Update on
Progress of Eduroam and IPV6 roll out at the Open University

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Progress of Eduroam deployment at OUSL

▶ All Enterprise Access points centrally controlled by controllers at Nawala Campus propagate "Eduroam" SSID.

▶ Testing done to authenticate guests from other universities via ousl infra successfully.

▶ All 8 Regional centers are equipped with APs and are able to authenticate users.

▶ A few foreign users of other universities used OUSL based Access Points to avail Eduoroam service.

Progress of IPV6 Deployment (Testing)

▶ OUSL was able to learn and experience IPV6 on separate test bed consisting of Cisco distribution switches and access switches and couple of application serers.

▶ Stateless DHCPv6 has been used with IPV6 subnet of /64

▶ Pfsense was deployed with DNSv6 to generate IPV6 traffic

▶ LEARN has to add static default route to OUSL subnet /64 (2401:dd00:40:1::/24)

▶ ASA will be sitting with LEARN and perimeter router to effect IPV6 ACL and Prefix delegation in future

Summary of OUS Network Infra components

- Consist of total 185 Cisco Layer 2/3 (Cisco 29xx/3750)and multi layers (4k/64) –All of them are IPV6 ready except 1800 series in which case IOS Ver. 15 is to be upgraded.

- Cisco ASA, WSA and Blue Coat Paketers etc for Natting, proxing, Firewall and Traffic shaping and monitoring

- HP Gen 5, 7 , 8 DL/ML and C7000 HP Blade Center in a well designed datacenter

- Layer 3 routing with HSRP and SVI

- 20 Fiber point to multipoint 8MB SLT-VPLS spoke across the country with hub with 15MB

- Backbone with 123MB from LEARN and 20MB from SLT

Physical Diagram
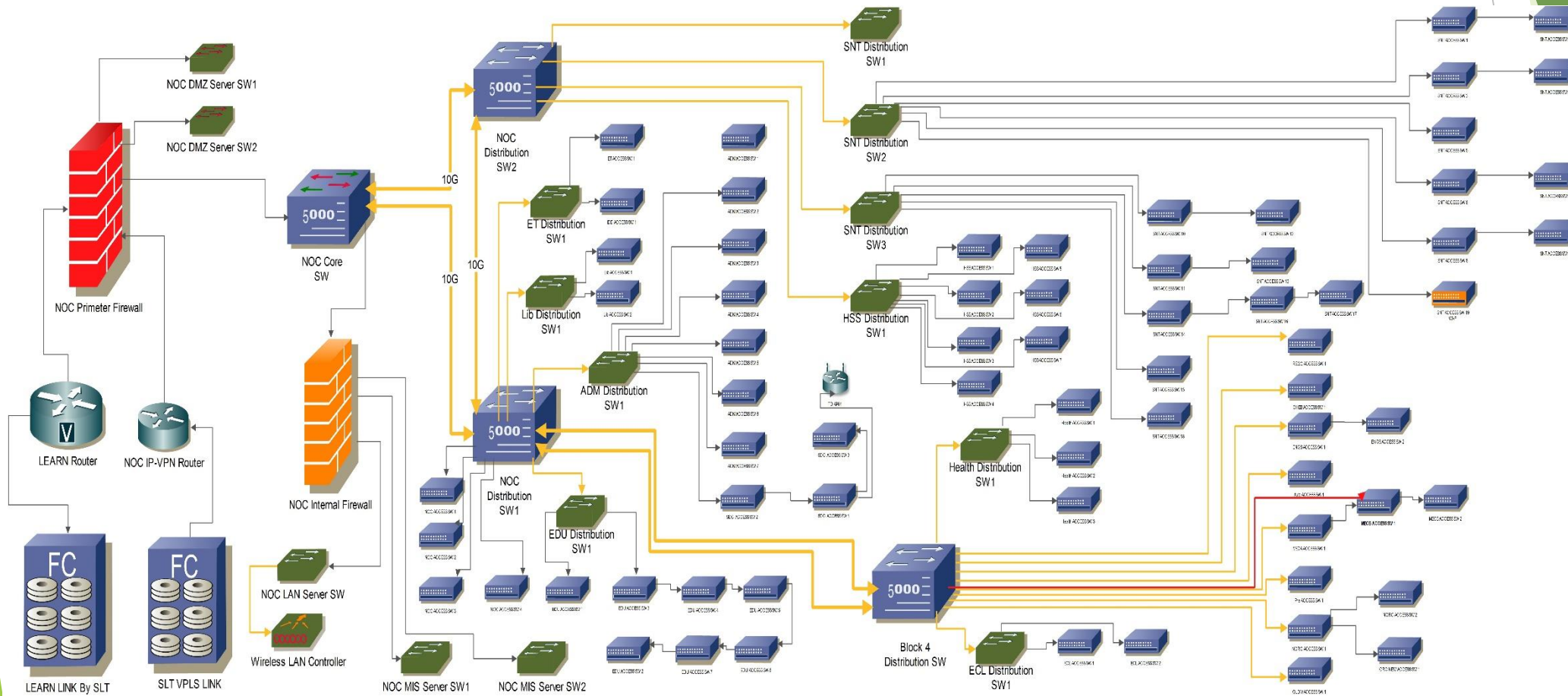
The OUSL readiness in IPV6 Deployment for total IPV6 network in year 2021
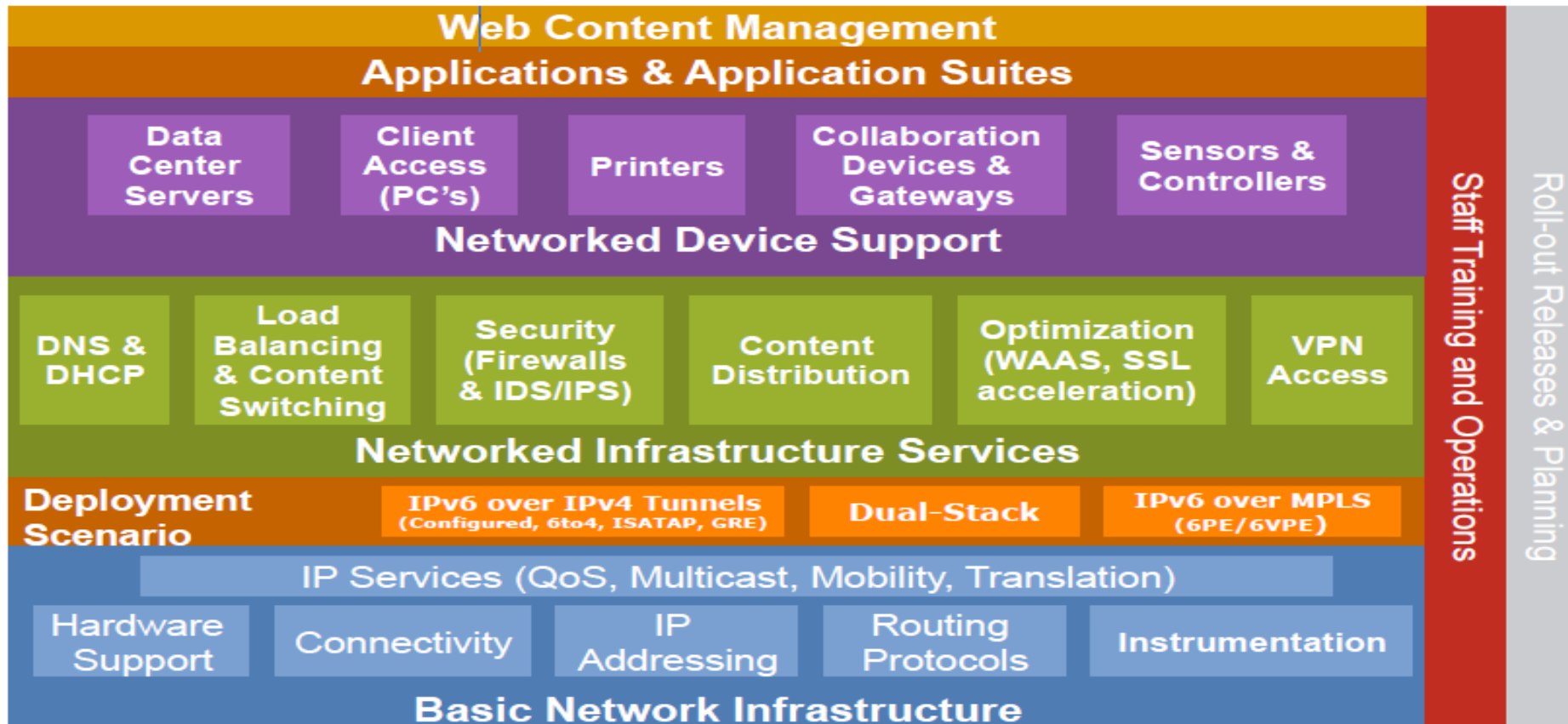
- Management awareness
  - Need to convince university top management in respect to IPV6 adoption, its driving factor, relevance, technical justification, compliance and benefits and above all resilience and contingency plan of fail over. Strong technical case is to be forwarded to IT Committe
- Infrastructure
  - All Cisco switches/routers are "IPV6 ready" except Cisco 1800 series being upgraded with IOS ver 15.
  - Data Center is equipped with Multi Layers of Cisco 4k and 6k and Cisco 3750 Switches with hardware forwarding capability
  - All Wifi controllers are Cisco and IPV6 ready
  - Combination of Linux and Windows 10 (SLAAC supported)
- Application
  - Legacy Management Information System will be upgraded to support IPV6
  - Moodle will be upgraded to IPV6 on new development
  - All application and system software will be phased out – A challenge in deed??

OUSL Approach on IPV6 Deployment

- We think seriously on Platform Specific view on performance, efficiency and other factors affecting the IP V. network (Resources exhaustion, stress etc)

- Dual stack deployment will be initially deployed. However, IPV6 only network will be fully implemented on particular segment where only Internet is required (For example: Student Wi-Fi access via IPV6)

- IPV6 network will be gradually deployed either using in-out or out-in method.

- ULA + Global or Global only : No decision yet. However, ULA is felt among system engineers. There again, question of How and Why?. Challenges?

- Prefix delegation is preferred. No NATting but ACL and firewalling

- Focus and Project planning based on scope of IPV6 approved and suggested by Cisco

The Scope for adoption of IPV6

The Scope of IPv6 Deployment

Question and Answers