

Controller 2.4.6 Linux installation cookbook

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Version: 0.2 alpha

Target audience: Anyone wishing to get SDN VAN controller running on Ubuntu-linux-14.04 as target platform for LAB environment.

WARNING#1: This guide is not to be used in the current form for production purposes for complete lack of security awareness or consideration used for this example installation.

WARNING#2: This is not in any way official support document of HP for HP SDN controller deployment, use this at your own risk. Official installation guide should be downloaded here :

<http://h20564.www2.hp.com/portal/site/hpsc/public/kb/docDisplay/?docId=c04495134>

ASSUMPTION is that all the licensing steps you are already a paying customer of HP or that you have a developers license via HP SDN Dev Center (or alternatively you are HP internal employee)

DOWNLOAD locations:

Controller:

<https://h10145.www1.hp.com/downloads/DownloadSoftware.aspx?SoftwareReleaseUid=11794&ProductNumber=J9863AAE&lang=&cc=&prodSeriesId=&OrderNumber=&PurchaseDate=>

NetProtector app (optional):

<https://h10145.www1.hp.com/downloads/DownloadSoftware.aspx?SoftwareReleaseUid=11508&ProductNumber=JL004AAE&lang=&cc=&prodSeriesId=&OrderNumber=&PurchaseDate=>

#STEP 1 Install base system

// For this guide, a Ubuntu-64bit-desktop 14.04 LTS was used of x64 system. This guide should be compatible with other debian-like systems (e.g. Ubuntu-server, but not yet tested).



// I have used image "ubuntu-14.04.1-desktop-amd64.iso"

ROOT password: "toor"

Additional user: "labuser" with password "labuser"

#STEP 2 Preparation

a) Install Java packaging system to convert Oracle packages to debian packages

//install some basic components needed

apt-get update && apt-get upgrade

```
apt-get install joe screen aptitude curl ntp openssh-server
```

//also update java with:

```
apt-get install openjdk-7-jre-headless postgresql postgresql-client iptables unzip curl
```

//make sure Java 7 is default java version with

```
update-java-alternatives -l
```

#STEP 3 Instal KeyStone server from Ubuntu cloud repository

install keystone by adding repository and do normal update and install of “keystone” package

```
apt-get install python-software-properties ubuntu-cloud-keyring
```

```
add-apt-repository \\\
```

```
"deb http://ubuntu-cloud.archive.canonical.com/ubuntu precise-updates/icehouse main"
```

```
apt-get update && apt-get install keystone
```

add this line to /etc/sysctl.conf

```
net.ipv4.ip_local_reserved_ports = 35357
```

for immediate effect (avoid reboot) command for that:

```
sysctl -w 'net.ipv4.ip_local_reserved_ports=35357'
```

#STEP 4 Configure basic user for keystone using the HPN provided script:

// This script was provided by HPN to install initial user “sdn” with password “skyline”, if you want, edit the script to change username/password. (fond made intentionally small to not break end of lines in word). PS: This is script is from the official install guide, not my work ;)

```
#!/bin/bash
#-----
# Setup default keystone environment for the SDN controller
# Create a tenant "sdn"
# Create a user "sdn" with password "skyline"
# Create a role "sdn-admin"
# Create a role "sdn-user"
# Associates the user "sdn" with the create roles in the tenant "sdn"
#-----
ADMIN_TOKEN="ADMIN"
IP="127.0.0.1"
PORT="35357"
TENANT="sdn"
USER_NAME="sdn"
PASSWORD="skyline"
echo "Configure keystone server at $IP with admin token $ADMIN_TOKEN"
# Create the tenant
tenant_json="{\"tenant\":{\"name\": \"$TENANT\"}}}"
tenant=$(curl --header "X-AUTH-Token:$ADMIN_TOKEN" --header "Content-Type:application/json" -kss --data-binary $tenant_json "http://$IP:$PORT/v2.0/tenants")
tenant_id=$(echo $tenant | sed 's/,.*id': "\[([0-9a-z]*)\",.*\]/')
# Create the user
user_json="{\"user\":{\"name\": \"$USER_NAME\", \"enabled\": true, \"password\": \"$PASSWORD\"}}}"
users=$(curl --header "X-AUTH-Token:$ADMIN_TOKEN" --header "Content-Type:application/json" -kss --data-binary $user_json "http://$IP:$PORT/v2.0/users")
user_id=$(echo $users | sed 's/,.*id': "\[([0-9a-z]*)\",.*\]/')
# Create the sdn-admin role
admin_role_json="{\"role\":{\"name\": \"sdn-admin\"}}}"
admin_role=$(curl --header "X-AUTH-Token:$ADMIN_TOKEN" --header "Content-Type:application/json" -kss --data-binary $admin_role_json "http://$IP:$PORT/v2.0/OS-KSADM/roles")
admin_role_id=$(echo $admin_role | sed 's/,.*id': "\[([0-9a-z]*)\",.*\]/')
# Create the sdn-user role
user_role_json="{\"role\":{\"name\": \"sdn-user\"}}}"
user_role=$(curl --header "X-AUTH-Token:$ADMIN_TOKEN" --header "Content-Type:application/json" -kss --data-binary $user_role_json "http://$IP:$PORT/v2.0/OS-KSADM/roles")
user_role_id=$(echo $user_role | sed 's/,.*id': "\[([0-9a-z]*)\",.*\]/')
# Associate user with admin role
admin_role_assoc=$(curl --header "X-AUTH-Token:$ADMIN_TOKEN" -kss -X PUT "http://$IP:$PORT/v2.0/tenants/$tenant_id/users/$user_id/roles/OS-KSADM/$admin_role_id")
# Associate user with user role
user_role_assoc=$(curl --header "X-AUTH-Token:$ADMIN_TOKEN" -kss -X PUT "http://$IP:$PORT/v2.0/tenants/$tenant_id/users/$user_id/roles/OS-KSADM/$user_role_id")
echo "Keystone configuration complete"
```

// because we installed icehouse version of keystone that by default uses PKI tokens,

// we must configure Keystone to use UUID for compatibility to SDN VAN controller

// Edit /etc/keystone/keystone.conf and add this line in the [token] section:

provider=keystone.token.providers.uuid.Provider

#STEP 5 First time controller installation

//install using package system

```
dpkg --unpack hp-sdn-ctl_2.4.x.yyyy_amd64.deb
apt-get install -f
```



Verification

dpkg -l hp-sdn-ctl

```
Desired=Unknown/Install/Remove/Purge/Hold
| Status=Not/Inst/Conf-files/Unpacked/half-conf/Half-inst/trig-await/Trig-pend
|/ Err?=(none)/Reinst-required (Status,Err: uppercase=bad)
||/ Name                Version             Architecture        Description
++-----+-----+-----+-----+
ii  hp-sdn-ctl            2.3.5.6505         amd64               HP VAN SDN Controller
```

service sdnc status

sdnc start/running, process 7302

service sdn status

sdnc start/running, process 7304

#STEP 7 Login to the WEB GUI

The WebGUI is using the following URL: [https:// <controller IP>:8443/sdn/ui/](https://<controller IP>:8443/sdn/ui/)

Default credentials are : sdn/skyline

API: <https://<controller IP>:8443/api/>

#STEP 8 licenses

Go to license acquisition portal

<https://hpn-app.houston.hp.com/LicenseAcquisition/Default.aspx>

➔ Generate registration ID and search for developer “dev-HP” license for **J9863AAE**

Then take the registration ID and go to My HP networking

<https://h10145.www1.hp.com/license/GenerateLicense.aspx?smp=1>

Go to “My licenses” enter the registration ID

Also from the controller take the INSTALL ID via GUI:

General / Licenses - HP VA... x +

https://192.168.10.147:8443/sdn/ui/app/index#licenses

hp HP VAN SDN Controller ▾

▾ General

- Alerts
- Applications
- Configurations
- Audit Log
- Licenses**
- Support Logs

- OpenFlow Monitor
- OpenFlow Topology
- OpenFlow Trace

- OpenFlow Classes
- Packet Listeners

General / Licenses

Refresh | Add Enter License

Install ID: 4255131756697

Serial#	Product
---------	---------

Enter the INSTALL ID To the new registration ID to get a license CODE.

Then enter the license key to the controller via Licenses tab and “add” button. Example of such key:

Invalid key example: AEFD2KZADJACI-XXXXXXXXXX-XXXXXXXXXX-RCUEXMXAJHNDQ

#step 9, install NetProtector:

The screenshot shows the HP VAN SDN Controller web interface. The main content area displays a table of applications under the 'General / Applications' section. The table has columns for 'Name' and 'Version'. The applications listed are Path Diagnostics (2.4.6), Link Manager (2.4.6), Node Manager (2.4.6), OpenFlow Link Discovery (2.4.6), OpenFlow Node Discovery (2.4.6), Path Daemon, Topology Manager, and Topology Viewer. Below this table is the 'AppStore - Purchased Applications' section, which is currently empty. A 'New Application' dialog box is open in the foreground. It has a title bar 'New Application' and a text input field containing 'com.hp.sdn.app.networkprotector_v1.1.15'. To the right of the input field is a 'Browse' button. Below the input field is a 'Completed' button. To the right of the 'Completed' button is an 'Upload' button. Below these buttons are three fields: 'Name: Network Protector', 'Version: 1.1.15.1443', and 'ID: com.hp.sdn.app.networkprotector'. Below these fields is a 'Deploy' button. At the bottom right of the dialog box is a 'Cancel' button. Red circles and arrows highlight the 'Browse', 'Upload', and 'Deploy' buttons.

Then follow the same process to license the NetProtector via license acquisition portal with JL004AAE

LOGIN:

<https://<controller IP>:8443/networkprotector/ui/>

install check : # **service sentunneId status**

**IF SERVICE unavailable” HP Network Protector Service Unavailable“,
check Cassandra database error:**

`/opt/sdn/cassandra/bin/caServer.sh status`

And worst case restart

`/opt/sdn/cassandra/bin/caServer.sh restart`

Optional, if you want a license for Repundation database product ID is JL005AAE, but this is a commercial license.