

OpenFlow is *not* dead

SDN Demo using Faucet controller

CostiSer.Ro

*Prepared for INOG::B (07 Mar 2017)
Costi Serban (costi@costiser.ro)*

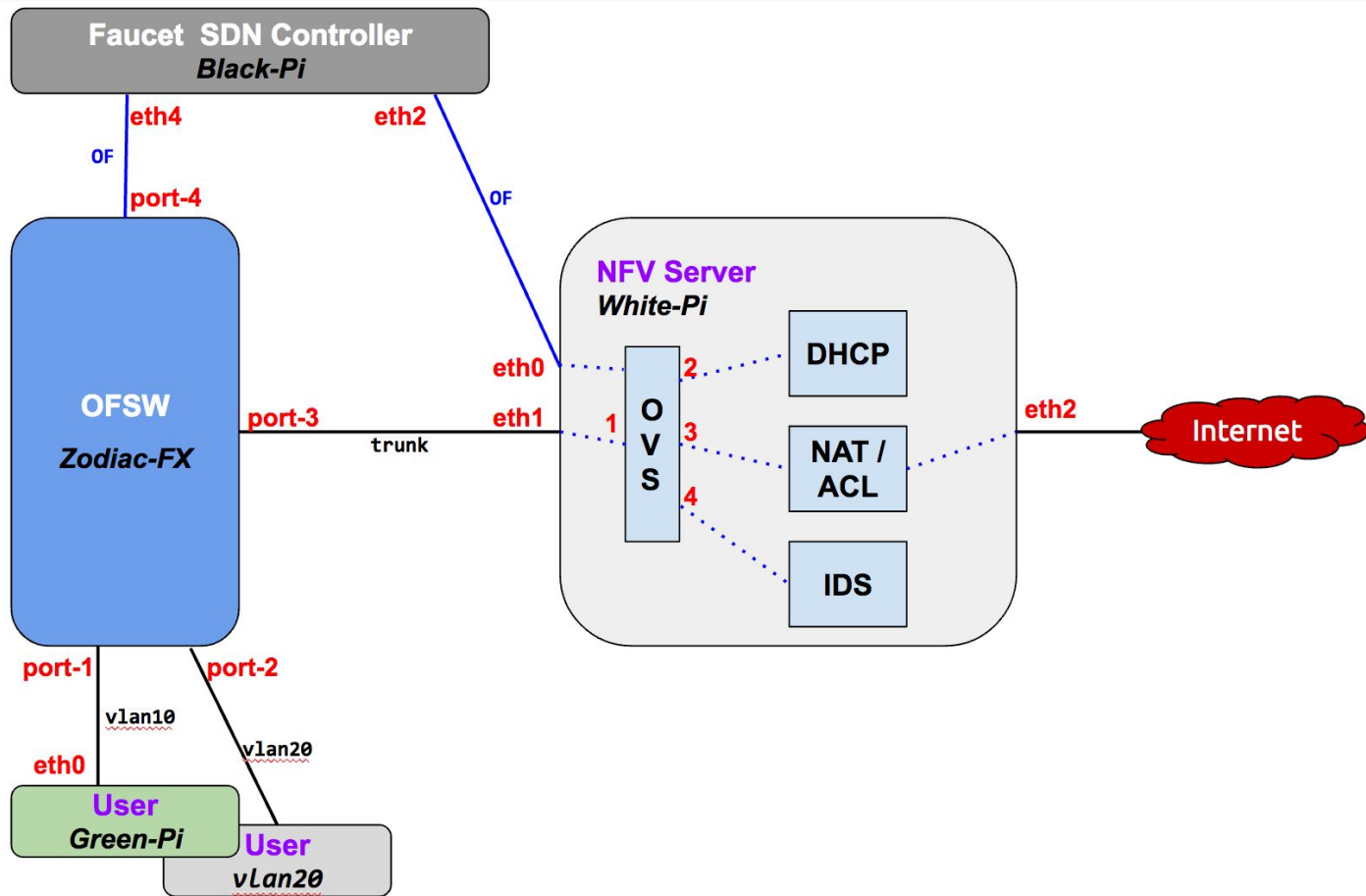
Faucet Introduction

- Open Source OpenFlow v1.3 Switch
 - Based on RYU framework
- Networking features
 - *Switching*: VLANs, MAC learning, ACLs, configurable flooding modes
 - *Routing*: BGP, static routing, ACLs,
 - *Other*: port mirroring, PBR, monitoring & statistics (with gauge)
- Software engineering principles
 - Written in Python (PEP8 style)
 - Comprehensive test suite (run code against virtual network topologies)
- Switches support
 - Hardware switches: Allied Telesis, NoviFlow, HP Enterprise/Aruba, Zodiac FX
 - Software switches: Open vSwitch, Lagopus

What is the target of this Demo ?

- Use an SDN Controller to manage both a physical and a virtual switch
- Use OpenFlow as the southbound protocol - OF 1.3 Multi-table Support
- Leverage Linux to offload different functions to virtual linux containers (NFV)
- Demonstrate some of Faucet's features such as PBR, Port Mirroring, ACL ...
- Pre-production end-to-end testing on virtual topologies

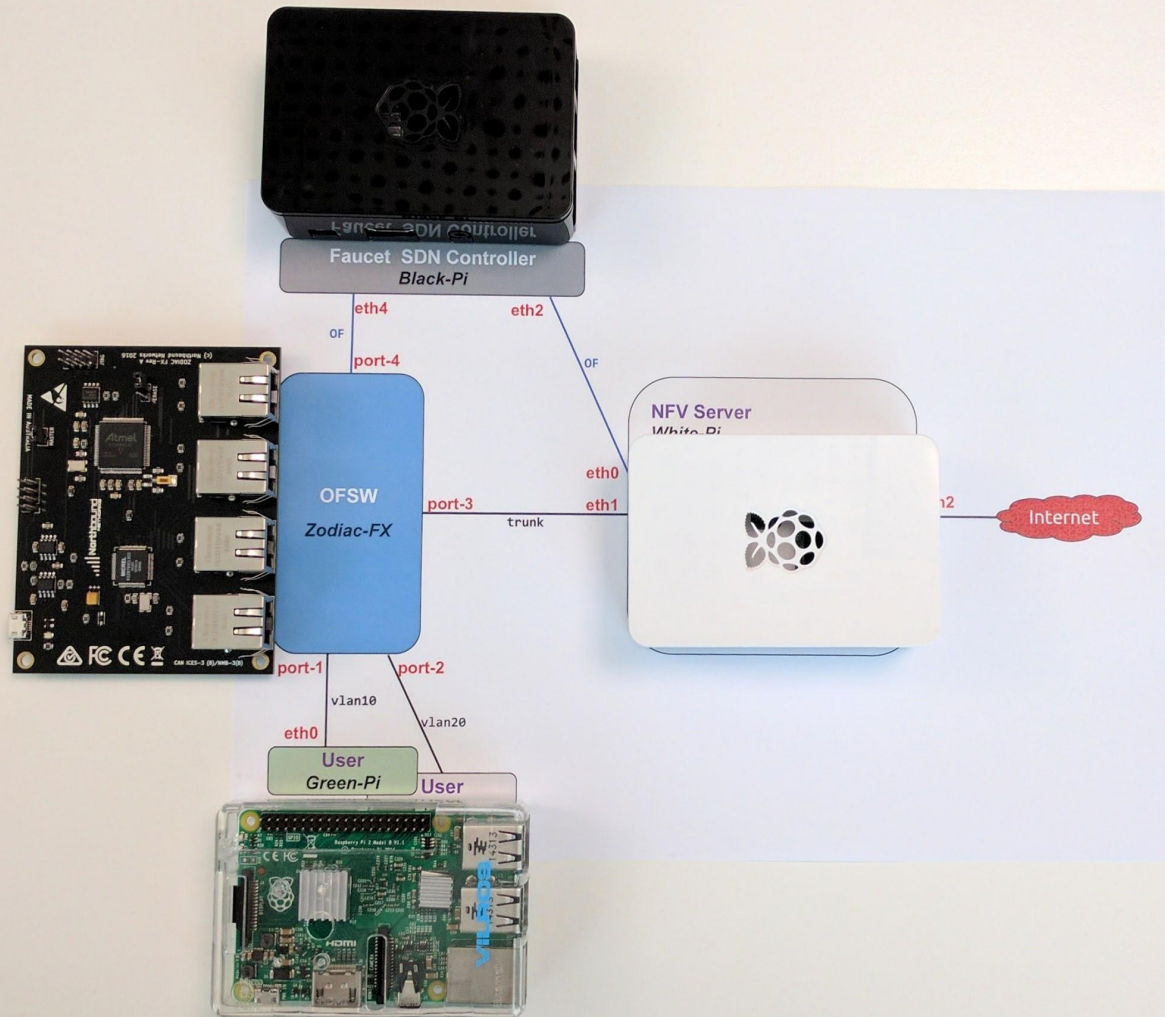
Faucet SDN - Demo



Faucet SDN

*Devices used
for the Demo:*

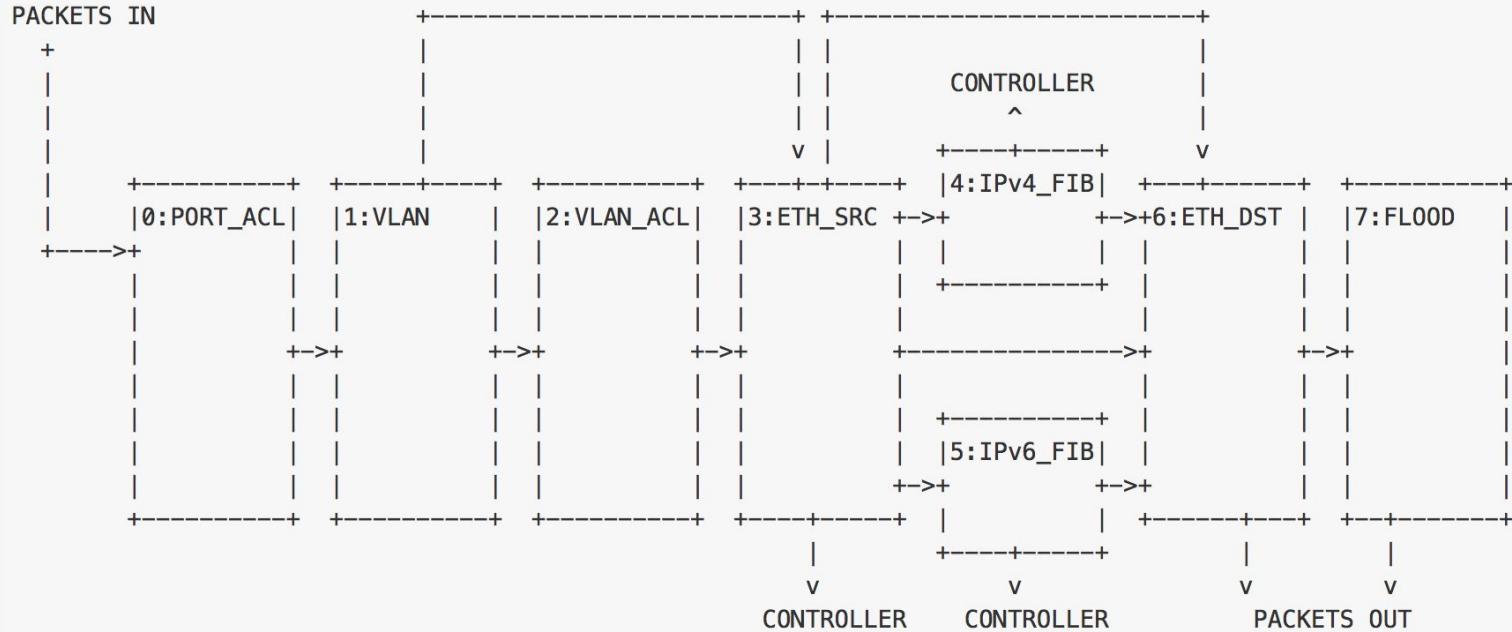
- 3 Raspberry Pi's
- 1 Zodiac FX sw



faucet.yaml

```
version: 2
vlans:
  10:
    name: "lab-10"
    unicast_flood: True
    max_hosts: 3
  20:
    name: "lab-20"
    unicast_flood: False
  999:
    name: "IDS"
    unicast_flood: False
acls:
  99:
    - rule:
        dl_type: 0x800
        nw_proto: 17
        tp_src: 68
        tp_dst: 67
        actions:
          allow: 1
          output:
            port: 2
    - rule:
        actions:
          allow: 1
          mirror: 4
  98:
    - rule:
        actions:
          allow: 1
          mirror: 4
dps:
  zodiac-sw:
    dp_id: 0x011111
    hardware: "ZodiacFX"
    interfaces:
      1:
        native_vlan: 10
      2:
        native_vlan: 10
      3:
        native_vlan: 10
  ovs-sw:
    dp_id: 0x01
    hardware: "Open vSwitch"
    interfaces:
      1:
        native_vlan: 10
        acl_in: 99
      2:
        native_vlan: 10
      3:
        native_vlan: 10
        acl_in: 98
      4:
        native_vlan: 999
```

Faucet's Pipeline



More Info

- Today's DEMO step-by-step:

<http://costiser.ro/2017/03/07/sdn-lesson-2-introducing-faucet-as-an-openflow-controller>

[/](#)

- REANNZ Github - <https://github.com/reannz/faucet>
- Faucet Blog - <https://faucet-sdn.blogspot.co.nz>