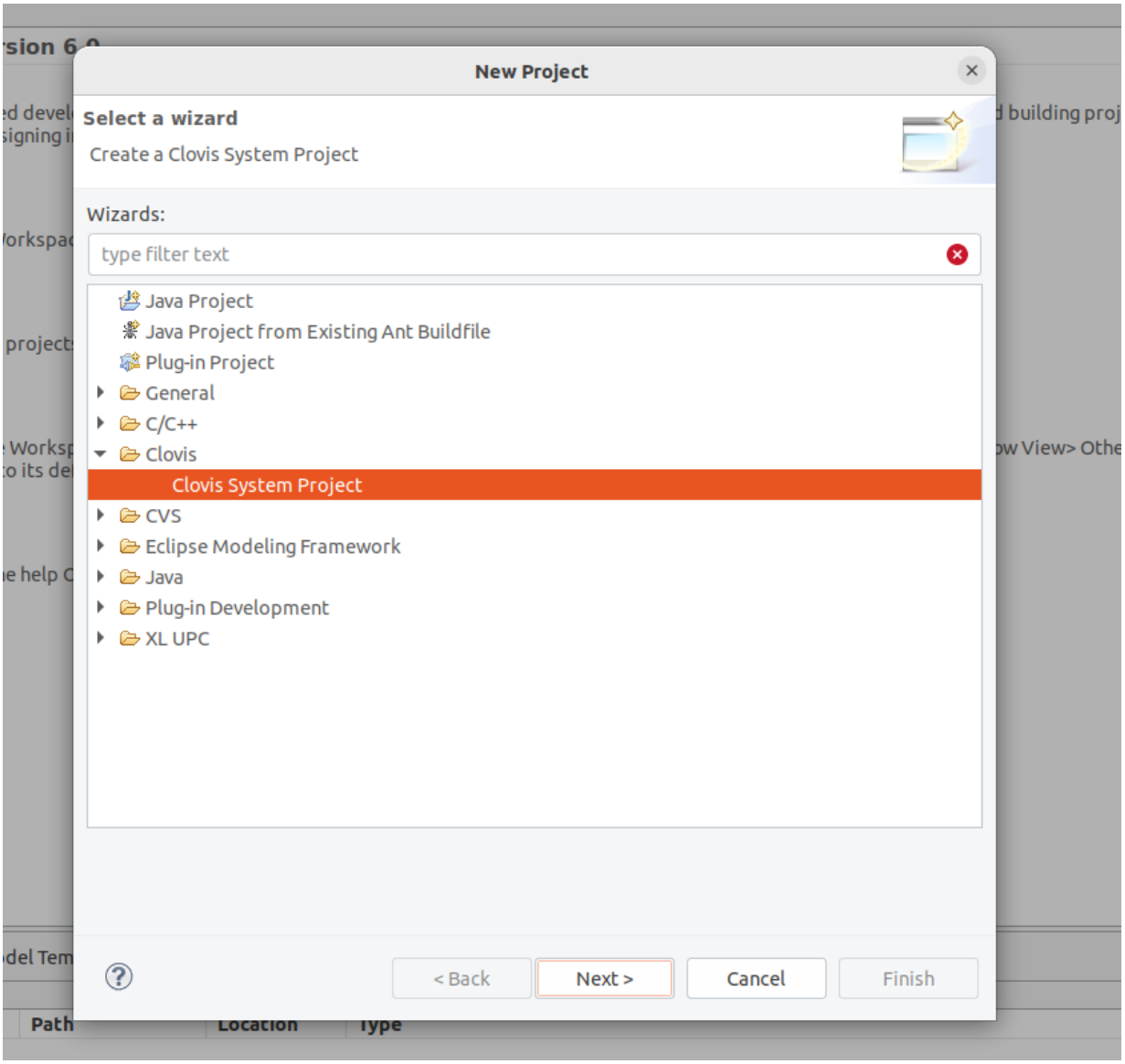
This completes the installation of the software on one of the nodes. Now we need to build an image and deploy it on one of the nodes.

Build Image

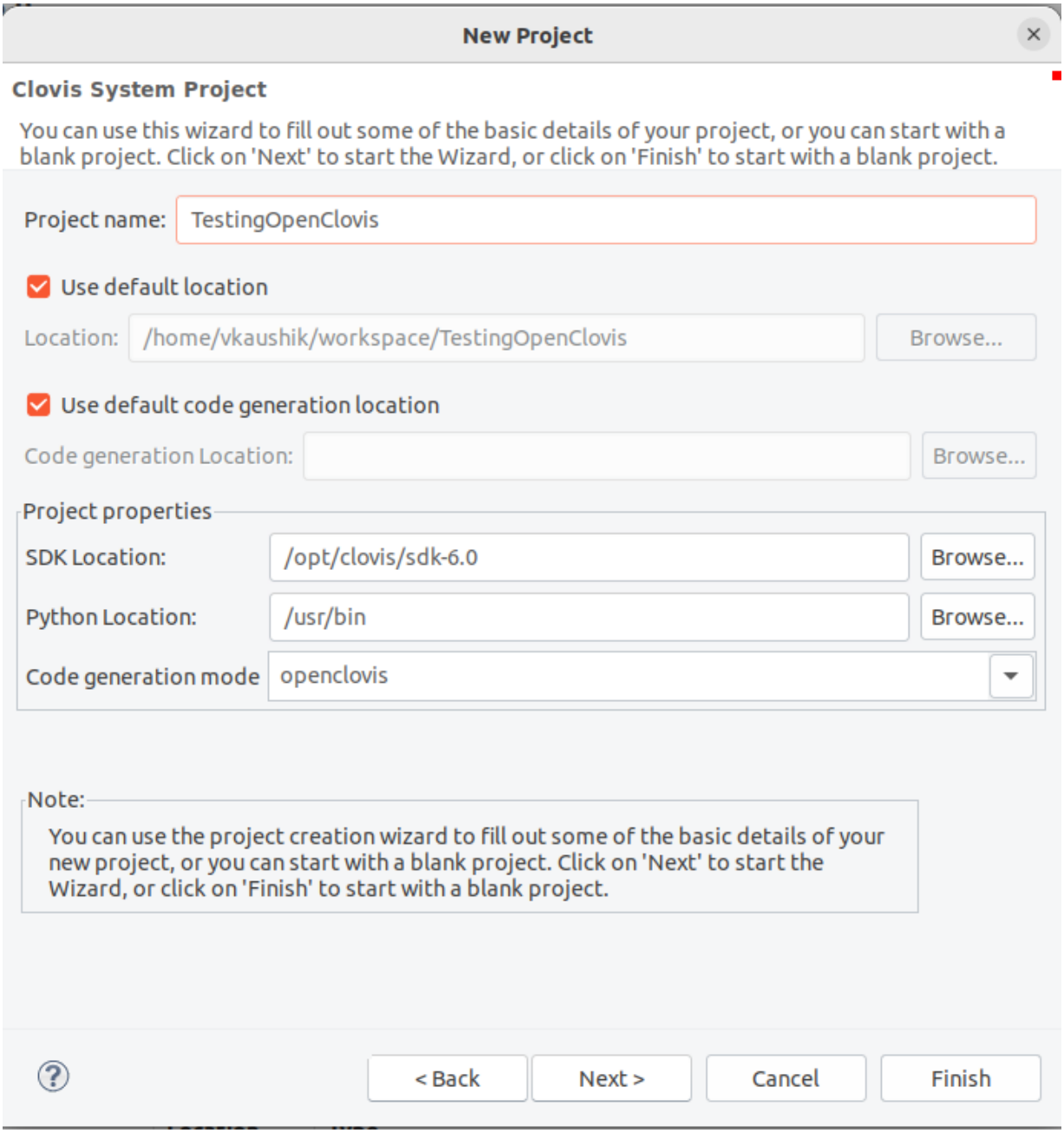
As an ordinary user, follow the following steps to build an image.

1. Run the command `cl-ide` from the command line. This will bring up the OpenClovis IDE (Eclipse).
2. Select the workspace directory you want to work with. Default is fine.
3. The OpenClovis IDE will open.
4. Create a new project of the type Clovis System Project.

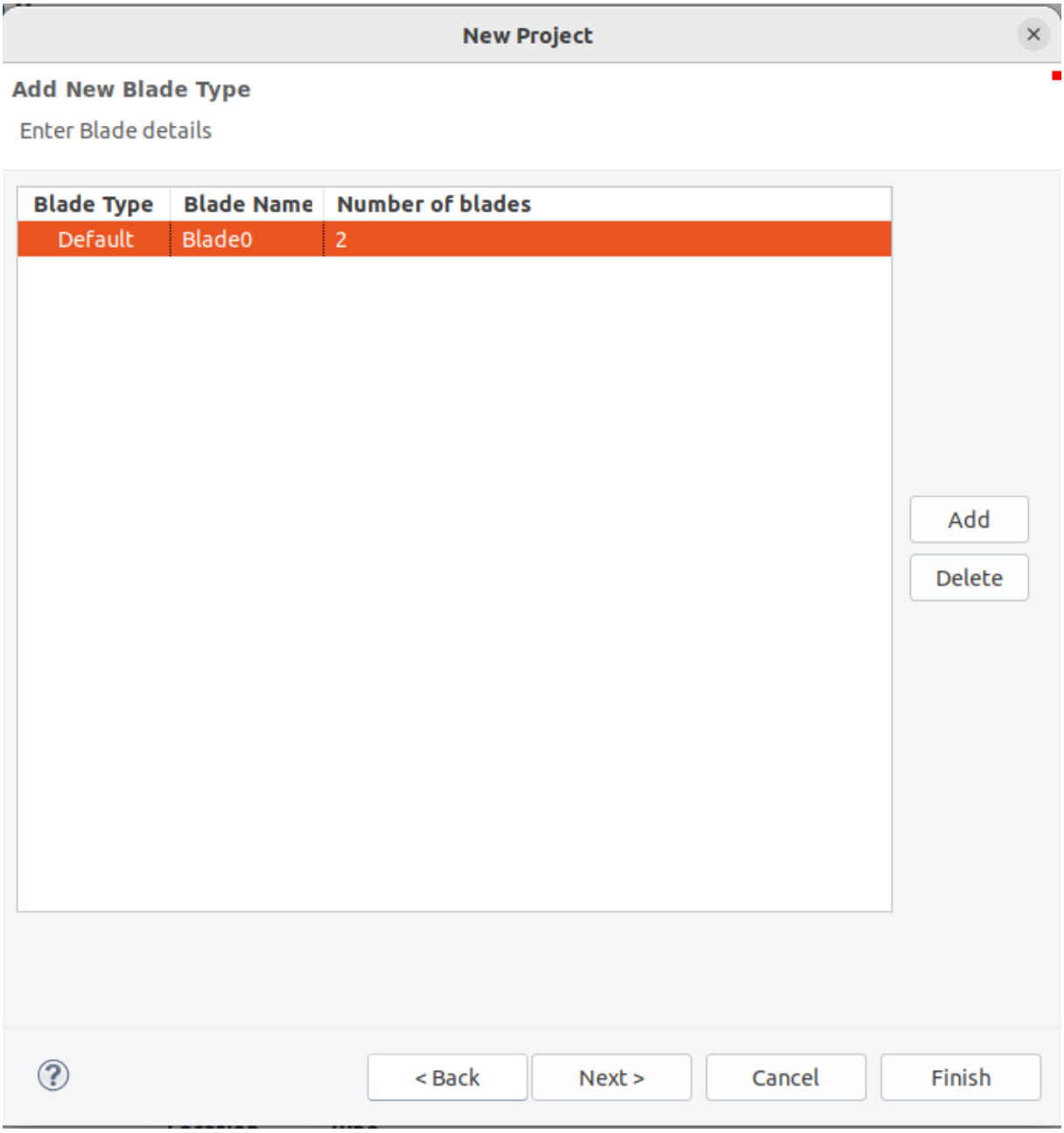
a. Go to `File -> New -> Project -> Clovis -> Clovis System Project` and select `Next`.



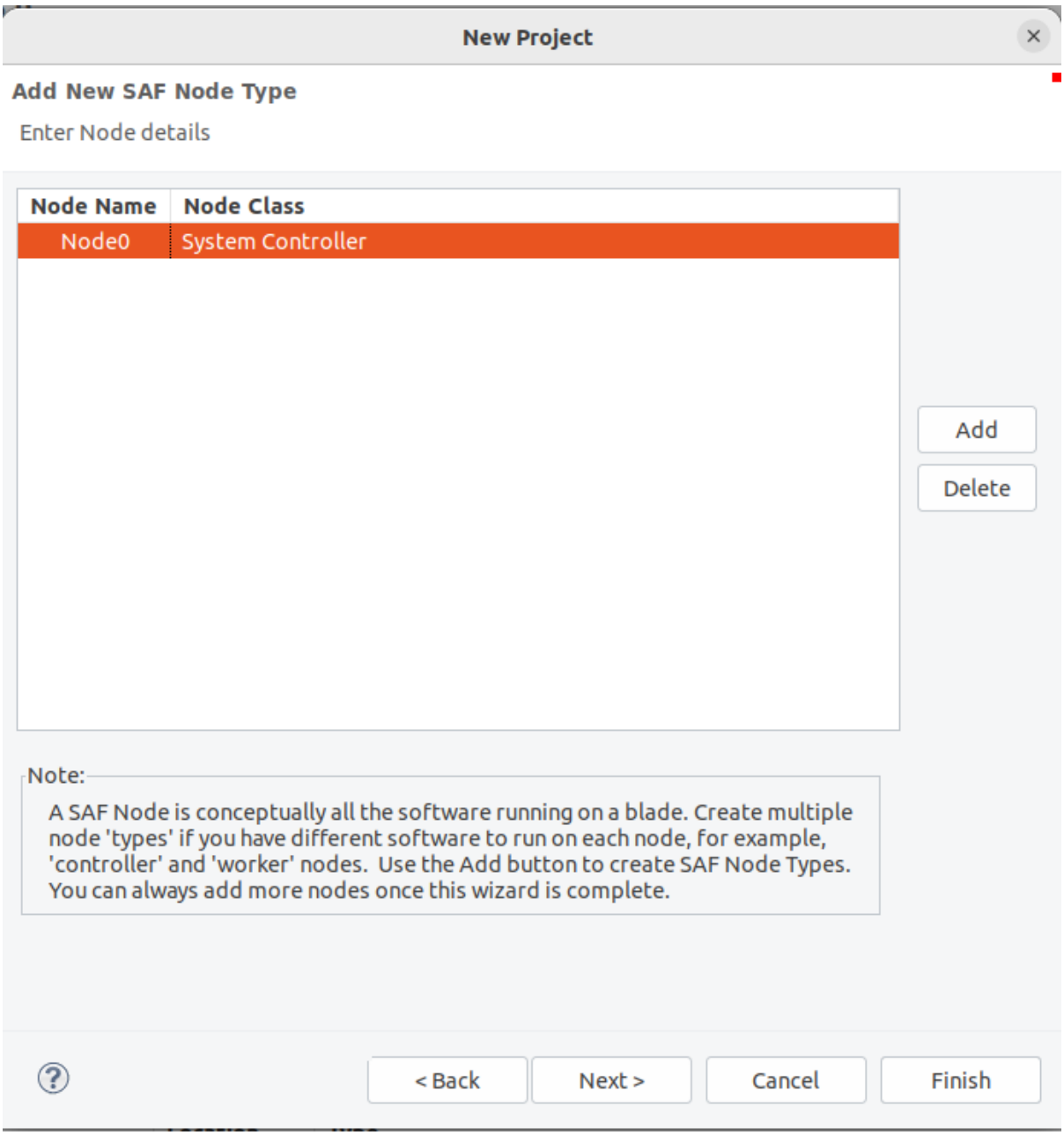
b. Type in the name of Project (*e.g.* `TestingOpenClovis`) and accept the rest as default and click `Next`.



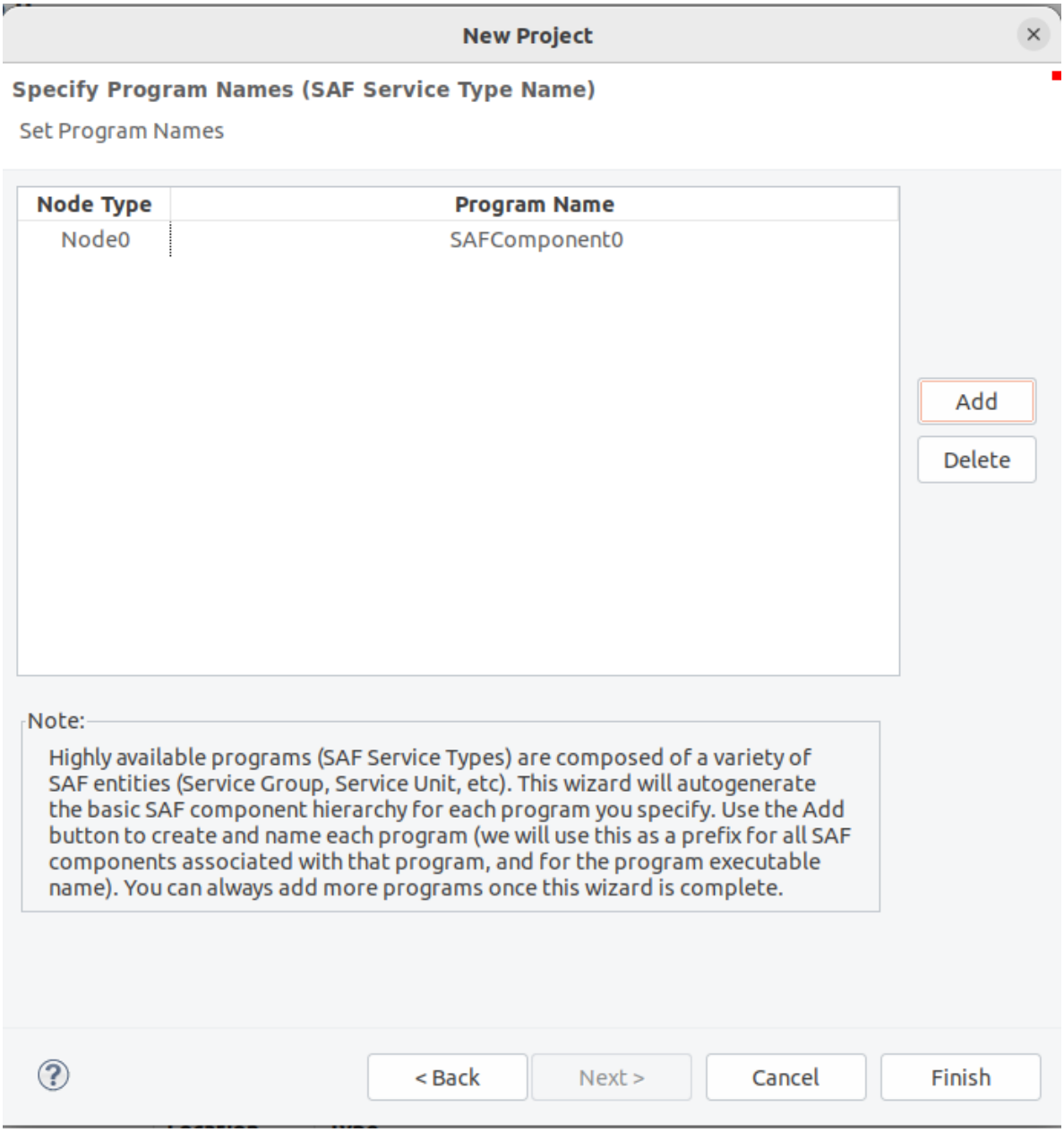
c. Add 2 blades of the type `Default` and click `Next`.



d. Create one node of the type `System Controller` and click `Next`.



e. Add `Program Name`. Use default settings and click on `Finish`.



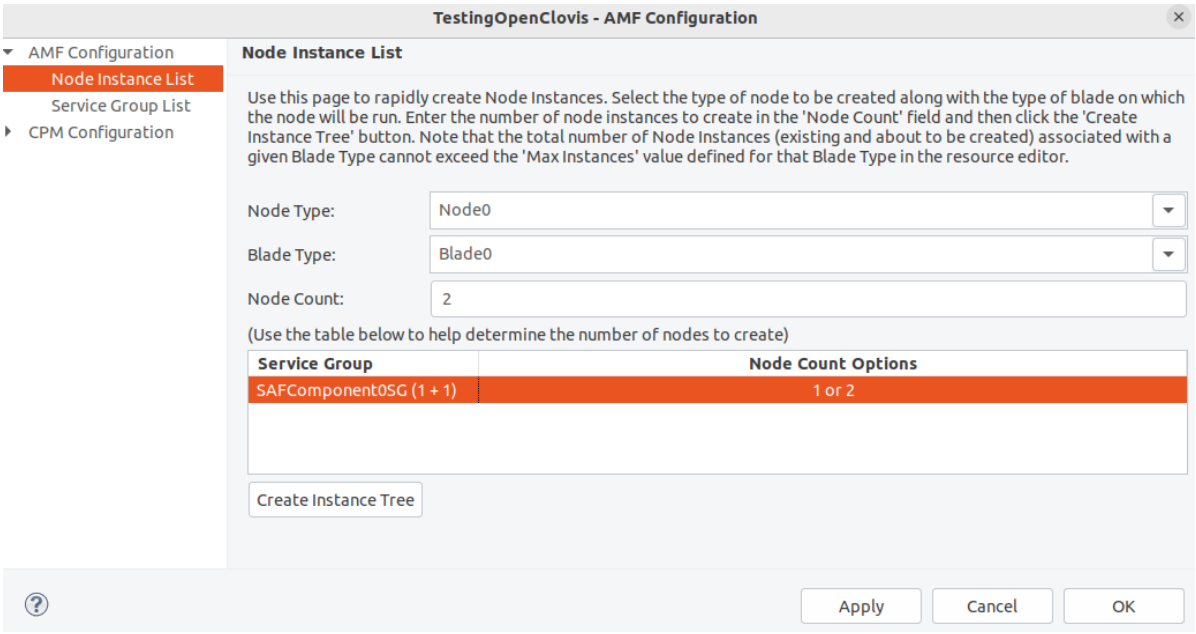
f. From the menu bar select `Clovis -> AMF Configuration -> Node Instance List`.

g. Select the value of `Node Type` as `Node0`.

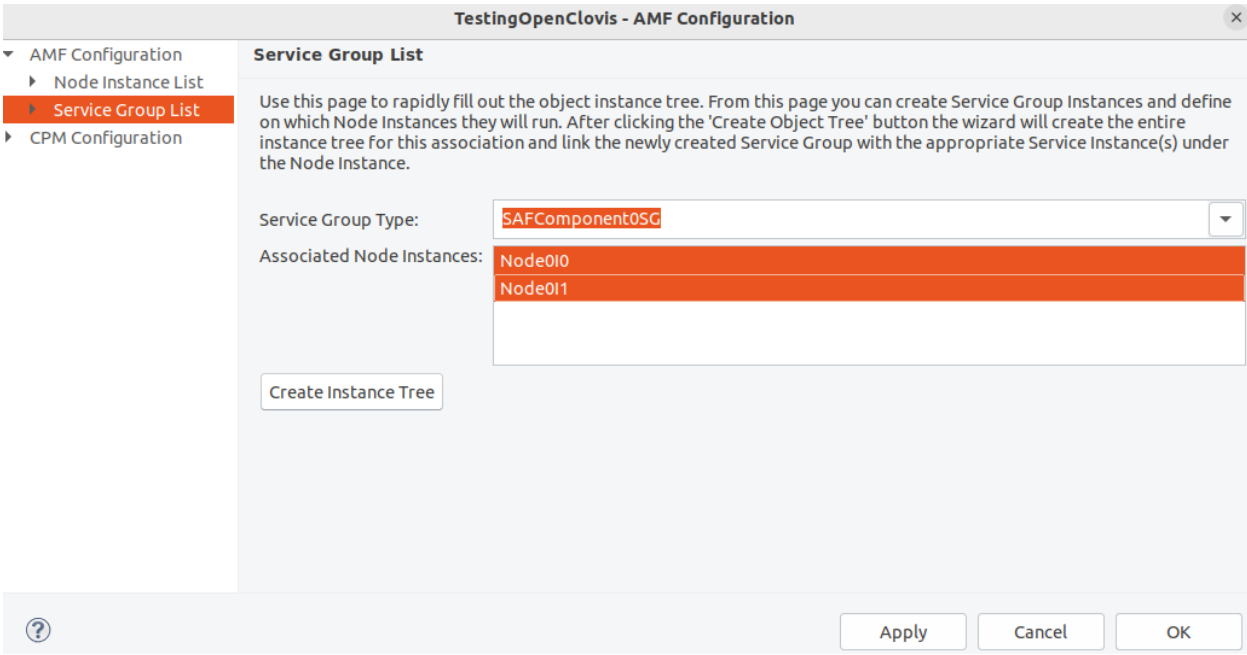
h. Select the value of `Blade Type` as `Blade0`.

i. Set the value of `Node Count` to `2`.

j. Click on the Service Group `SAFComponent0SG` and click on `Create Tree instance`.



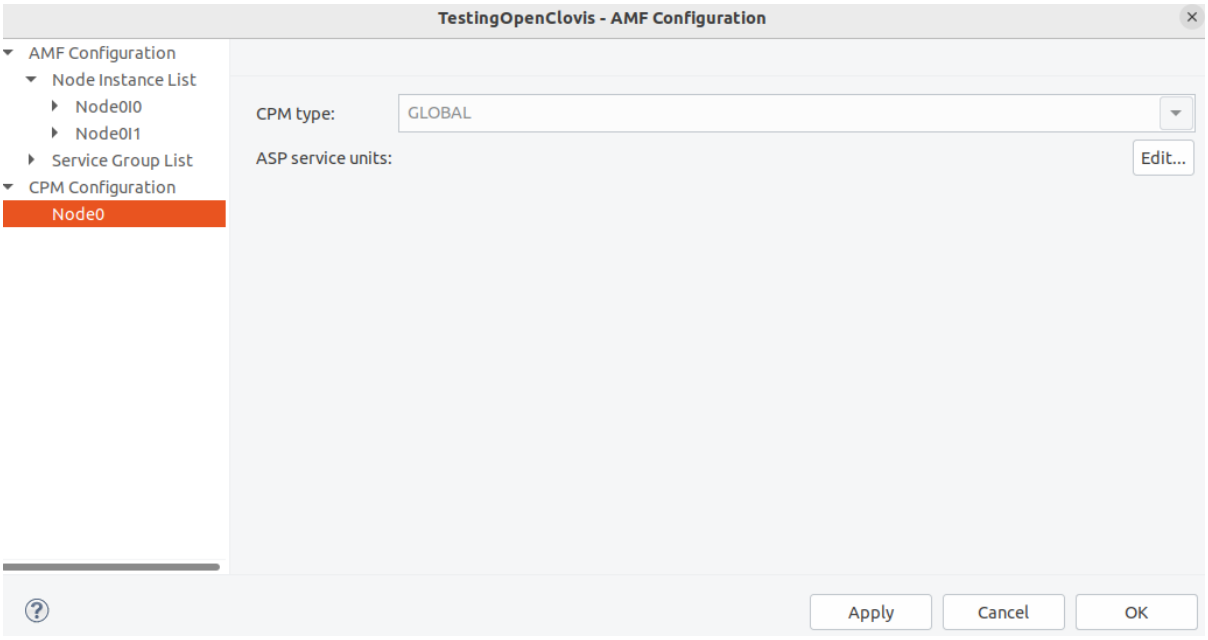
k. Click on the `Service Group List`. Set the value of `Service Group Type` to `SAFComponent0SG`. Select both the `Associated Node Instances` and click on `Create Instance Tree`.



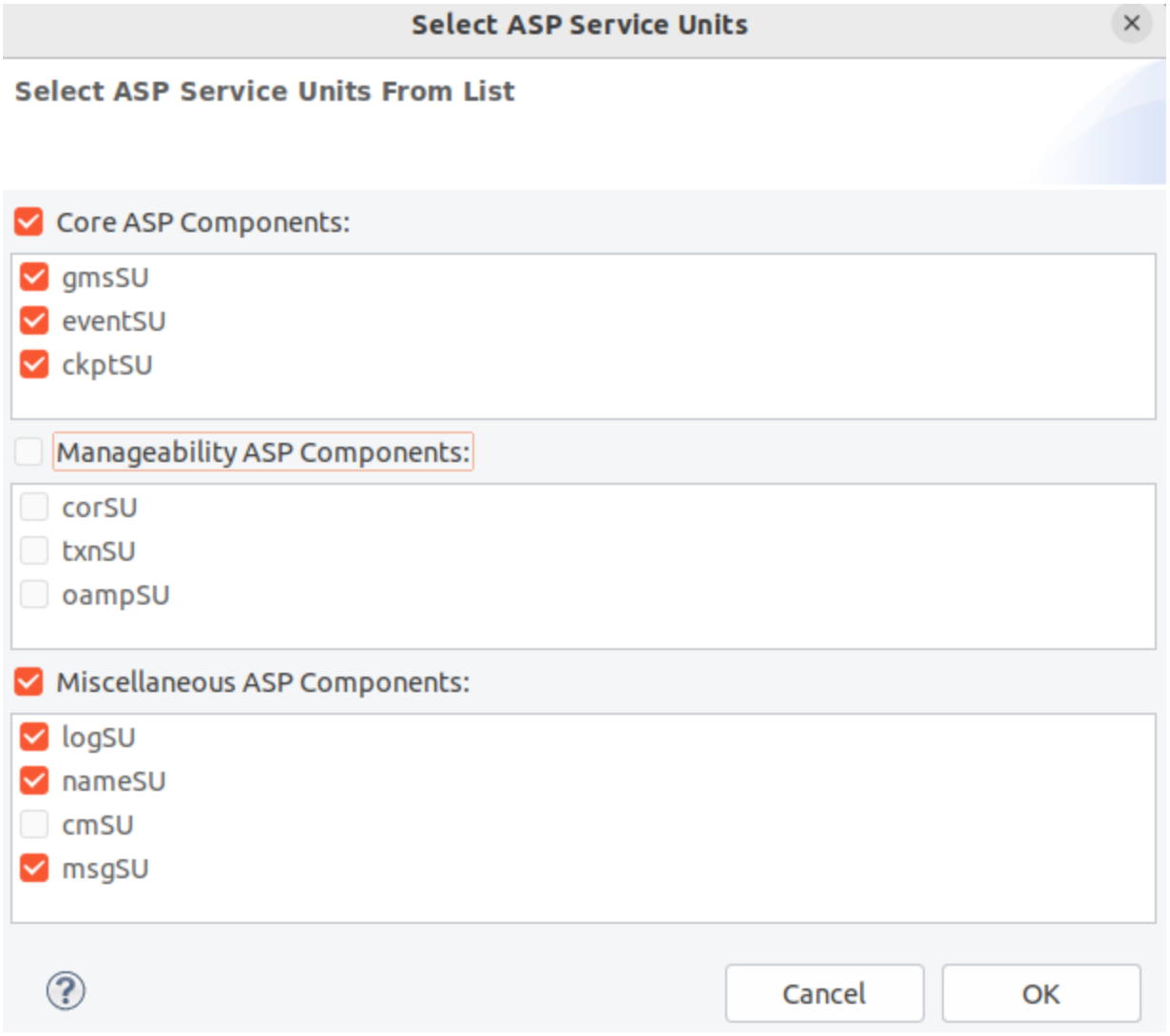
l. Click `OK`.

m. Go to `Clovis -> AMF Configuration -> CPM Configuration -> Node0`.

n. Click on `Edit` for `ASP Service units`.



o. Disable `Manageability ASP Components`

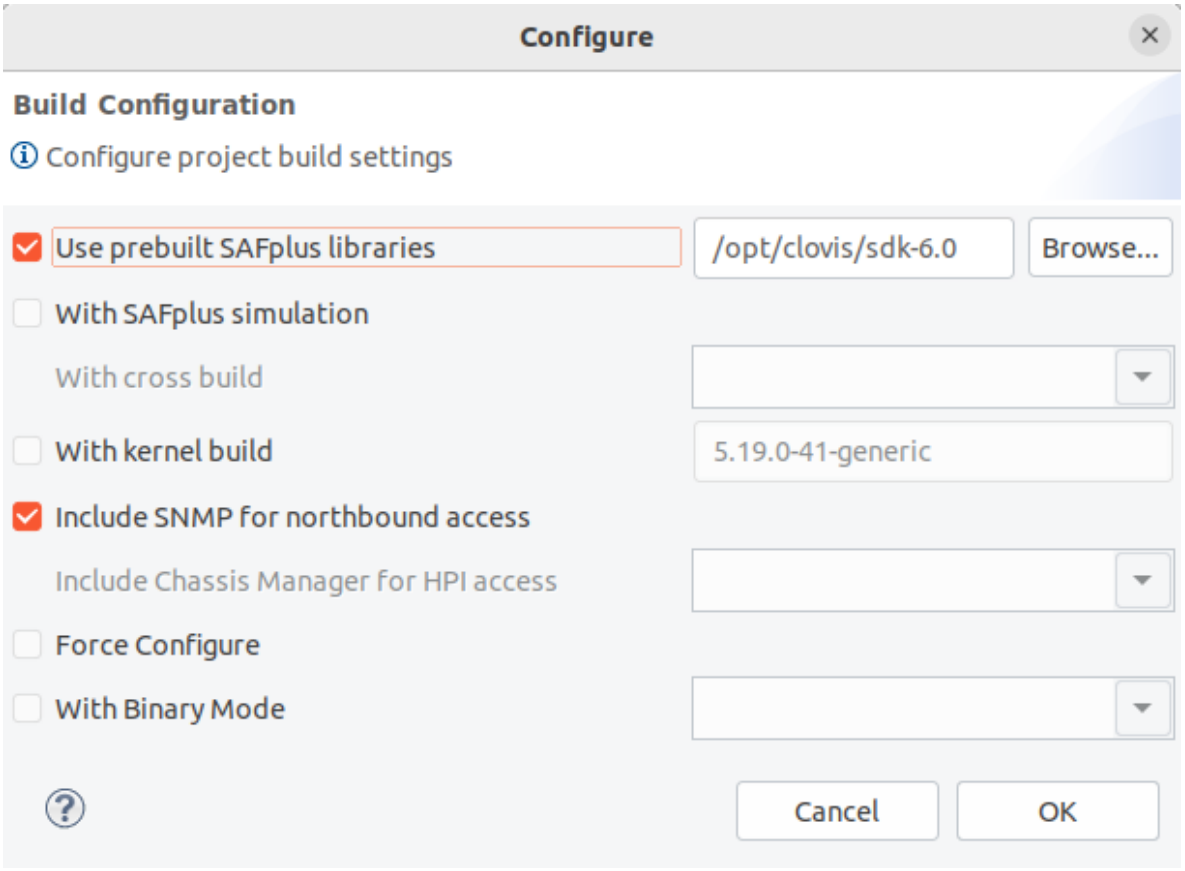


p. Click on `OK`.

q. Go to `Project -> Generate Source`.

r. Go to `Project -> Build Project`.

s. Check `prebuilt SAFSAFplus libraries`. The rest of the values can be default.

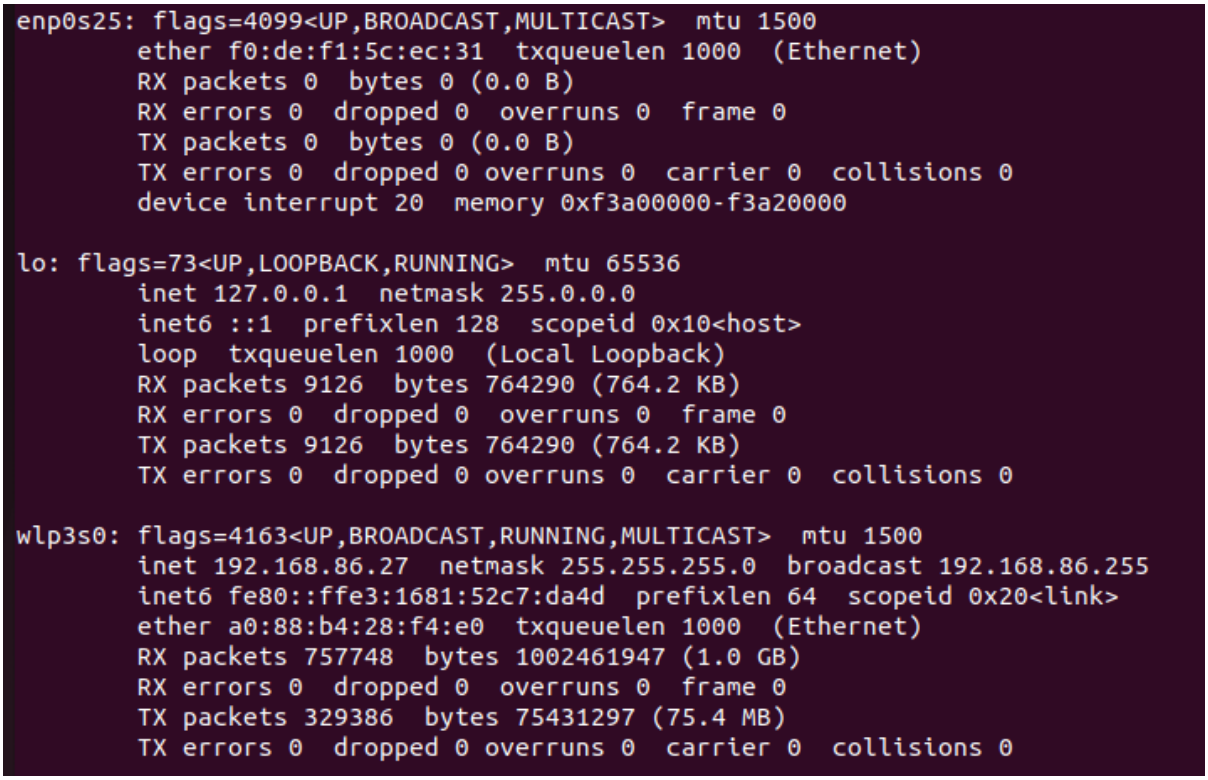


t. Click on `OK`.

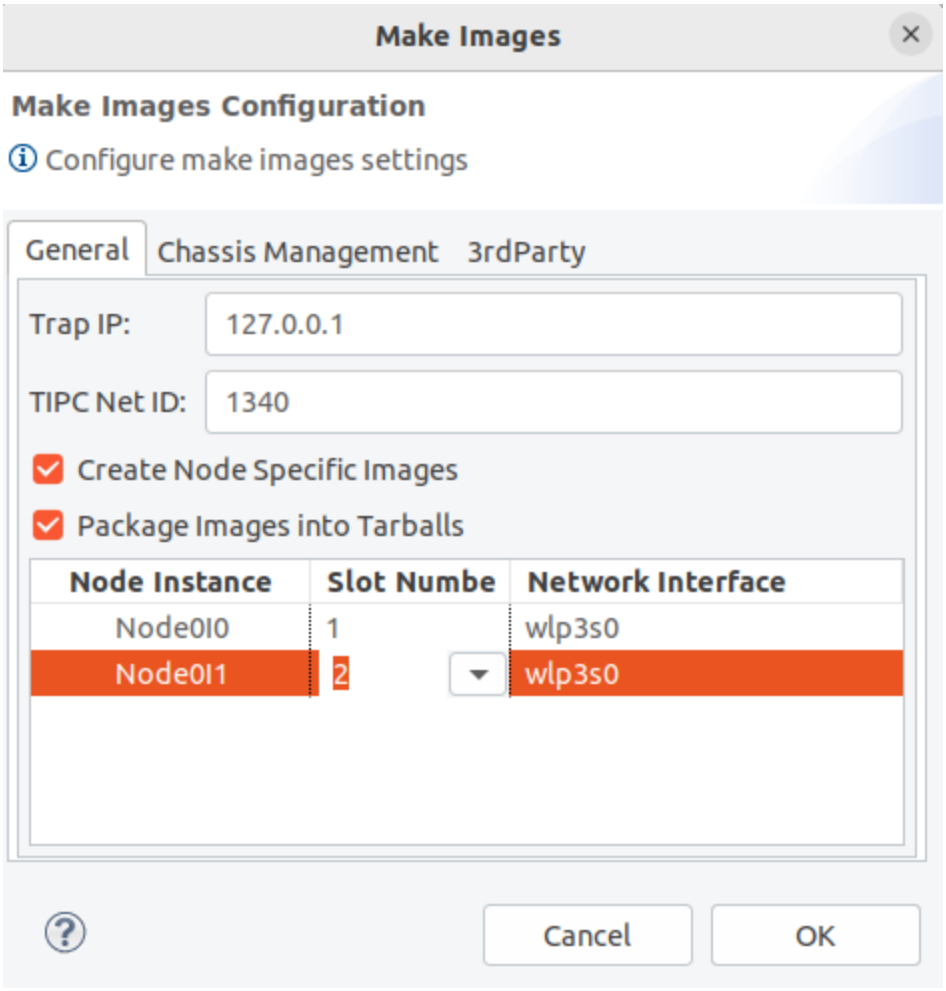
u. Select `Project -> Make Image(s).`

v. On the pop-up, the Network Interface values for both the nodes need to be plugged in. Run the following command from the command line on both the nodes and get the value of the network interface. Here is an example of the command

run on one of the nodes. You need to do the same for the other node.



w. Select the `Slot Number` as `1` and `2` respectively. Enter the values as shown and click on `OK`.



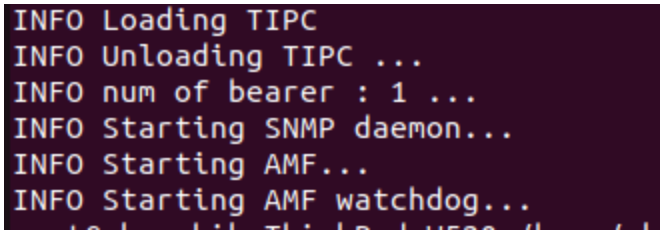
x. Images will be created under `$HOME/workspace/target/<Project Name>/images`.

Installing Images on Nodes

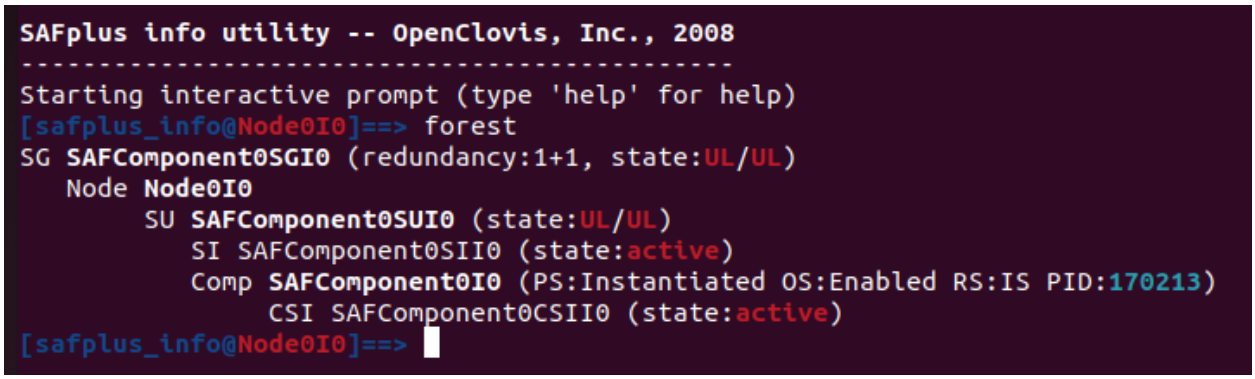
Images for both the nodes reside under `$HOME/workspace/target/<Project Name>/images` . Copy the file `$HOME/workspace/target/<Project Name>/images/Node0I1.tgz` to the other node.

Instructions for Node 1

1. The image for Node1 has already been installed in the directory `$HOME/workspace/target/<Project Name>/images/Node010`.
2. `cd $HOME/workspace/target/<Project Name>/images/Node0I1.`
3. `sudo su root`

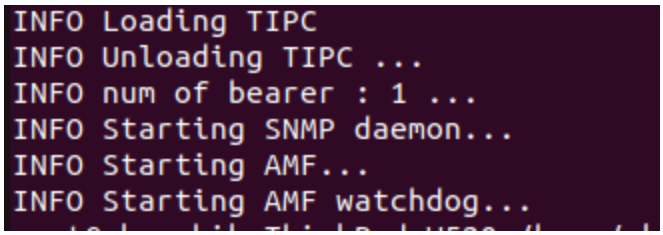
4. Edit `etc/asp.conf` file. Ensure the value of the attribute `LINK_NAME` is set to the network interface name that was obtained previously by running the `ifconfig` command. If not, modify accordingly.
5. `cd $HOME/workspace/target/<Project Name>/images/Node010/etc/init.d.`
6. `./safplus start`
7. You should see the following lines.
8. 

9. `cd $HOME/workspace/target/<Project Name>/images/Node010/bin.`
10. ./safplus_info
11. You should see this output on the screen.



Instructions for Node 2

1. Extract the copied image file under $HOME/OpenClovis.
2. `sudo su root`
3. Edit `etc/asp.conf` file. Ensure the value of the attribute `LINK_NAME` is set to the network interface name that was obtained previously by running the `ifconfig` command. If not, modify accordingly.
4. `cd $HOME/workspace/target/<Project Name>/images/Node010/etc/init.d.`
5. `./safplus start`
6. You should see the following lines.

7. 

8. `cd $HOME/workspace/target/<Project Name>/images/Node010/bin.`

Connectivity Between Nodes

If the images have been installed properly, you should be able to see both the nodes by running the following command from any of the nodes.

1. `cd $HOME/workspace/target/<Project Name>/images/Node010/bin`
2. `./safplus_info`
3. As seen below you should see both the nodes.

This is a good indication that both nodes are up and they can communicate with each other.

RISKS

- Not evaluated yet.

REFERENCES

- Not formalized yet.