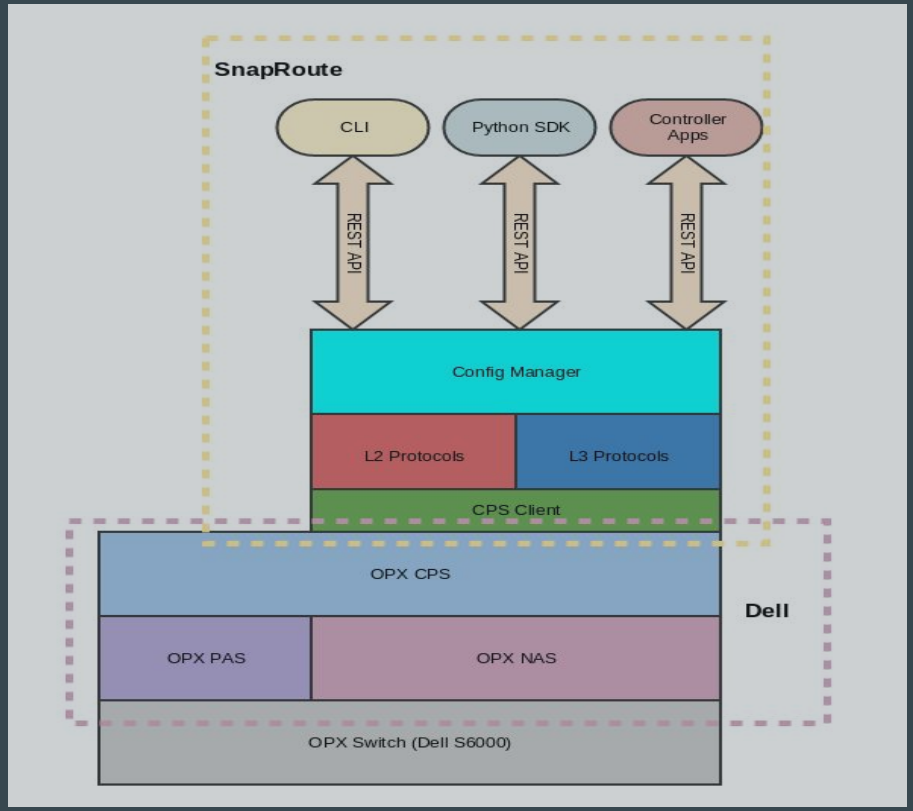
OPX-FlexSwitch Demo

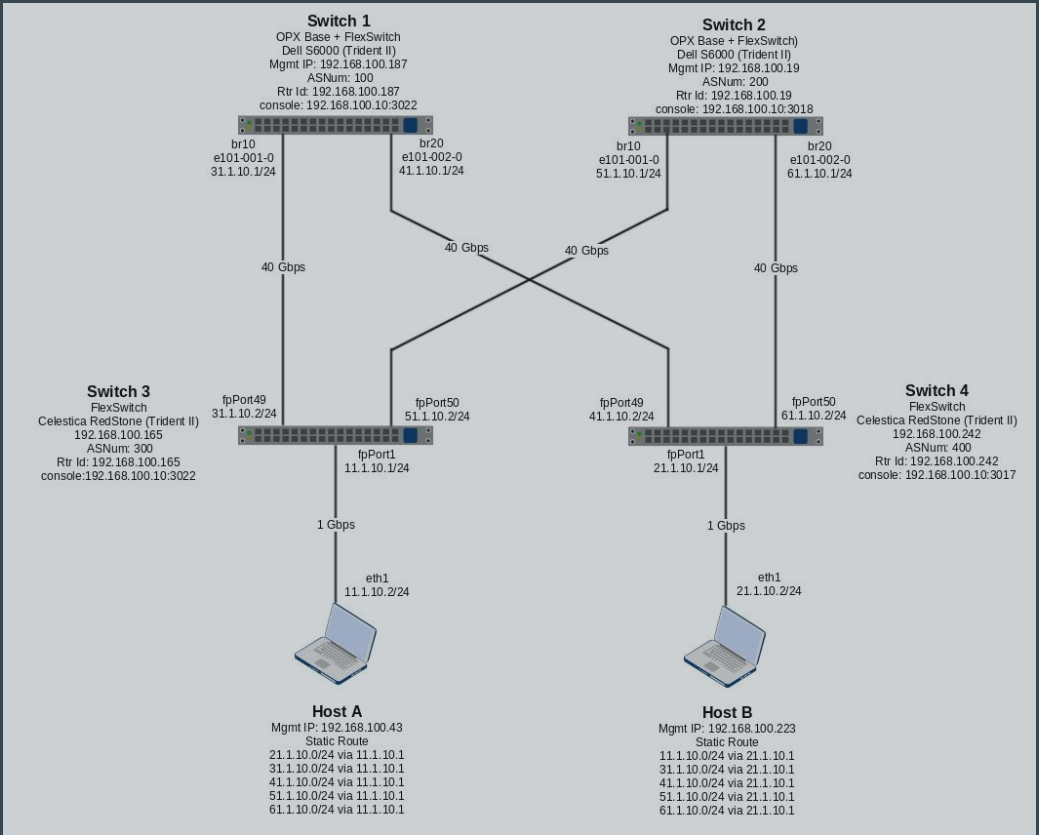
EBGPv4 Demo

Presented By: Ashutosh Shanker from SnapRoute

OPX + FlexSwitch Architecture

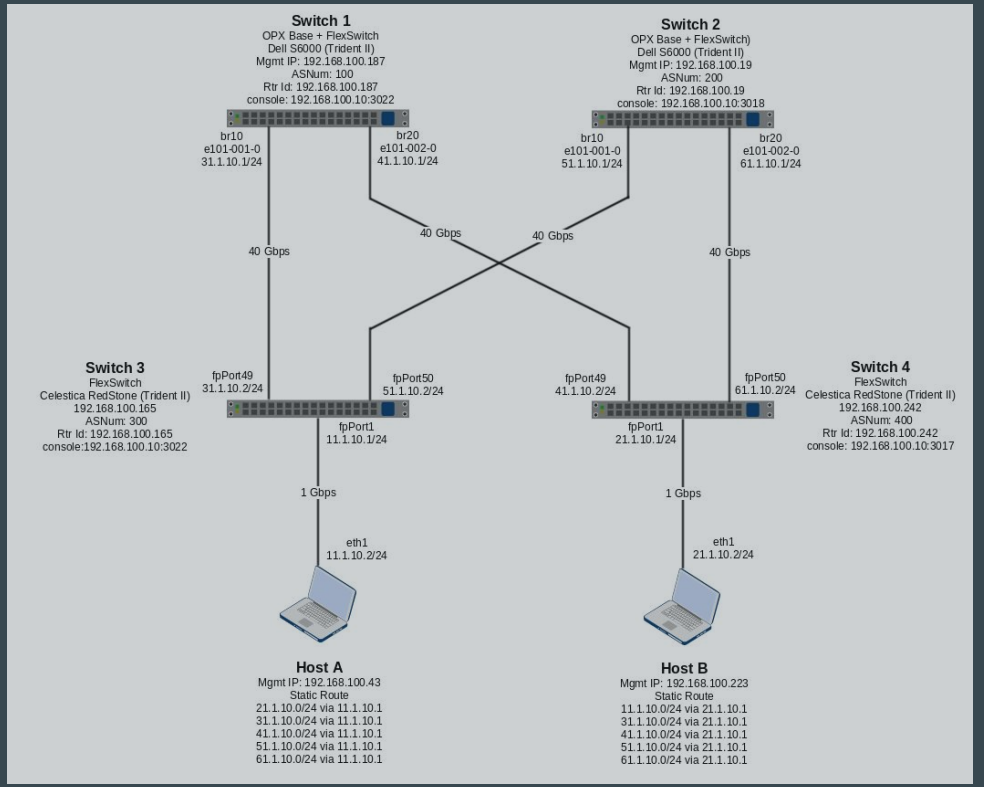


Demo Topology



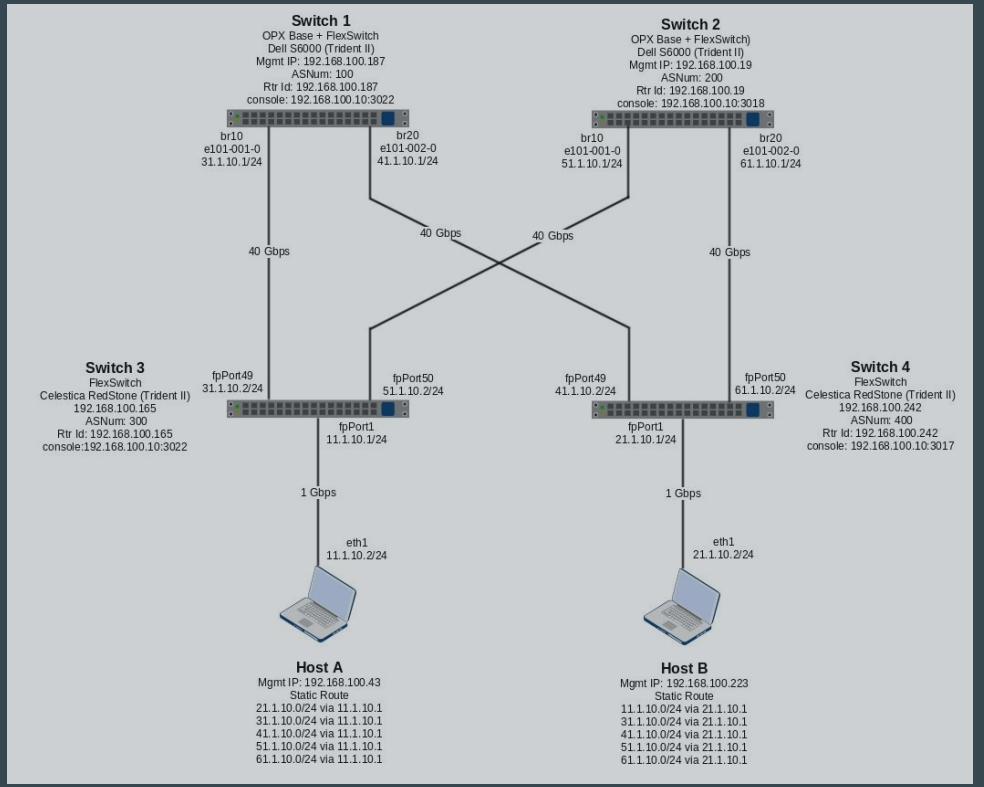
Switch 1 Configuration (Mgmt Ip: 192.168.100.19)

- **Setting Port:** e101-001-0, AdminState: UP
- **Setting Port:** e101-002-0, AdminState: UP
- **Creating Vlan:** 10, Untagged Interface List: [e101-001-0]
- **Creating Vlan:** 20, Untagged Interface List: [e101-002-0]
- **Assigning IPv4 Address** 31.1.10.1/24 on br10
- **Assigning IPv4 Address** 41.1.10.1/24 on br20
- **Creating BGP Global Instance** LocalAS: 100, RouterId: 192.168.100.187
- **Configuring BGPv4 Neighbor** Address: 31.1.10.2, PeerAS: 300, LocalAS: 100
- **Configuring BGPv4 Neighbor** Address: 41.1.10.2, PeerAS: 400, LocalAS: 100



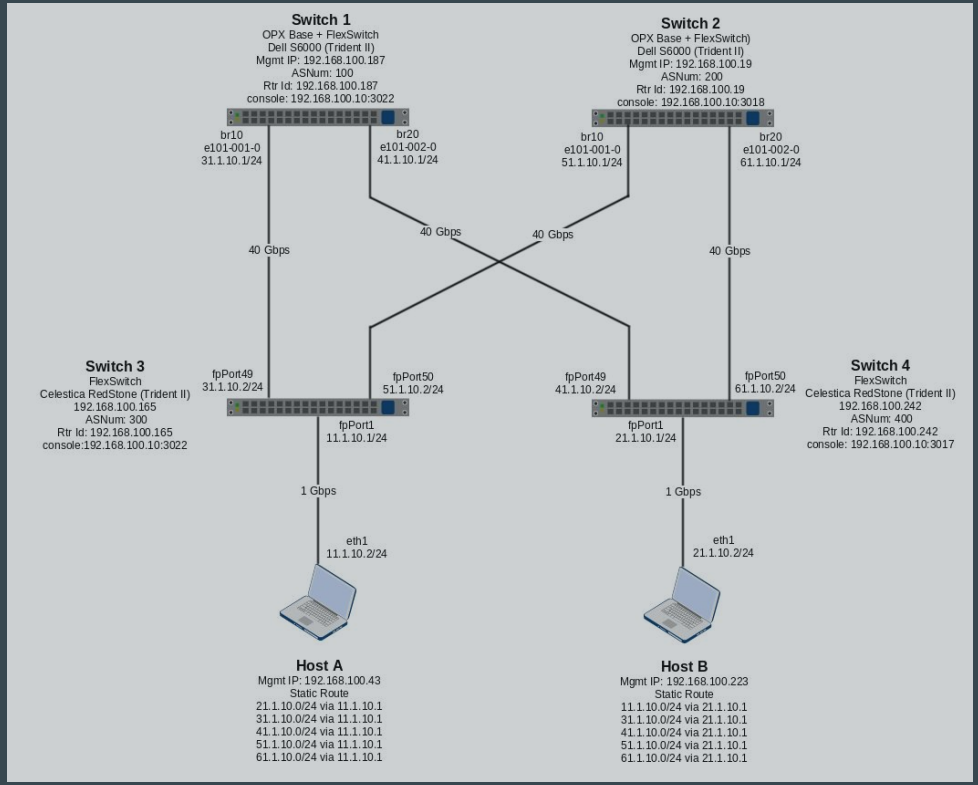
Switch 2 Configuration (Mgmt Ip: 192.168.100.19)

- **Setting Port:** e101-001-0, AdminState: UP
- **Setting Port:** e101-002-0, AdminState: UP
- **Creating Vlan:** 10, Untagged Interface List: [e101-001-0]
- **Creating Vlan:** 20, Untagged Interface List: [e101-002-0]
- **Assigning IPv4 Address** 51.1.10.1/24 on br10
- **Assigning IPv4 Address** 61.1.10.1/24 on br20
- **Creating BGP Global Instance** LocalAS: 200, RouterId: 192.168.100.19
- **Configuring BGPv4 Neighbor** Address: 51.1.10.2, PeerAS: 300, LocalAS: 200
- **Configuring BGPv4 Neighbor** Address: 61.1.10.2, PeerAS: 400, LocalAS: 200



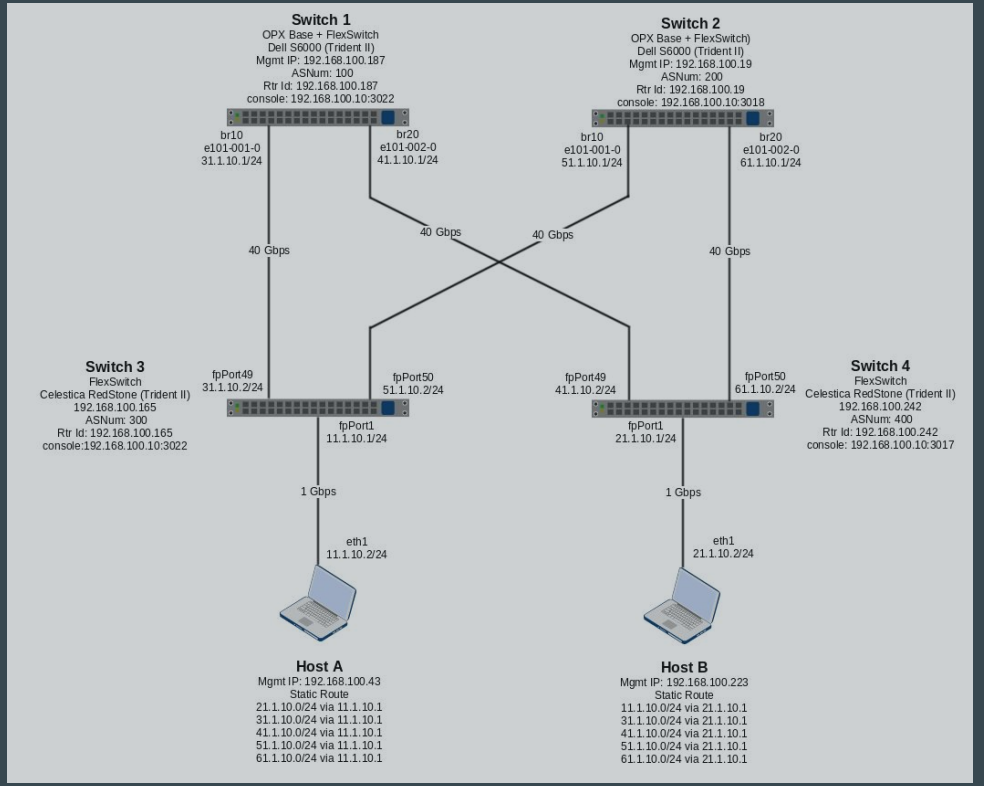
Switch 3 Configuration (Mgmt Ip: 192.168.100.165)

- **Setting Port:** fpPort49 AdminState: UP, Speed: 40000
- **Setting Port:** fpPort50 AdminState: UP, Speed: 40000
- **Setting Port:** fpPort1 AdminState: UP, Speed: 1000
- **Assigning IPv4 Address** 31.1.10.2/24 on fpPort49
- **Assigning IPv4 Address** 51.1.10.2/24 on fpPort50
- **Assigning IPv4 Address** 11.1.10.1/24 on fpPort1
- **Creating Policy :** Redistribute Connected
- **Creating BGP Global Instance** LocalAS: 300, RouterId: 192.168.100.165
- **Configuring BGPv4 Neighbor** Address: 31.1.10.1, PeerAS: 100, LocalAS: 300
- **Configuring BGPv4 Neighbor** Address: 51.1.10.1, PeerAS: 200, LocalAS: 300



Switch 4 Configuration (Mgmt Ip: 192.168.100.242)

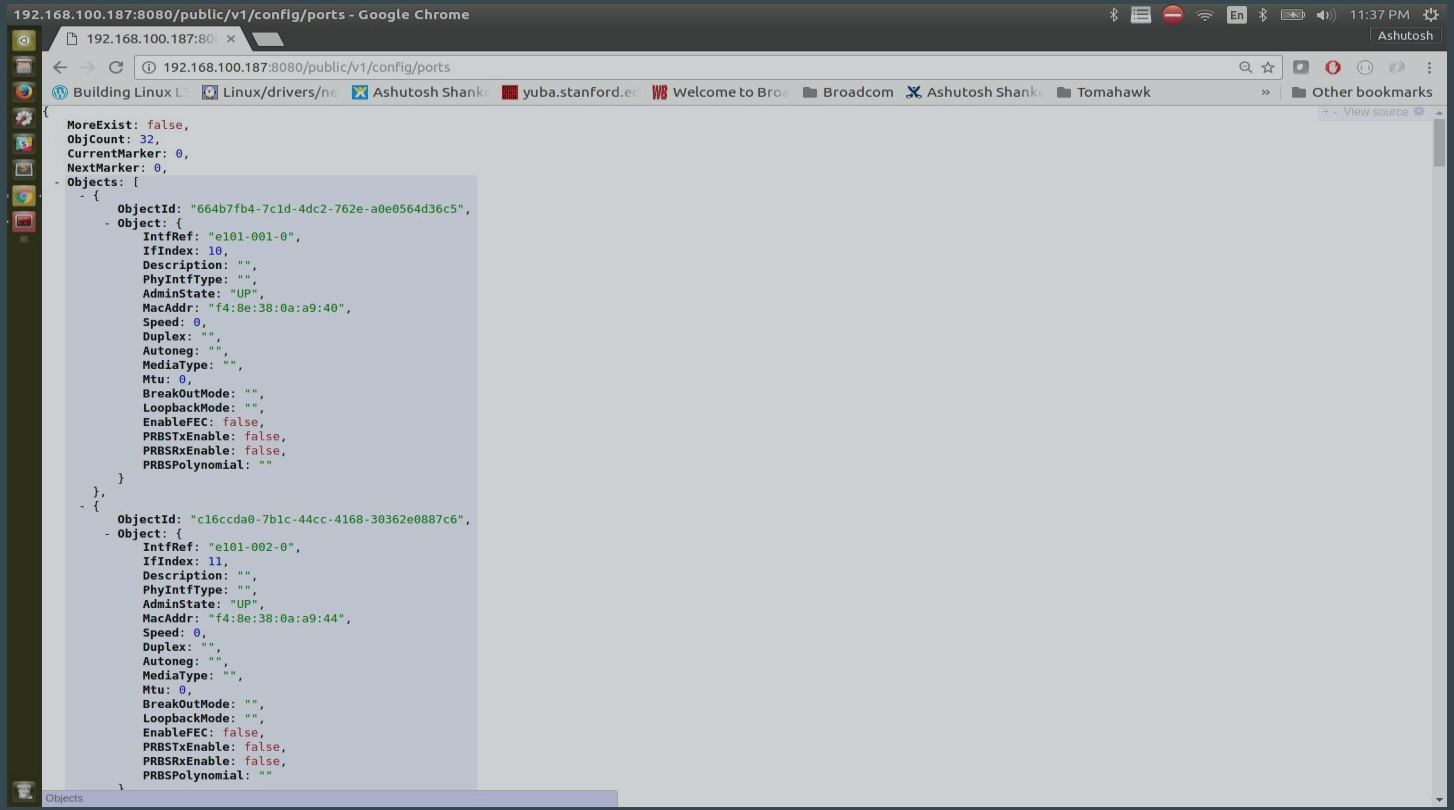
- **Setting Port:** fpPort49, AdminState: UP, Speed: 40000
- **Setting Port:** fpPort50, AdminState: UP, Speed: 40000
- **Setting Port: f**pPort1, AdminState: UP, Speed: 1000
- **Assigning IPv4 Address** 41.1.10.2/24 on fpPort49
- **Assigning IPv4 Address** 61.1.10.2/24 on fpPort50
- **Assigning IPv4 Address** 21.1.10.1/24 on fpPort1
- **Creating Policy:** Redistribute Connected
- **Creating BGP Global Instance** LocalAS: 400, RouterId: 192.168.100.242
- **Configuring BGPv4 Neighbor** Address: 41.1.10.1, PeerAS: 100, LocalAS: 400
- **Configuring BGPv4 Neighbor** Address: 61.1.10.1, PeerAS: 200, LocalAS: 400



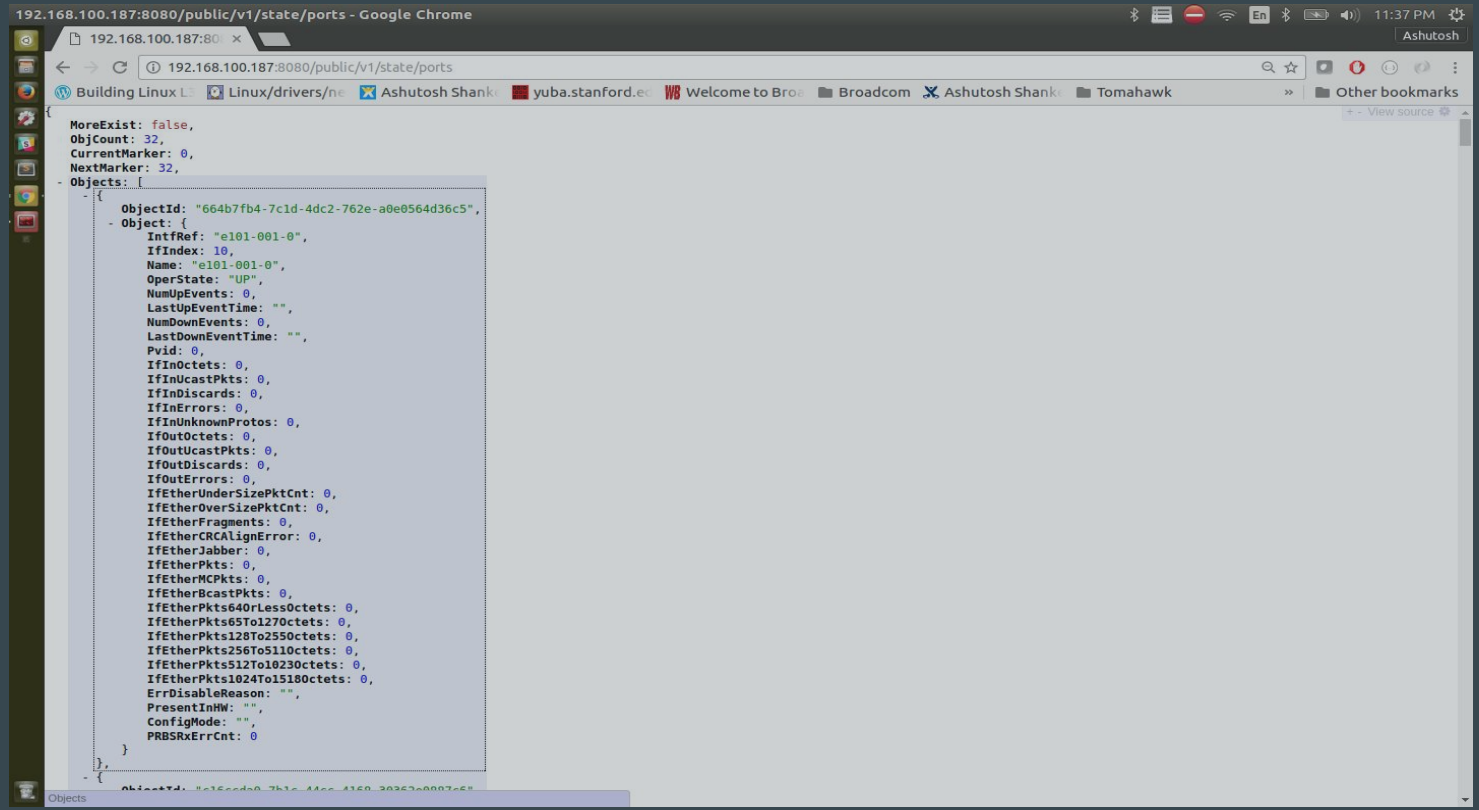
Example Configuration

- curl -X PATCH -H "Content-Type: application/json" -d '{"IntfRef": "e101-001-0", "AdminState":"UP"}' http://192.168.100.187:8080/public/v1/config/Port
- curl -H "Content-Type: application/json" -d '{"VlanId":10, "UntagIntfList":["e101-001-0"]}' http://192.168.100.187:8080/public/v1/config/Vlan
- curl -H "Content-Type: application/json" -d '{"IpAddr": "31.1.10.1/24", "IntfRef":"br10"}' http://192.168.100.187:8080/public/v1/config/IPv4Intf
- curl -H "Content-Type: application/json" -d '{"Vrf":"default", "ASNum":"100", "RouterId":"192.168.100.187"}' -X PATCH http://192.168.100.187:8080/public/v1/config/bgpglobal
- curl -H "Content-Type: application/json" -d '{"NeighborAddress":"31.1.10.2", "IntfRef":"", "PeerAS":"300", "LocalAS":"100", "ConnectRetryTime":30, "HoldTime":3, "KeepaliveTime":1}' -X POST http://192.168.100.187:8080/public/v1/config/bgpv4neighbor

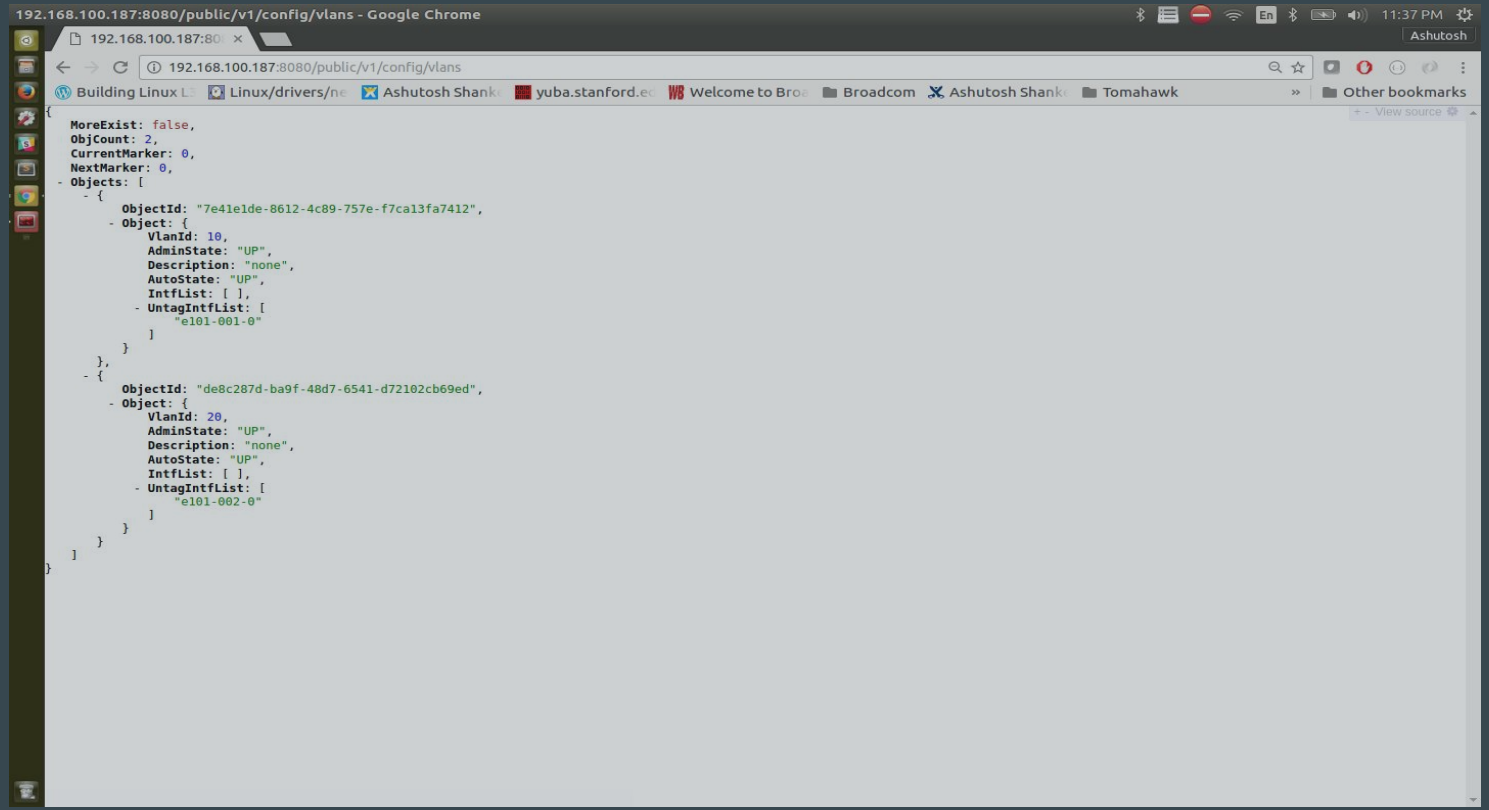
Port Configuration



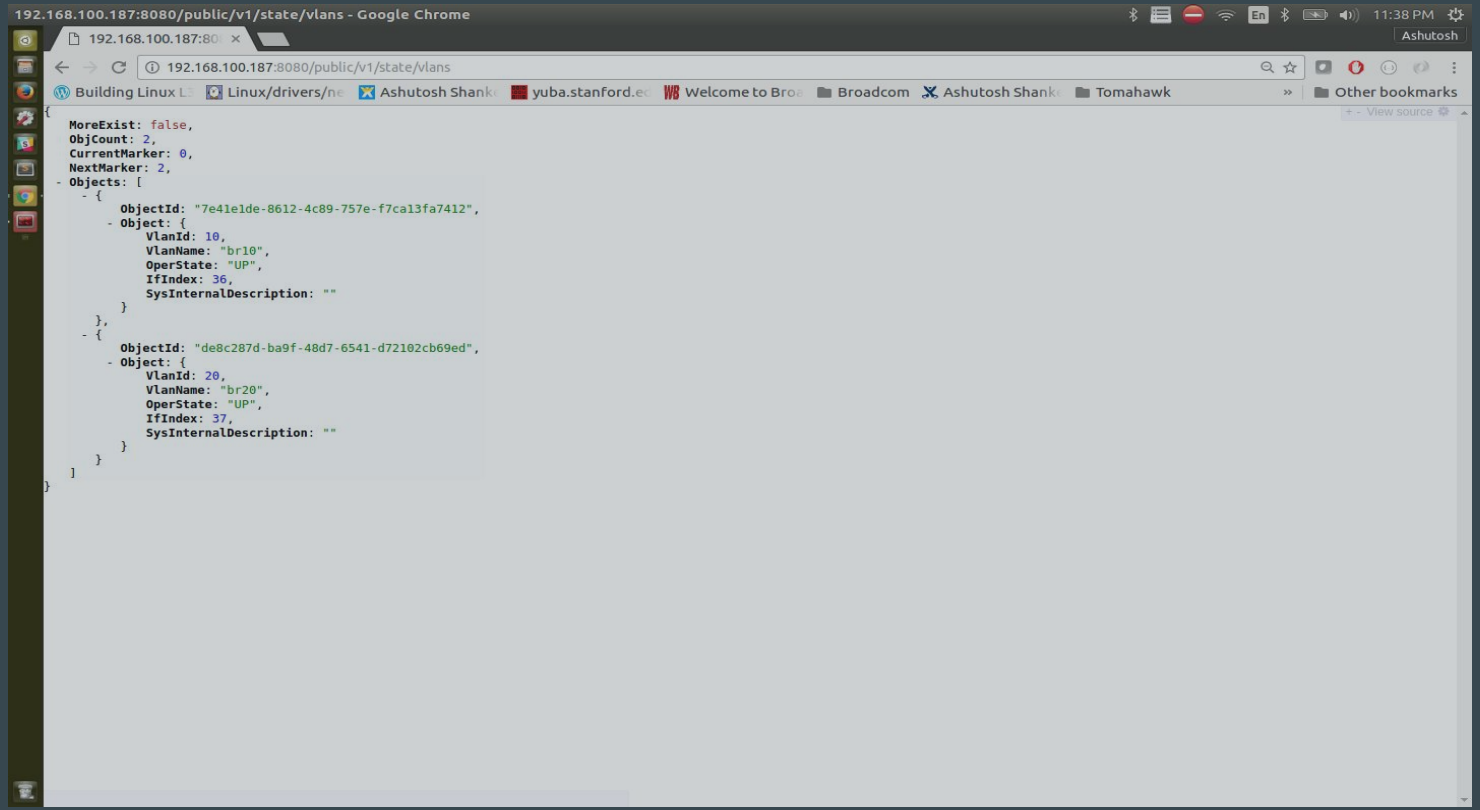
Port State


192.168.100.187:8080/public/v1/state/ports - Google Chrome
11:37 PM
Ashutosh
192.168.100.187:8080/public/v1/state/ports
Building Linux
Linux/drivers/ne
Ashutosh Shank
yuba.stanford.ec
Welcome to Bro
Broadcom
Ashutosh Shank
Tomahawk
Other bookmarks
View source
{
MoreExist: false,
ObjCount: 32,
CurrentMarker: 0,
NextMarker: 32,
Objects: [
{
ObjectId: "664b7fb4-7c1d-4dc2-762e-a0e0564d36c5",
Object: {
IntfRef: "e101-001-0",
IfIndex: 10,
Name: "e101-001-0",
OperState: "UP",
NumUpEvents: 0,
LastUpEventTime: "",
NumDownEvents: 0,
LastDownEventTime: "",
Pvid: 0,
IfInOctets: 0,
IfInUcastPkts: 0,
IfInDiscards: 0,
IfInErrors: 0,
IfInUnknownProtos: 0,
IfOutOctets: 0,
IfOutUcastPkts: 0,
IfOutDiscards: 0,
IfOutErrors: 0,
IfEtherUnderSizePktCnt: 0,
IfEtherOverSizePktCnt: 0,
IfEtherFragments: 0,
IfEtherCRCAlignError: 0,
IfEtherJabber: 0,
IfEtherPkts: 0,
IfEtherMCPkts: 0,
IfEtherBcastPkts: 0,
IfEtherPkts640rLessOctets: 0,
IfEtherPkts65To127Octets: 0,
IfEtherPkts128To255Octets: 0,
IfEtherPkts256To511Octets: 0,
IfEtherPkts512To1023Octets: 0,
IfEtherPkts1024To1518Octets: 0,
ErrDisableReason: "",
PresentInHW: "",
ConfigMode: "",
PRBSRxErrCnt: 0
}
},
{
Objects

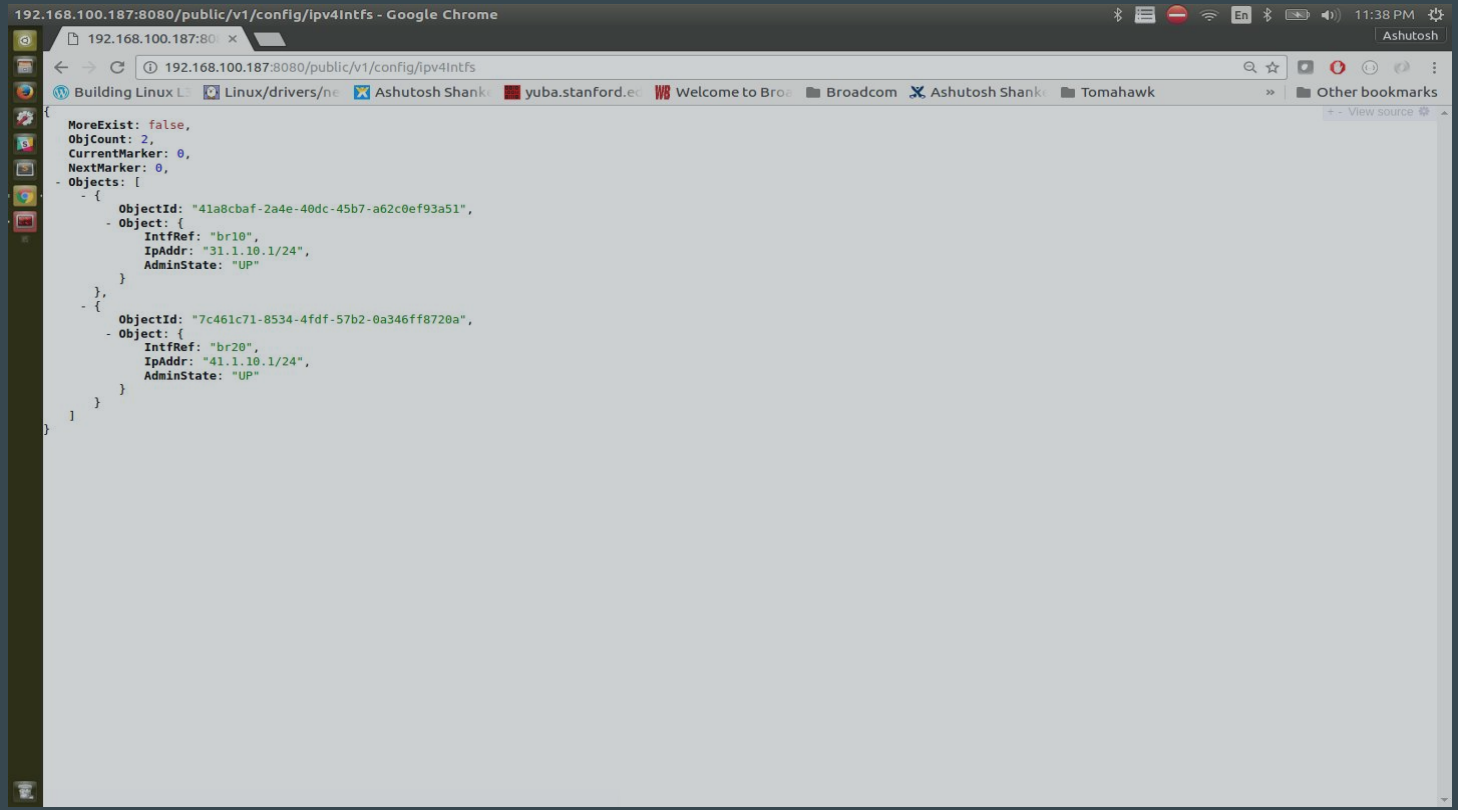
Vlan Configuration



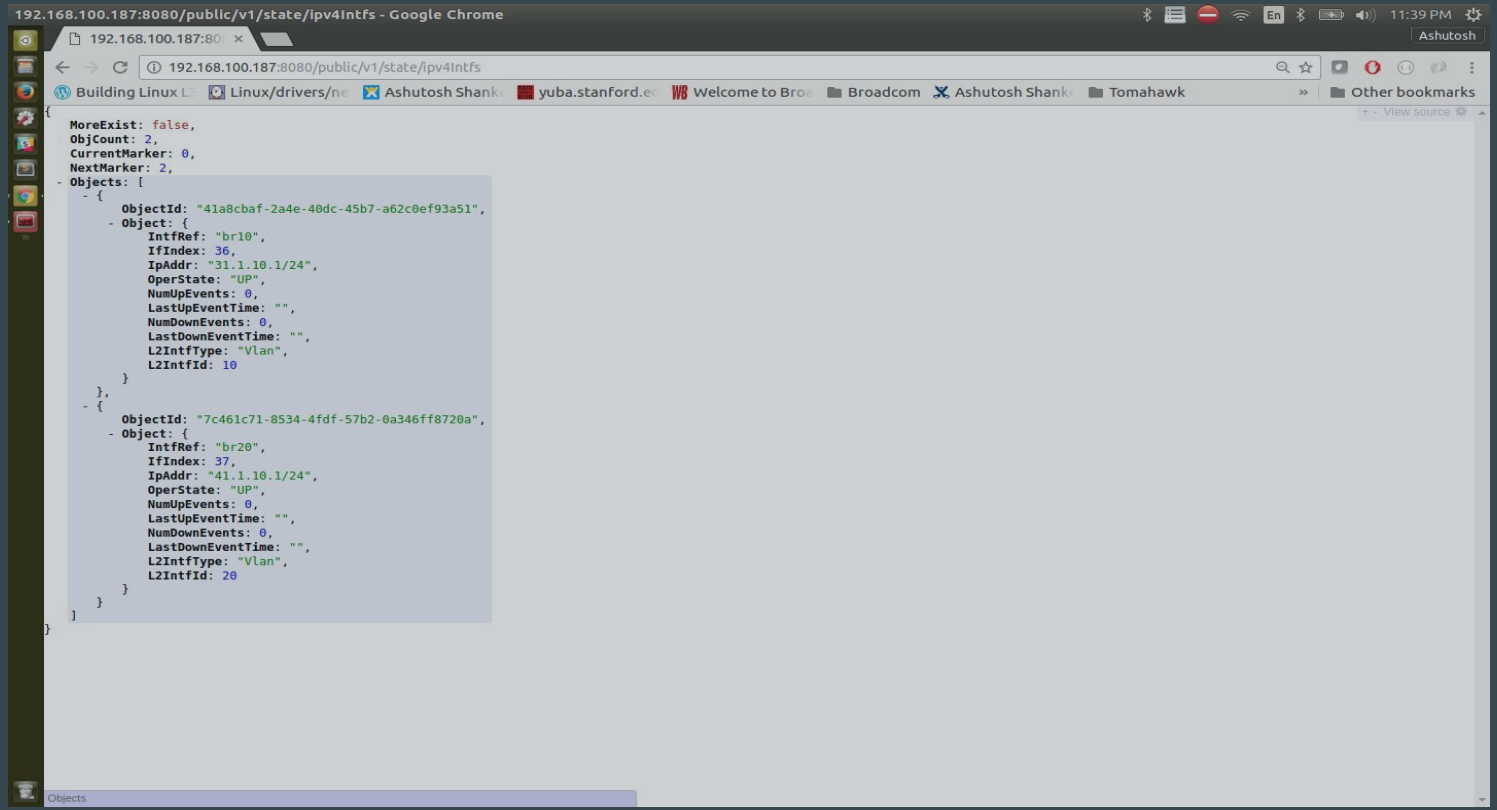
Vlan State


192.168.100.187:8080/public/v1/state/vlans - Google Chrome
11:38 PM
Ashutosh
192.168.100.187:8080/public/v1/state/vlans
Building Linux
Linux/drivers/
Ashutosh Shank
yuba.stanford.
Welcome to Bro
Broadcom
Ashutosh Shank
Tomahawk
Other bookmarks
View source
{
MoreExist: false,
ObjCount: 2,
CurrentMarker: 0,
NextMarker: 2,
- Objects: [
- {
ObjectId: "7e41e1de-8612-4c89-757e-f7ca13fa7412",
- Object: {
VlanId: 10,
VlanName: "br10",
OperState: "UP",
IfIndex: 36,
SysInternalDescription: ""
}
},
- {
ObjectId: "de8c287d-ba9f-48d7-6541-d72102cb69ed",
- Object: {
VlanId: 20,
VlanName: "br20",
OperState: "UP",
IfIndex: 37,
SysInternalDescription: ""
}
}
]
}

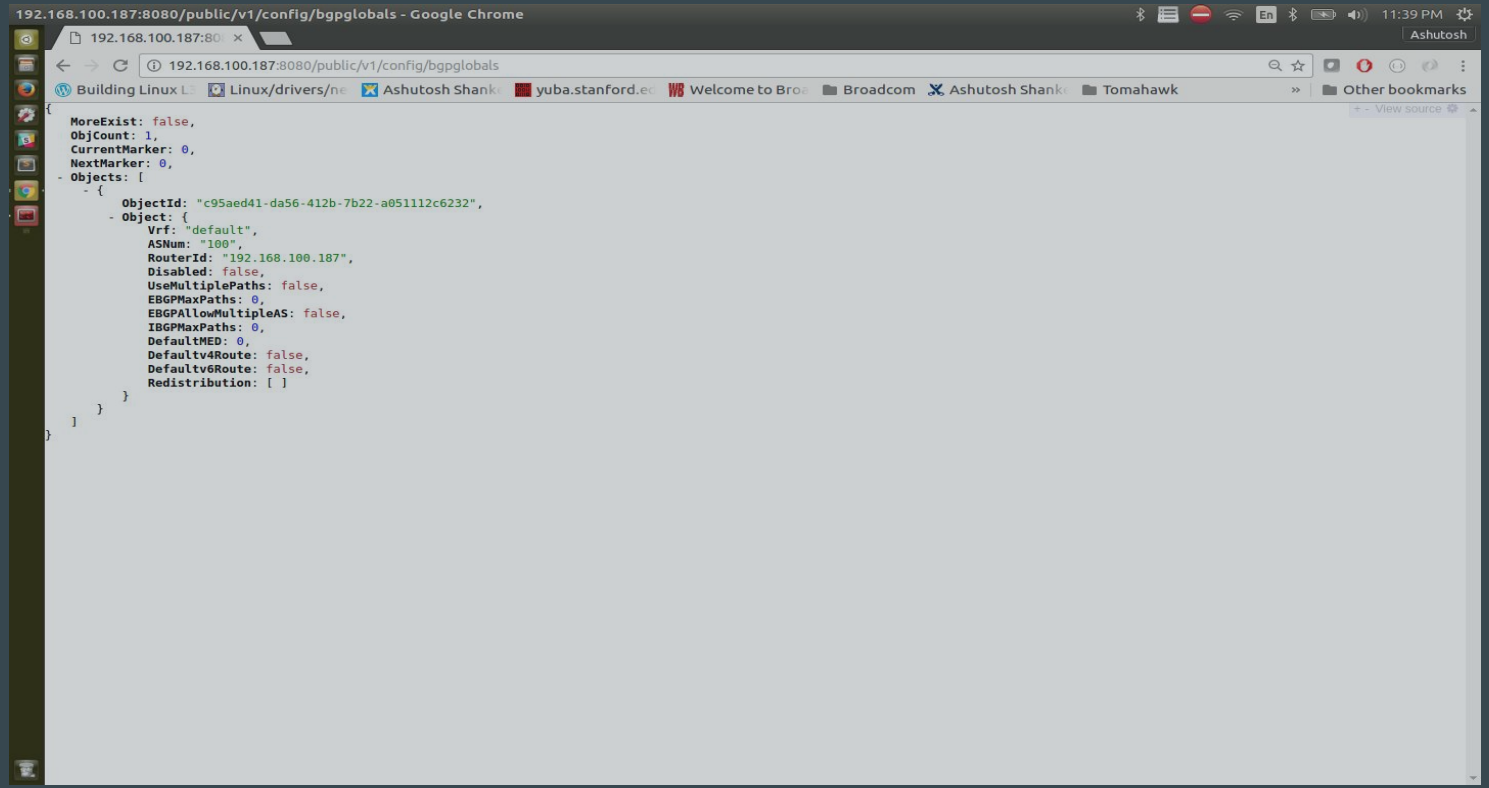
IPv4 Interface Configuration



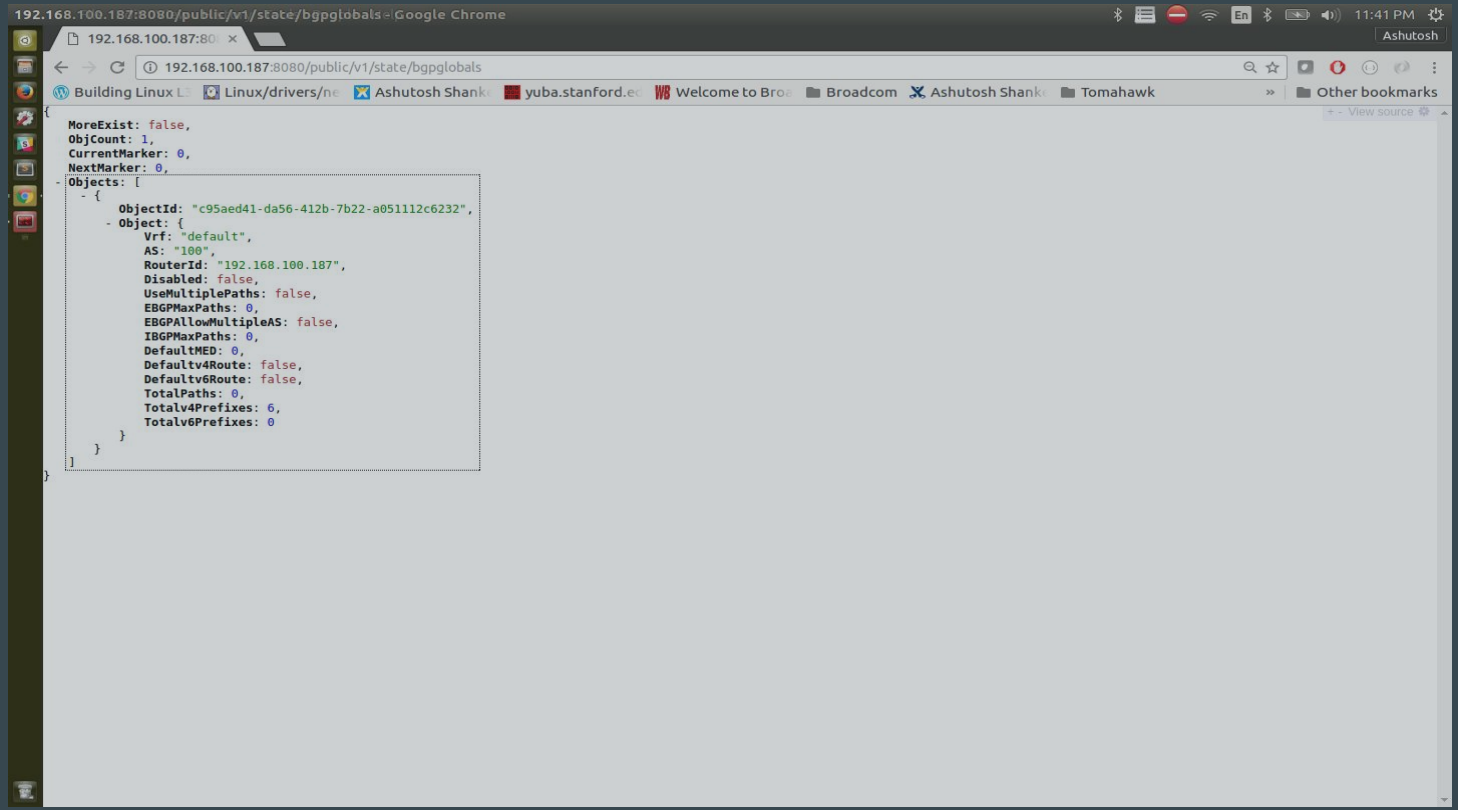
IPv4 Interface State



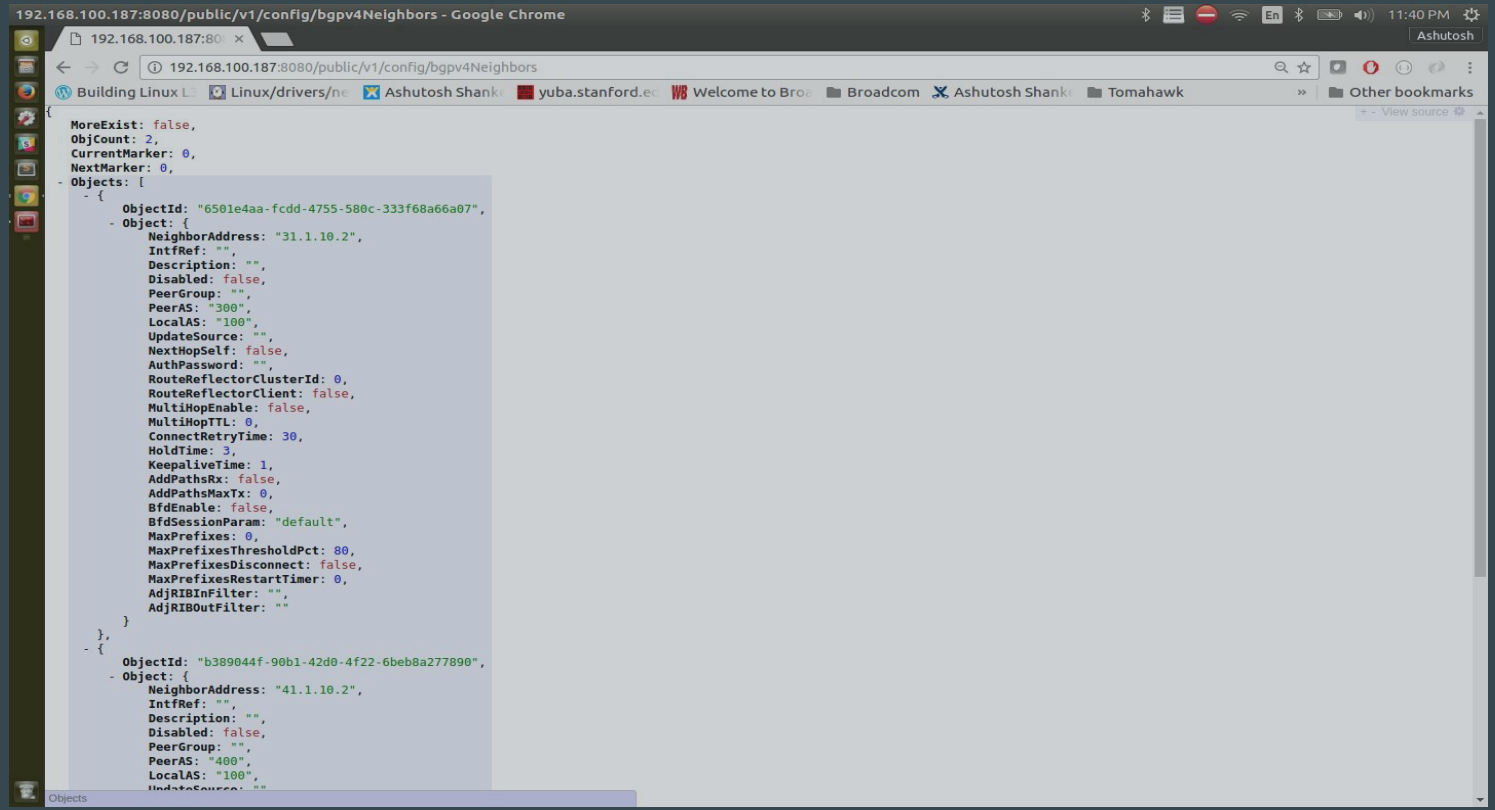
BGP Global Configuration



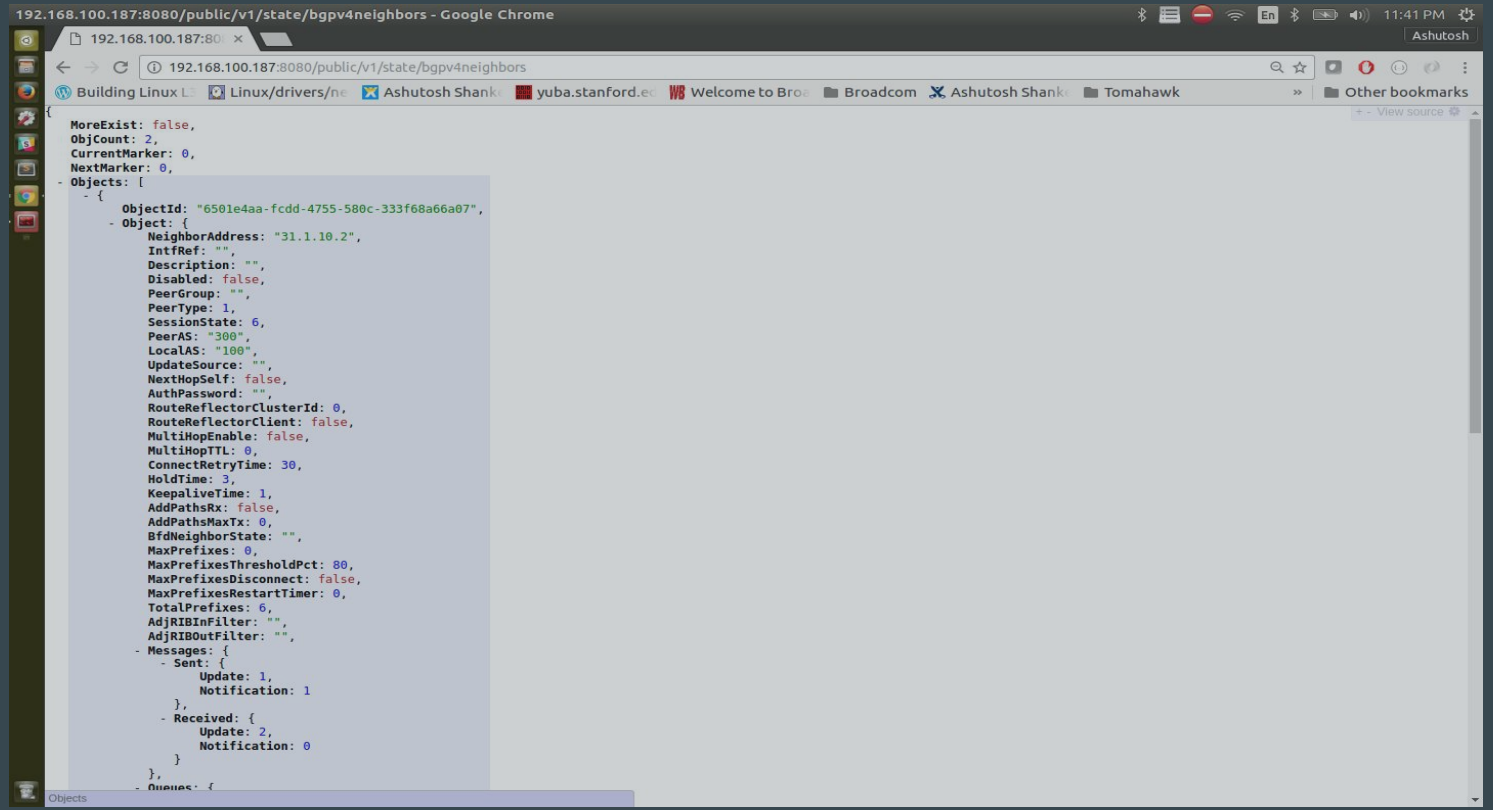
BGP Global State



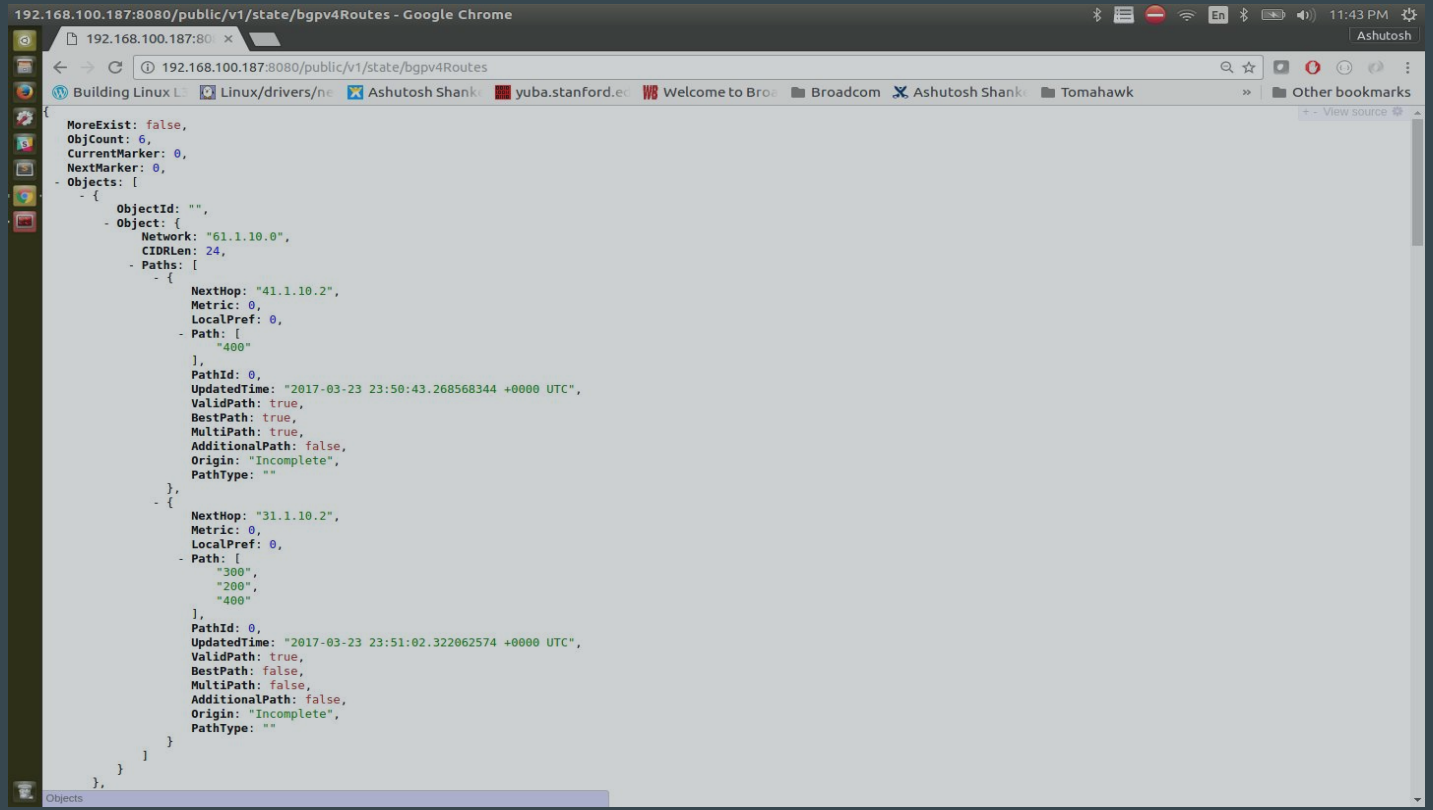
BGP Neighbor Configuration



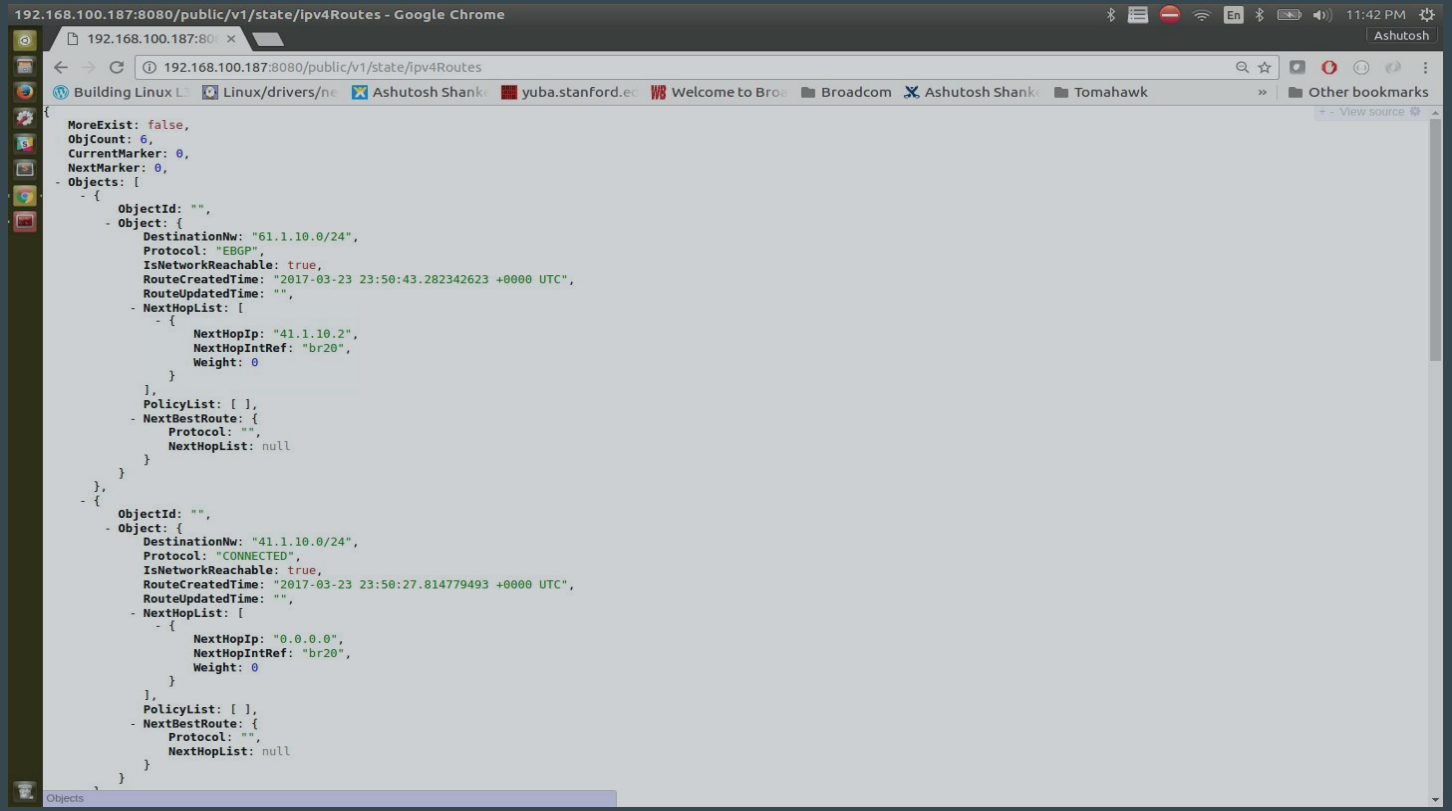
BGP Neighbor State



BGP Route State



IPv4 Route State




DEMO
Time

References

- http://www.openswitch.net/
- https://github.com/open-switch
- https://github.com/open-switch/flx-docs
- https://github.com/open-switch/flx-docs/blob/master/README.md
- https://github.com/open-switch/opx-flxl3
- https://github.com/open-switch/opx-flxl2
- https://github.com/open-switch/opx-flxconfig
- https://github.com/open-switch/opx-flxcps
- https://github.com/open-switch/flx-docs/blob/master/opx_flx_ebgp_demo.sh
- https://github.com/open-switch/opx-docs

Q & A


THANK
YOU