

NETWORK SERVICES

SWITCHING REFRESH

SWITCH REFRESH

INTRODUCTION

Current Environment

- equipment 8+ years
- many models EOL
- insufficient access speeds
- does not provide PoE
- managed individually
- predominantly ZANI

SWITCH REFRESH

INTRODUCTION

Upgraded Environment

- gigabit access speed
- full PoE [48ports@15.4W or 24ports @30W]
- chassis based or stacked
- 10Gb uplink capable
- designed for MANI
- scaleable for future demands

SWITCH REFRESH

OBJECTIVES

- upgrade all access switches in academic buildings
- upgrade all aggregation switches in academic buildings
- install network jack block-out devices in all non-live ports [user side]
- consolidate switching in TRs
- ensure proper PDU in TRs
- document connections in copperDB web interface
- tidy/standardize patch cables

SWITCH REFRESH

NOT IN SCOPE

- server room routing or switching
- residence routing or switching
- affiliated University Colleges routing or switching
- upgrade, installation or replacement of UPSs
- new buildings [STC, EC1, EC2, EC4, EC4, EC5, NH Addition, BMH Addition]
- "office" switches
- unmanaged switches

SWITCH REFRESH

CONSTRAINTS, ASSUMPTIONS AND RISKS

Constraints

- migration window ends at 8:30am
- one building at a time

Assumptions:

- average of one closet per day
- access is provided to all rooms to install block-out devices

Risks:

- Space limitations for new/old to coexist
- overloaded power circuits

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EQUIPMENT

Chassis

- Cisco 4507RE (96ports expandable to 240ports)
- Cisco 4510RE (96ports expandable to 384ports)

Stacked

- WS-C2960X-48FPD-L

Stacked vs Chassis based on TR size (physical dimensions and number of switch-ports required)

- preference for chassis where appropriate
- minimum 96 ports for chassis

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STRATEGY

After pre-deployment preparations:

- maintenance window scheduled
- network specialist work on one TR at a time until completion
- time permitting additional TRs may be migrated during window
- faculty support staff informed on completion

After maintenance window

- block-out devices installed in all non-live ports
- live ports documented in network management software

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MANI

See:

<https://uwaterloo.ca/information-systems-technology/about/organizational-structure/technology-integrated-services-tis/network-services-resources/telecommunication-room-tr-guideline#MANI>

SWITCH REFRESH

DE-ZANIFICATION PROCESS

- active ports as seen in ONA recorded
- inactive ports that have been active in x number of months recorded as active
- list sent to faculty IT staff to review
- faculty IT staff asked regarding known future plans/expansions
- faculty IT staff asked regarding restricted areas [for installing block-out devices]

SWITCH REFRESH

ADDITIONAL INFORMATION

Network Guidelines:

<https://uwaterloo.ca/information-systems-technology/about/organizational-structure/technology-integrated-services-tis/network-services-resources/network-administration-guidelines>

TR Guidelines:

<https://uwaterloo.ca/information-systems-technology/about/organizational-structure/technology-integrated-services-tis/network-services-resources/telecommunication-room-tr-guideline>

Service Level Expectations:

<https://uwaterloo.ca/information-systems-technology/about/organizational-structure/technology-integrated-services-tis/technology-integrated-services-core-service-level>

Network Device Naming Standard:

<https://uwaterloo.ca/information-systems-technology/about/organizational-structure/technology-integrated-services-tis/network-services-resources/network-device-naming-standard>