

SDN Load Balancing

University Of Massachusetts, Lowell

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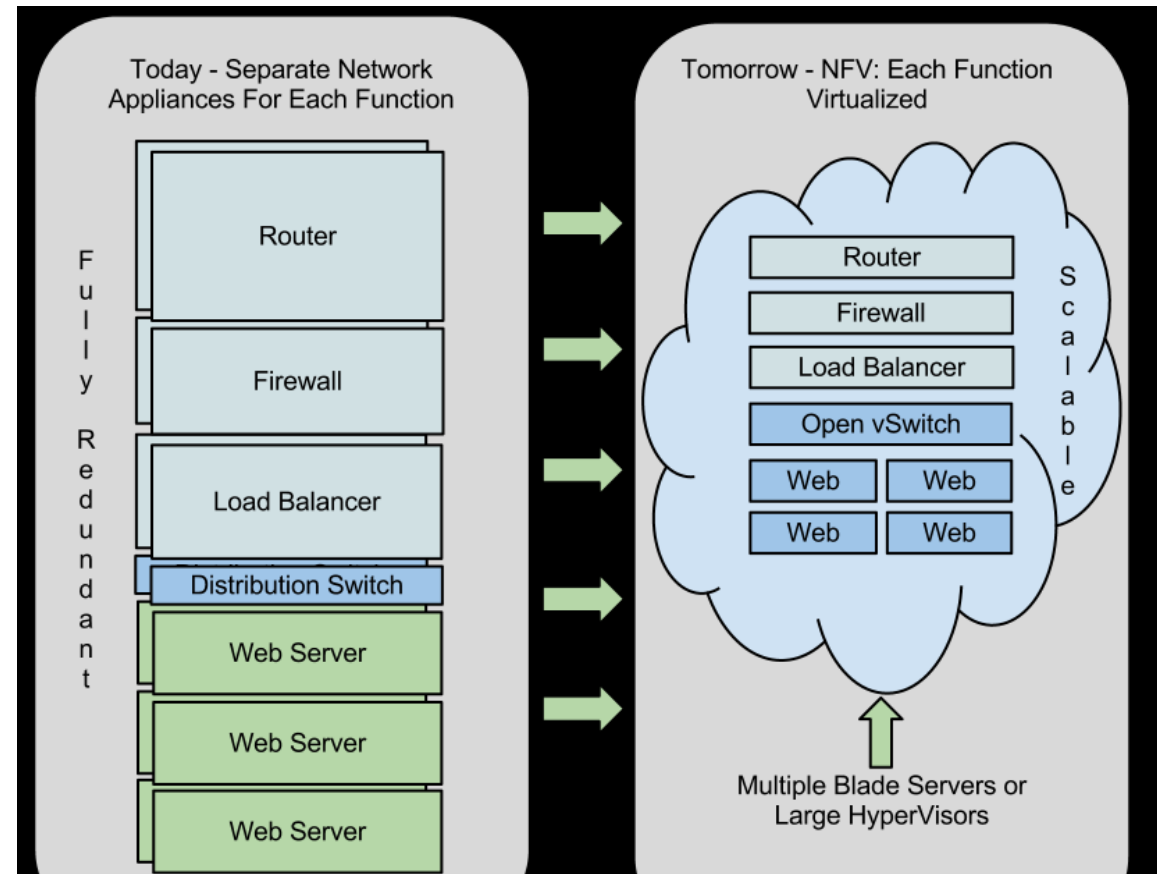
Presented By
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Overview

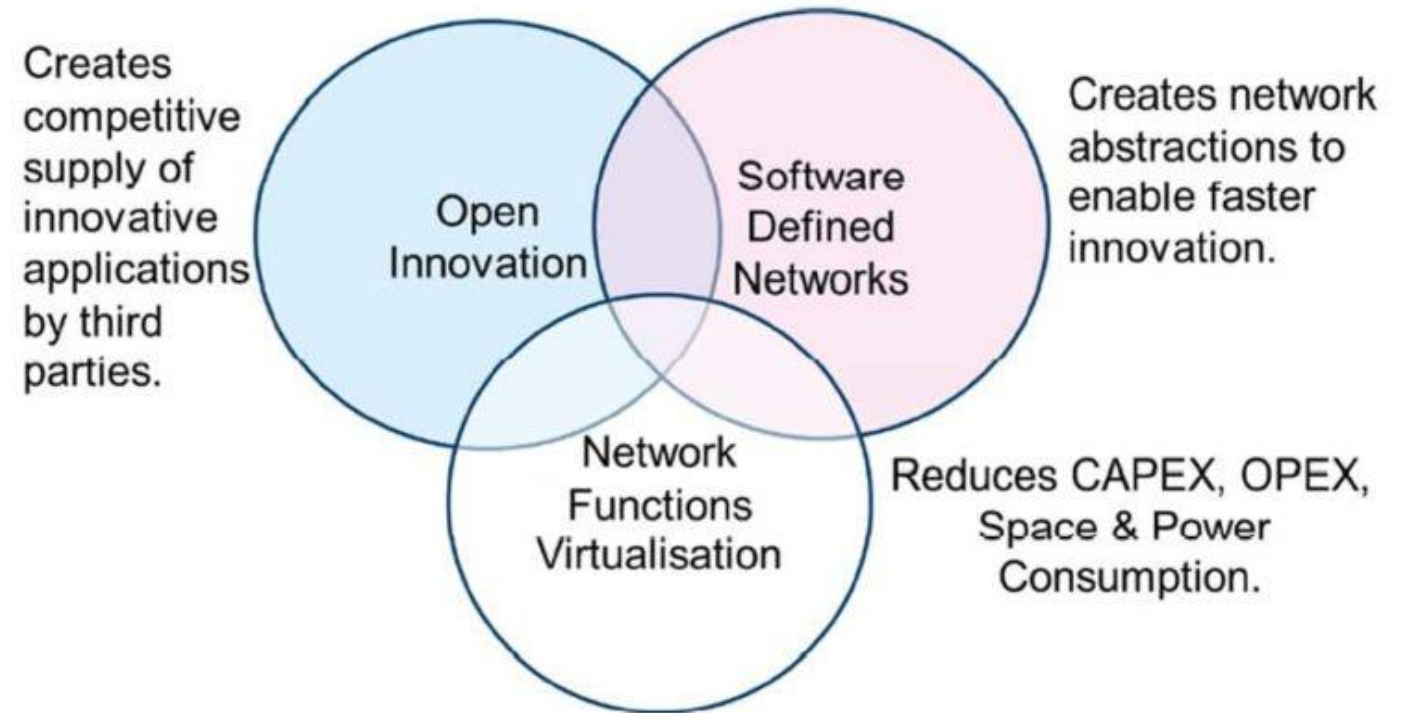
- Introduction to NFV
- NFV
- NFV vs SDN
- Floodlight
- Demo

NFV

- Definition
- Goal : Decouple network functions from dedicated hardware



SDN vs NFV



SDN and NFV ??

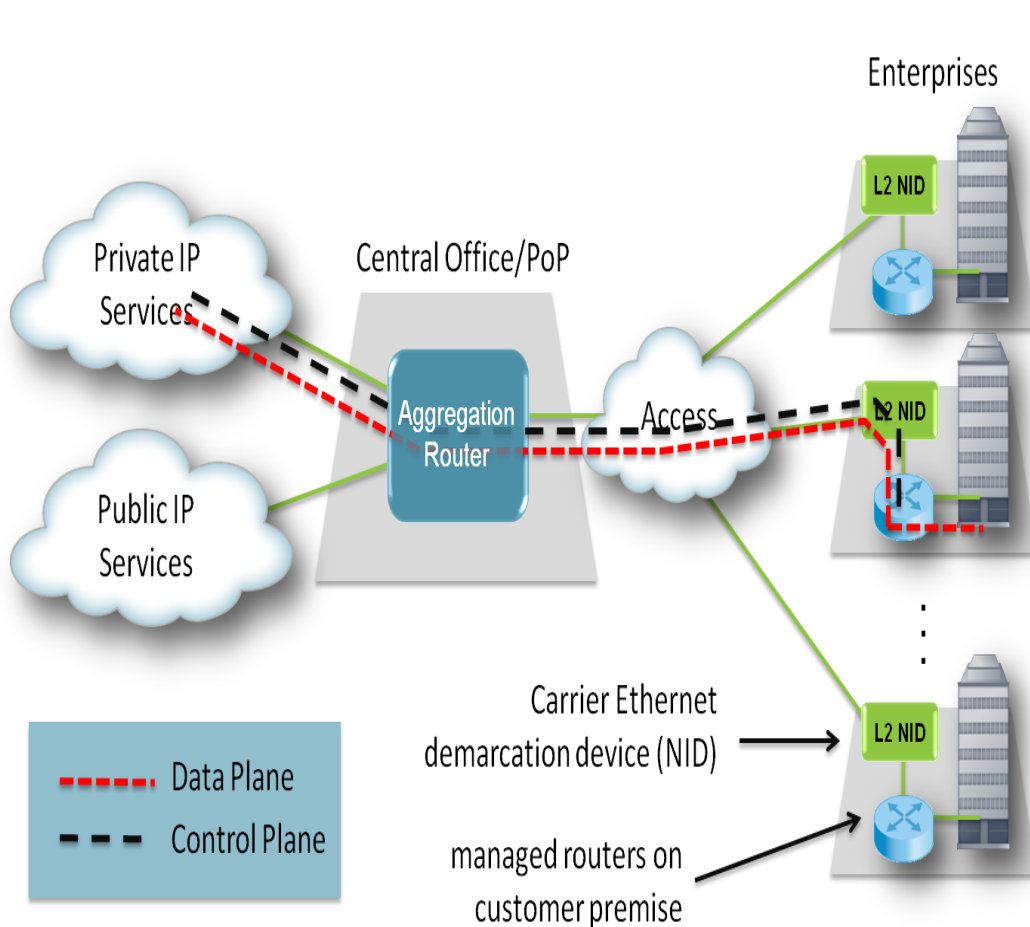


Figure 1

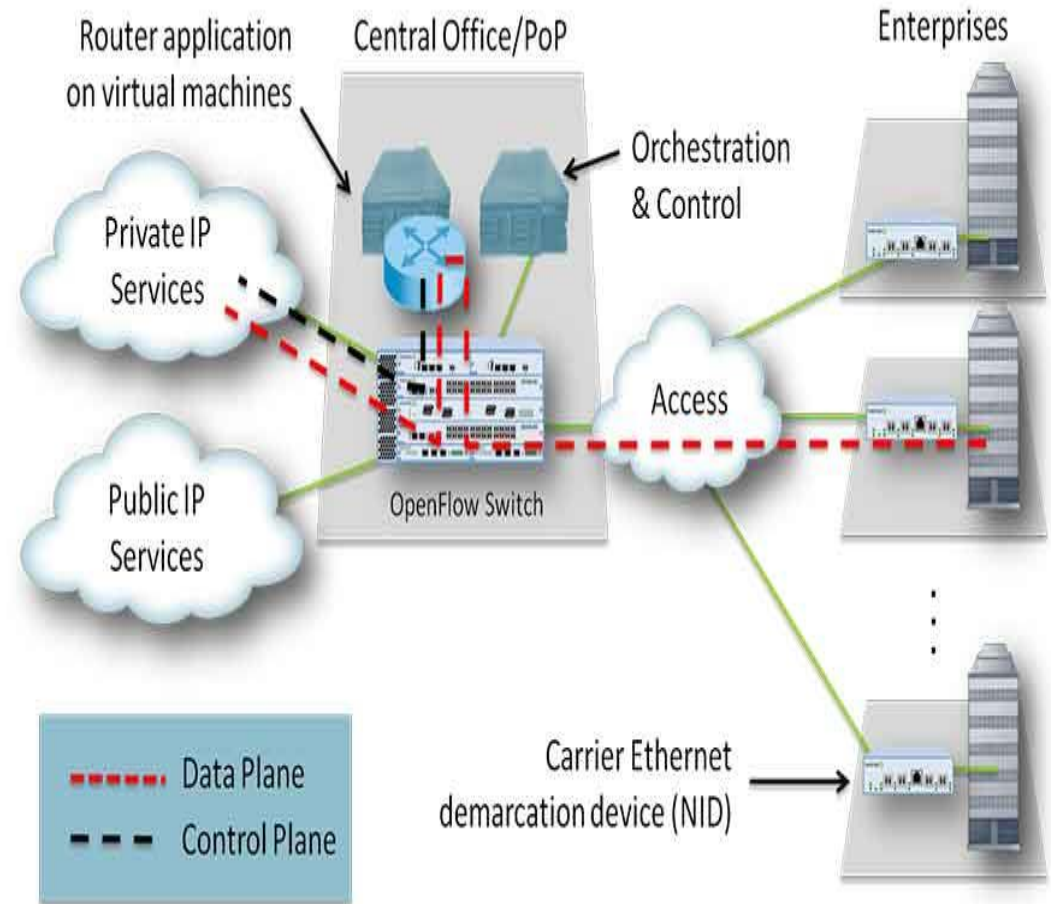
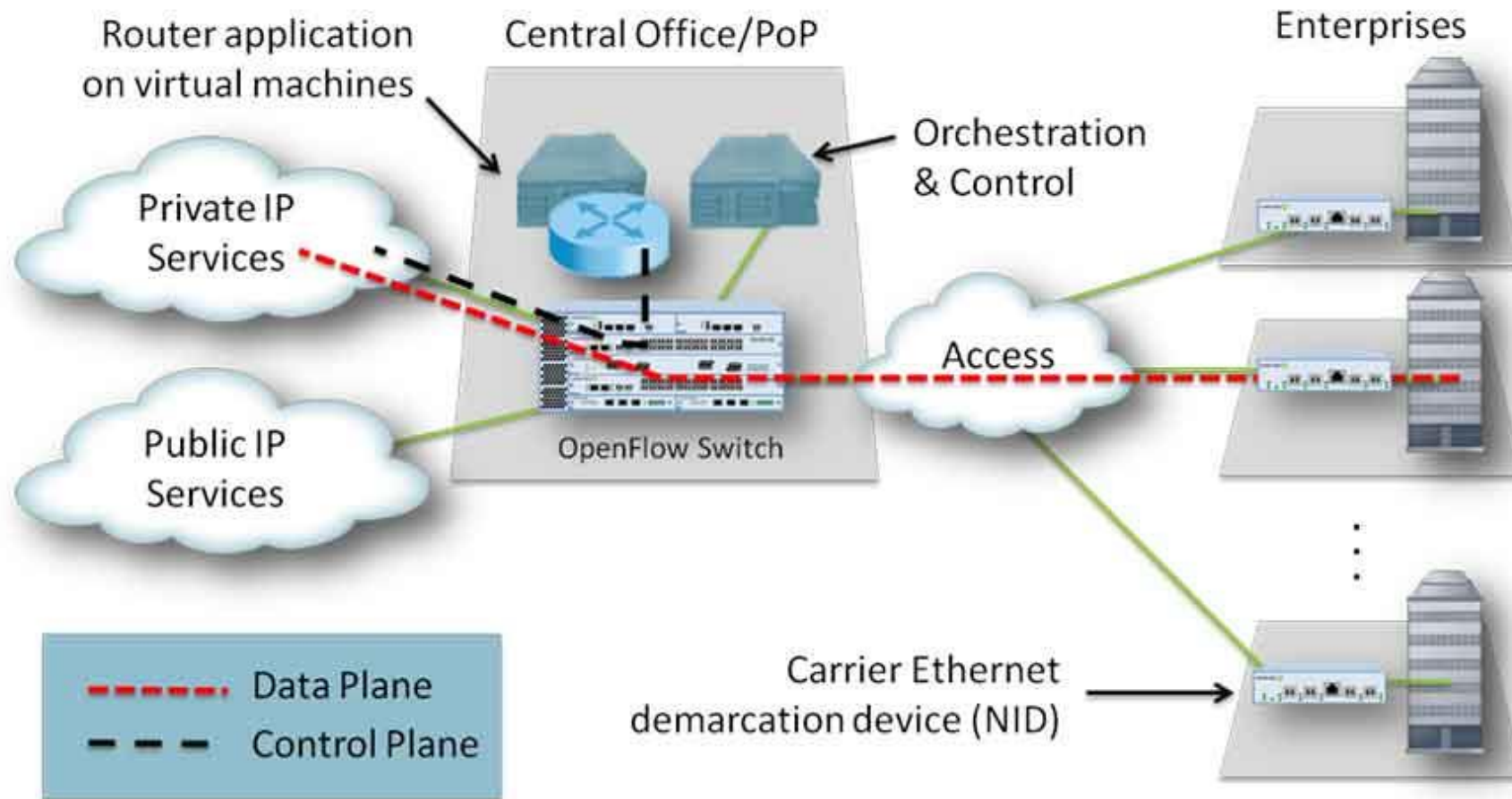


Figure 2

SDN And NFV



Summary

Category	SDN	NFV
Reason for Being	Separation of control and data, centralization of control and programmability of network	Relocation of network functions from dedicated appliances to generic servers
Target Location	Campus, data center / cloud	Service provider network
Target Devices	Commodity servers and switches	Commodity servers and switches
Initial Applications	Cloud orchestration and networking	Routers, firewalls, gateways, CDN, WAN accelerators, SLA assurance
New Protocols	OpenFlow	None yet
Formalization	Open Networking Forum (ONF)	ETSI NFV Working Group
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Floodlight overview

- Developer friendly apache license
- Easy to use
- Enterprise Grade
- Supports a broad range of switches



Floodlight Users and Contributors

big switch
networks



Floodlight Adopters:

- University research
- Networking vendors
- Users
- Developers / startups

Floodlight - Google Chrome

Switch Networks Floodlight

45.0.88.81:8080

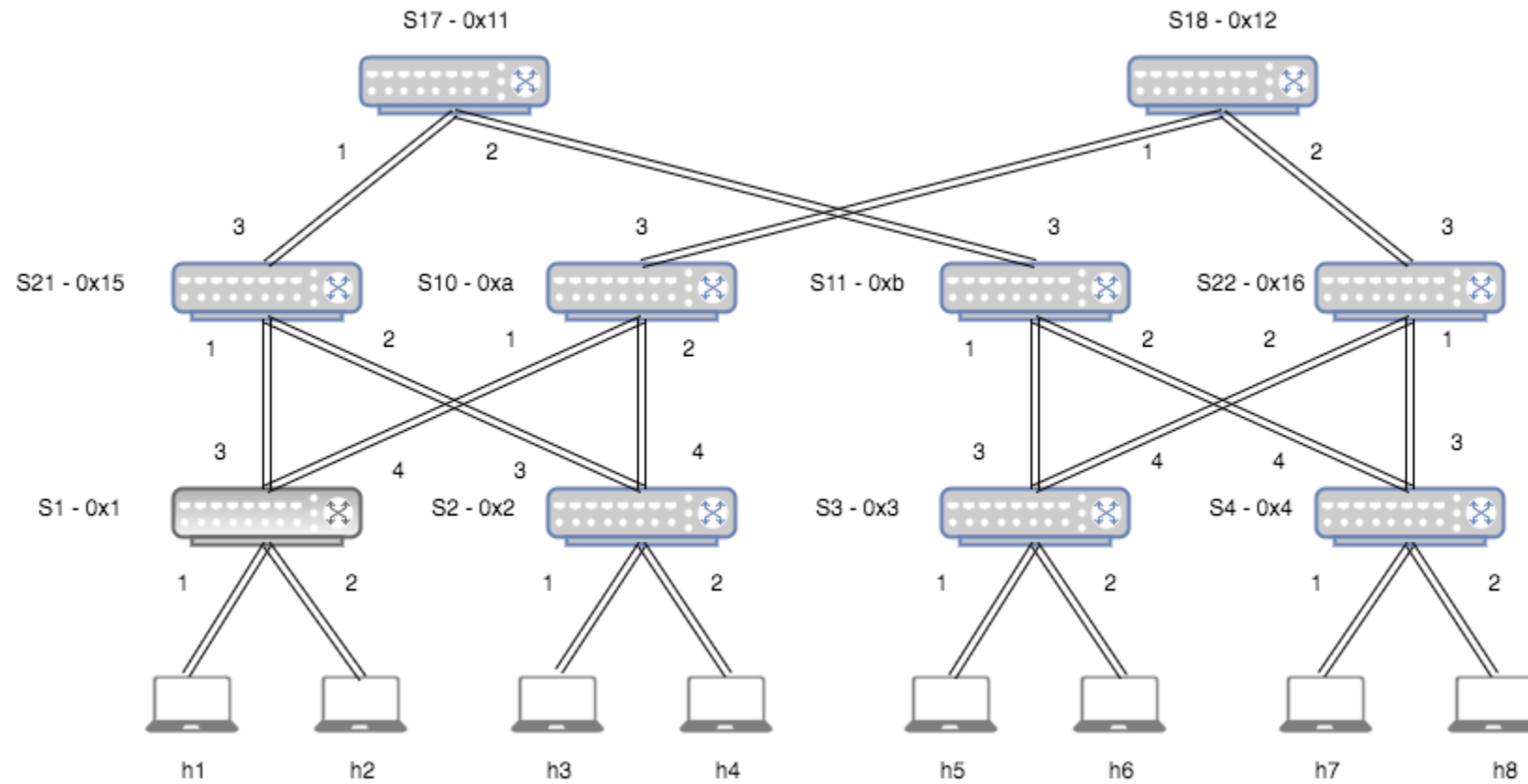
Floodlight

Dashboard Topology Switches Hosts

Search (try a IP or MAC address)

DPID	Vendor	Packets	Bytes	Flows
00:01:00:25:5c:66:ed:0b	NEC Corporation	49972	7992795	6
00:01:00:18:fe:84:e8:40	HP Networking	33142	5634622	5
00:00:04:50:00:08:80:33	Indigo OpenFlow from Big Switch Networks	38744	0	5
00:00:00:1b:ed:a4:1c:c0	Brocade	0	0	5
00:00:c8:0a:a9:9e:14:6a	Broadcom Corp.	0	0	0
00:00:00:1c:73:17:bf:dc	Arista Networks	0	0	0
00:00:00:a0:a5:61:92:ba	Juniper	0	0	0
00:00:00:00:00:00:01:28	Huawei Technologied Co. Ltd.	100	15806	1
00:00:04:50:00:08:80:34	Indigo OpenFlow from Big Switch Networks	37561	0	5
00:01:2c:76:8a:60:75:40	HP Networking	39285	6190279	5
00:00:00:04:96:37:54:36	Extreme Networks	9719	1442556	6
00:00:00:24:38:91:ea:00	Brocade	0	0	5
00:00:19:21:68:01:10:49	Indigo OpenFlow from Big Switch Networks	28995	0	6
00:00:00:04:96:52:57:ff	Extreme Networks	34792	5375367	7

FAT TREE TOPOLOGY



DEMO

Thank You