

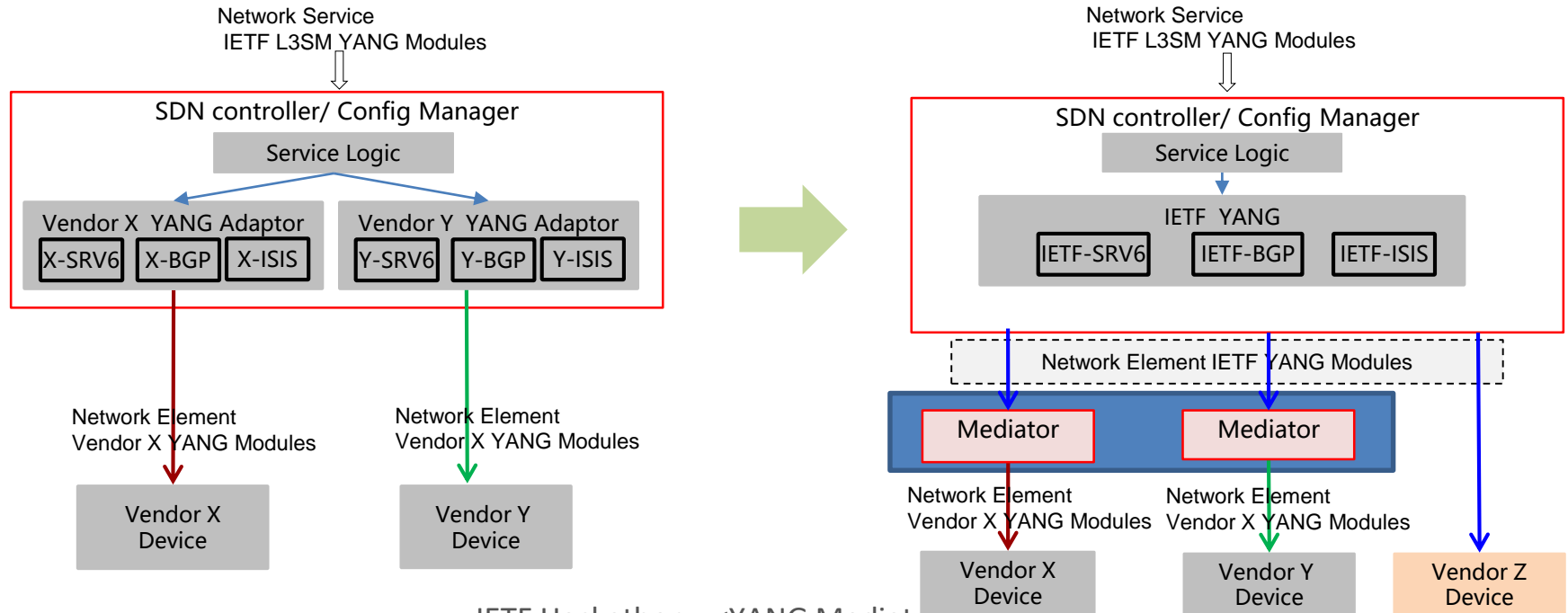
SRv6 VPN YANG Mediator Hackathon

IETF 106
Nov. 16-17, 2019
Singapore



Hackathon Plan

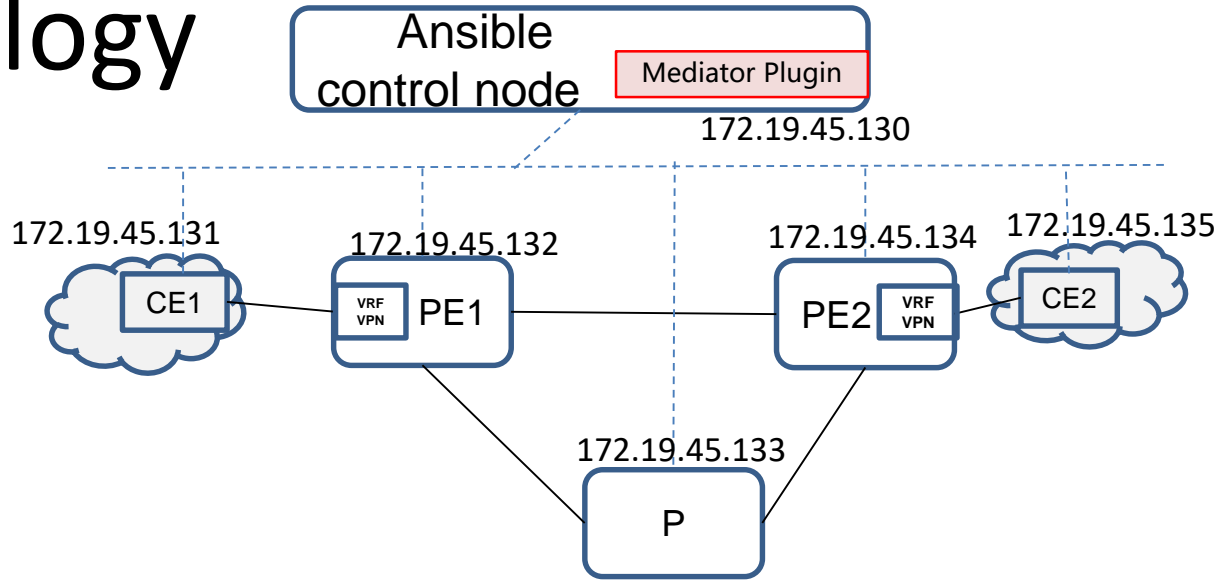
- YANG Mediator project assumption :
 - The SDN controller maps L3SM model to IETF SRv6 VPN device model
 - The SDN controller configures network devices via Mediator



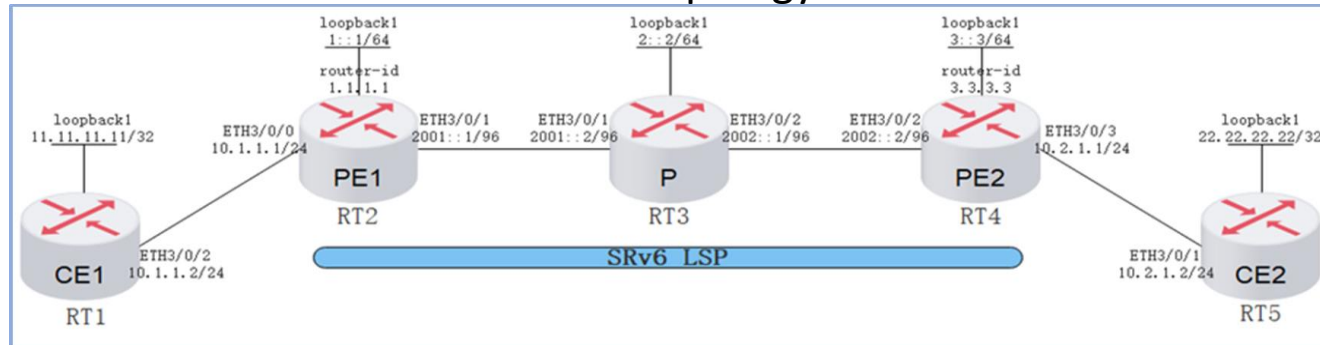
Network topology

- Assumption

- Each device contains some basic initial configuration to allow it be reachable from the Ansible control node with Mediator



Service Topology



Operational workflow

- **Steps**

- CE configuration
 - Ip configuration
 - Interface configuration
- PE configuration
 - SRv6 Global Configuration
 - ISIS SRv6 Configuration
 - SRv6 VPN Configuration
- P configuration
 - SRv6 Global Configuration
 - ISIS SRv6 Configuration

IETF drafts:

- a) <https://tools.ietf.org/html/draft-raza-bess-srv6-services-yang-00>
- b) <https://tools.ietf.org/html/draft-hu-isis-srv6-yang-02>
- c) <https://tools.ietf.org/html/draft-ietf-bess-l3vpn-yang-03>
- d) <https://tools.ietf.org/html/draft-ietf-idr-bgp-model-07>

IETF YANG modules :

1. iana-if-type.yang
2. ietf-inet-types.yang
3. ietf-interfaces.yang
4. ietf-ip.yang
5. ietf-network-instance.yang
6. ietf-routing.yang
7. ietf-bgp-l3vpn.yang
8. ietf-bgp-types.yang
9. ietf-bgp.yang
10. ietf-bgp-srv6-services.yang
11. ietf-isis.yang
12. ietf-isis-srv6.yang
13. ietf-srv6-static.yang
14. ietf-srv6-types.yang

Run 'do-release-upgrade' to upgrade to it.

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Welcome to Huawei Cloud Service

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Welcome to Huawei Cloud Service

Last login: Sun Nov 17 11:00:25 2019 from
root@ecs-ietf106:~# ssh 172.19.45.130
Authorized users only. All activity may be monitored and reported.

Last login: Sun Nov 17 11:10:10 2019 from 31.133.146.233
c@ecs-ietf106:~# ssh 172.19.45.130
Authorized users only. All activity may be monitored and reported.

Password:

Password:

linux:~ # cd /opt/svrp/
linux:/opt/svrp # ./time_client_start

linux:~ # cd /opt/svrp/
linux:/opt/svrp # ./time_client_start 4

Note: DRIVER stub, just only test CLI
Press 'Ctrl +]' exit, other key continue...

Note: DRIVER stub, just only test CLI command.
Press 'Ctrl +]' exit, other key continue...

Info: The max number of VTY users is 15, the number of current VTY users is 0, and total number of terminal users online is 1.
The current login time is 2019-11-17 10:31:35.

Info: The max number of VTY users is 15, the number of current VTY users is 0, and total number of terminal users online is 1.
The current login time is 2019-11-17 10:31:35.

<PE1>

<PE1>

<PE1>

<PE1>

<CE1>

<CE1>

<CE1>

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Mediator

PLAY [RT1_CE1] *****

TASK [RT1_CE1_3] *****

ok: [CE1] => {

"changed": false

}

MSG:

ietf

<?xml version="1.0" encoding="utf-8"?>

<config xmlns:nc="urn:ietf:params:xml:ns:netconf:base:1.0">

<routing xmlns="urn:ietf:params:xml:ns:yang:ietf-routing">

<control-plane-protocols>

<control-plane-protocol>

<bgp xmlns="urn:ietf:params:xml:ns:yang:ietf-bgp">

<neighbors>

<neighbor>

<peer-type>EXTERNAL</peer-type>

<neighbor-address>10.1.1.1</neighbor-address>

<peer-as>100</peer-as>

<afi-safis>

<afi-safi>

<enabled>true

<afi-safi-name>

<afi-safi-name>

</afi-safi>

</afi-safis>

</neighbor>

</neighbors>

<global>

<as>65410</as>

</global>

</bgp>

<type xmlns:ietf-bgp="urn:ietf:params:xml:ns:yang:ietf-bgp">bgp</type>

</config>

</routing>

</control-plane-protocol>

</control-plane-protocols>

</routing>

</config>

</bgp>

</neighbors>

</neighbor>

</afi-safi>

</afi-safis>

</bgp>

</neighbor>

</neighbors>

Welcome to Huawei Cloud Service

Last login: Sun Nov 17 11:12:11 2019 from 31.133.146.233

ecs-ietf106:~# ssh 172.19.45.130

Authorized users only. All activity may be monitored and reported.

Password:

<PE1>

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<PE1>

The max number of VTY users is 15, the number of current VTY users is 0, and total number of terminal users online is 1.

The current login time is 2019-11-17 10:32:42.

What We Learned

- Mediator is feasible to translate IETF standard model to native model , and could help IETF YANG to deploy in the actual network;
- Listen to feedback on modelling translation problem from OpenSource developers and users.
- Next step
 - SRv6 VPN network management operational verification
 - Other useful network service use cases

Wrap Up

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Thanks !