OFERTIE Southampton Testbed Island

David R Newman

February 11, 2014

1 Recent News

- 14th January 2014 - Equipment racked in server room
- 1st February 2014 - Servers installed with Debian Wheezy and partial installed with OCF components. Control switch (Netgear) installed and local network configured.

2 Data Summary

Location: Building 32, University of Southampton, Southampton, United Kingdom

IP range ctl net: 10.216.96.0/23

Island UI: https://lear.ecs.soton.ac.uk/

OpenFlow Version: 1.3 (defacto 1.0 due to lack of FlowVisor support)

Contact person: David R Newman <drn@ecs.soton.ac.uk>

Documentation contact person: David R Newman <drn@ecs.soton.ac.uk>

Times allowed for experiments: 24 hours, 7 days a week

Name	Model	Datapath ID	Status
HP1	J9276A HP 2920-24G	TBD	Available soon
HP2	J9276A HP 2920-24G	TBD	Available soon
HP3	J9276A HP 2920-24G	TBD	Available soon
HP4	J9276A HP 2920-24G	TBD	Available soon

Table 1: Inventory of OpenFlow switches in the testbed

Model	Host name	Operating System	RAM	Duties
Dell PowerEdge R520	lear	Debian Wheezy (7.03) - Linux kernel 3.2	8GB	Control Framework, Flowvisor, VPN tunnel
Dell PowerEdge R520	goneril	Debian Wheezy (7.03) - Linux kernel 3.2	16GB	XEN Server
Dell PowerEdge R520	regan	Debian Wheezy (7.03) - Linux kernel 3.2	16GB	XEN Server
Dell ?	cordelia	Debian Wheezy (7.03) - Linux kernel 3.2	6GB	XEN Server

Table 2: Inventory of server machines in the testbed

3 Overview

User Control Network (Ctl)		
Name	**IP**	**Status**
lear (CTLS)	10.216.96.1	Available soon
lear (Flowvisor)	10.216.96.2	Available soon
lear (Expedient)	10.216.96.3	Available soon
goneril (VMS1)	10.216.96.20-.97.254	Available soon
regan (VMS2)	10.216.96.20-.97.254	Available soon
cordelia (VMS3)	10.216.96.20-.97.254	Pending

Table 3: IP Table

Experimental Network (OF)													
Switch/Port	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**...**	**13**	**14**	**15**	**Uplink**
HP1						HP2	HP3	HP4		VMS1	VMS2	VMS3	
HP2					HP1		HP3	HP4		VMS1	VMS2	VMS3	
HP3					HP1	HP2		HP4		VMS1	VMS2	VMS3	
HP4					HP1	HP2	HP3			VMS1	VMS2	VMS3	
Netgear		VMS1	VMS2	VMS3	HP1	HP2	HP3	HP4					CTLS

Table 4: Patch Table

4 Setup Details

4.1 XEN Server

XEN Server was installed on the machines named: *goneril* and *regan*. Following the instructions at `https://github.com/fp7-ofelia/ocf/wiki/XEN-server-configuration#wiki-etcxenscriptsnetwork-multi-bridge-vlan` a few amendments were required to install on Debian Wheezy (7.0.3) rather than Debian Squeeze (6.0).

1. *network-bridge-vlan* needs to be edited where it calls the function *setup_bridge_port*, this needs to be changed to *setup_physical_bridge_port*.

2. For step 8 in the instructions form the URL above, the file that needs to be edited is */etc/default/xendomains* rather than */etc/defaults/domains*.

4.2 Expedient

Expedient was installed on the machine named *lear*. Following the instructions at `https://github.com/fp7-ofelia/ocf/wiki/Installation\%20manual`, a number of amendments are required to install on Debian Wheezy (7.0.3) rather than Debian Squeeze (6.0) and setup as a standalone testbed rather than being part of the OFELIA network.

To install Expedient on Debian Wheezy, the python-django-extensions package needs to be installed from source using the following steps because it is not in the Wheezy package tree:

```
apt-get install debhelper python-support python-django autotools-dev fakeroot dh-make build-essential
mkdir python-django-extensions
cd python-django-extensions
wget https://launchpad.net/debian/+archive/primary/+files/python-django-extensions_0.6%2Bgit201107051902-1.dsc
wget https://launchpad.net/debian/+archive/primary/+files/python-django-extensions_0.6%2Bgit201107051902.orig.tar.gz
wget https://launchpad.net/debian/+archive/primary/+files/python-django-extensions_0.6%2Bgit201107051902-1.debian.tar.gz
dpkg-source -x python-django-extensions_0.6+git201107051902-1.dsc
dpkg-buildpackage
dpkg -i python-django-extensions_0.6+git201107051902-1_all.deb
```

The configuration file for Expedient needs to be significantly changed to work for a standalone testbed. Appendix A shows the Expedient config file used.

A   Expedient Config