Technology Goals for Peralta Community College (Berkeley City Campus)

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# ABOUT NETXPERTS

- Founded in 1996, focused on solutions, customer service is critical to us

- Area of coverage "West Coast"
  - 70+ Employees
  - 40+ engineers on staff
  - 5 CCIE engineers
  - Several high level engineers with
  - Vmware, Microsoft, Storage, Data Center

- Areas of expertise:
  - Mobility, and related applications
  - VoIP, Video & Unified communications
  - Data Center, Storage and Virtualization
  - Route/Switch and Security

- Vertical Market expertise:
  - Education
  - State & local government
  - Healthcare

- Purchasing Vehicles & Other:
  - College Buys 1 of 3 vendors, also CMAS, WSCA/NASPO
  - EWS application provider
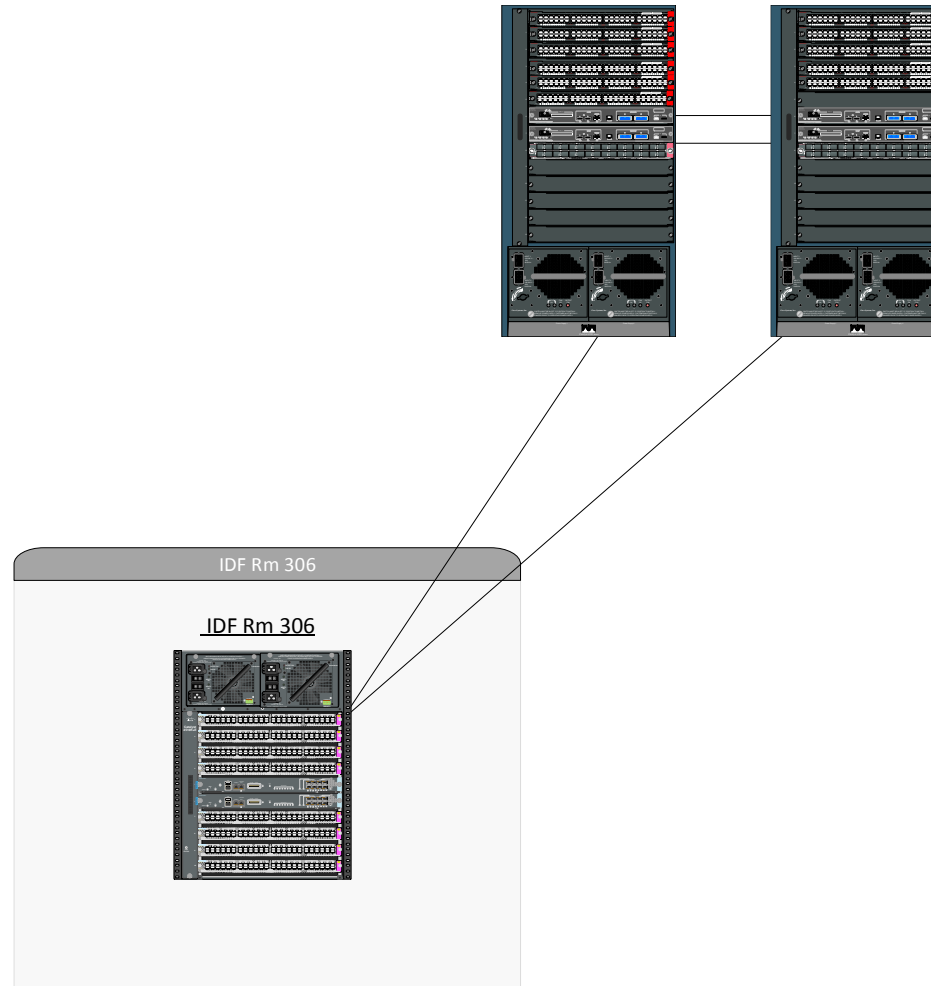
ACCESS SWITCH UPGRADE PROPOSAL
IDF RM 206

Berkeley City College
MDF 1st Floor Room 006

IDF Rm 206

IDF Rm 206
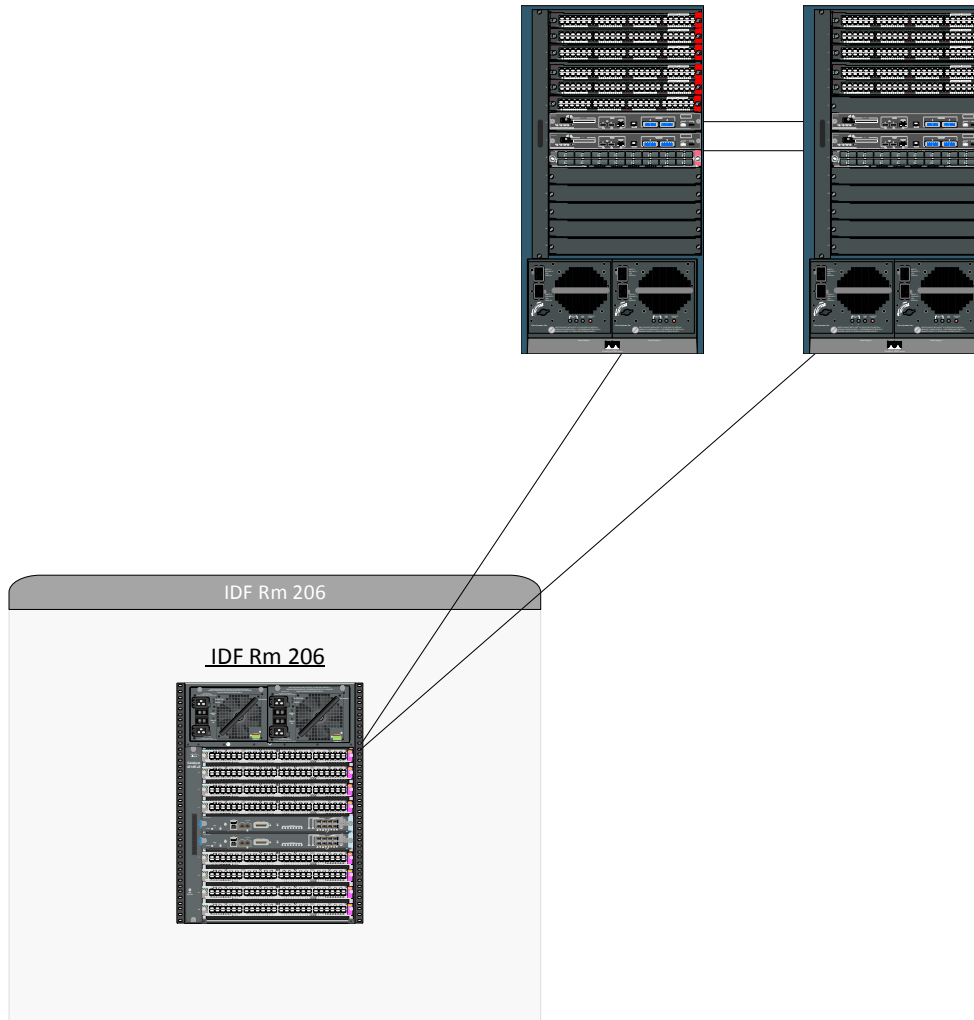
Access Switch Upgrade Proposal
IDF Rm 306

IDF Rm 306

IDF Rm 306

ACCESS SWITCH UPGRADE PROPOSAL
IDF RM 406

IDF Rm 406

IDF Rm 406
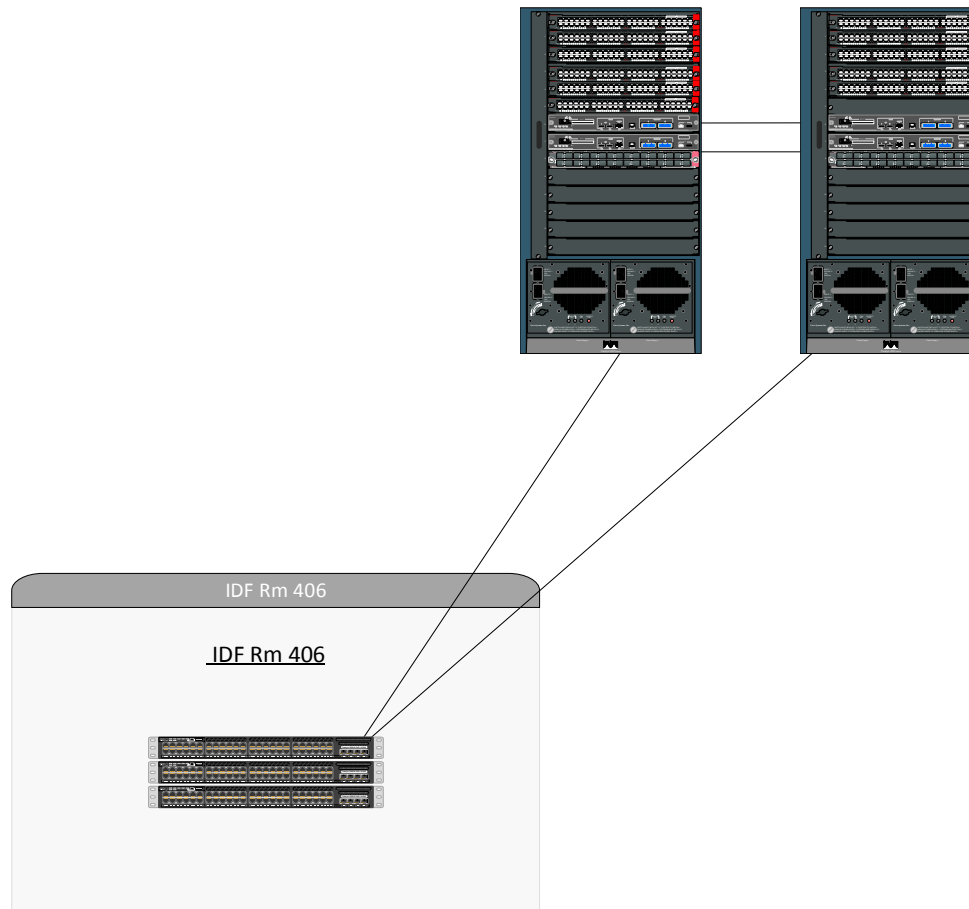
ACCESS SWITCH UPGRADE PROPOSAL
IDF RM 506

Berkeley City College
MDF 1st Floor Room 006

IDF Rm 506

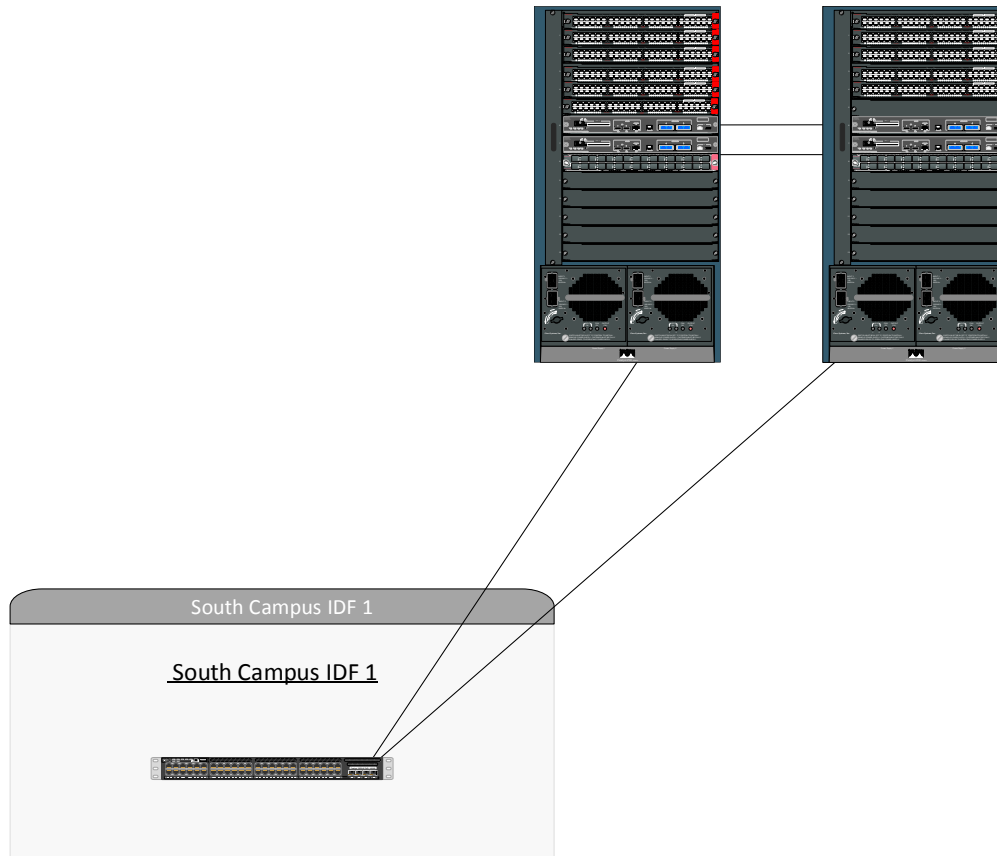IDF Rm 506
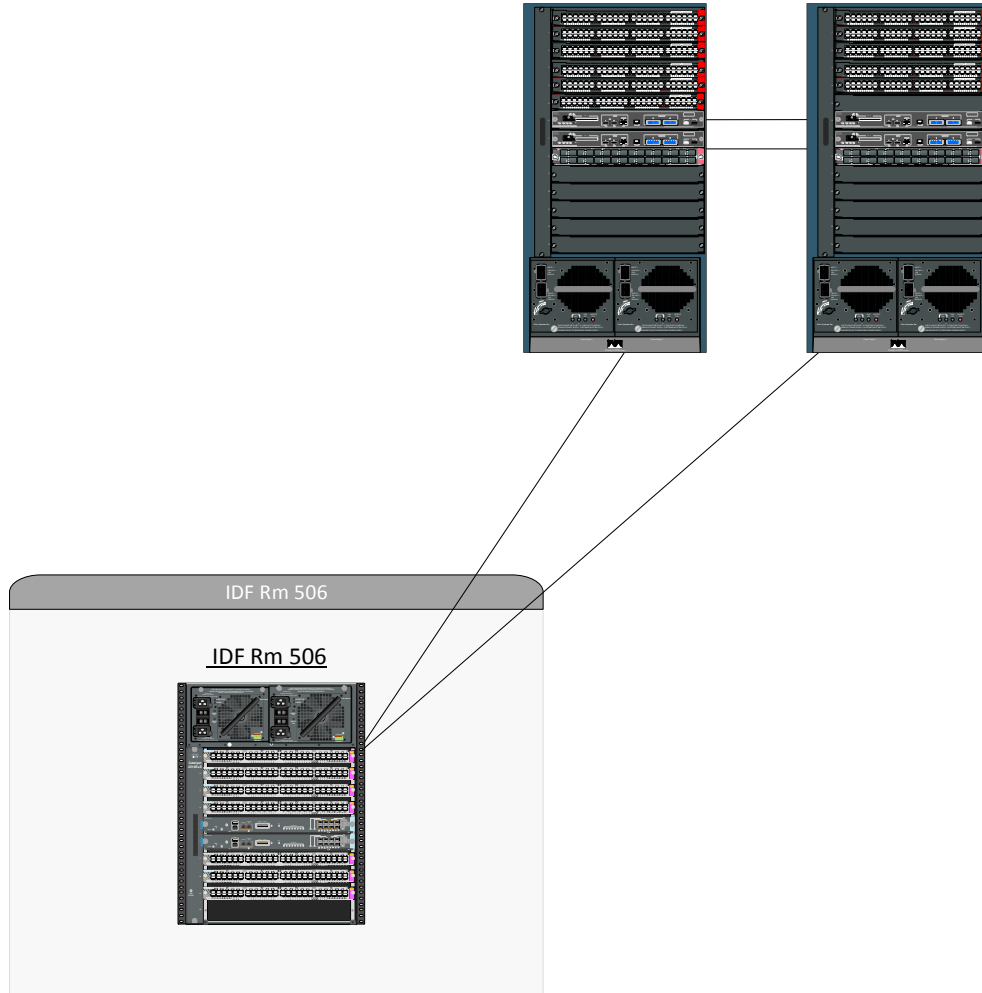
Access Switch Upgrade Proposal
South Campus IDF 1

Berkeley City College
MDF 1st Floor Room 006

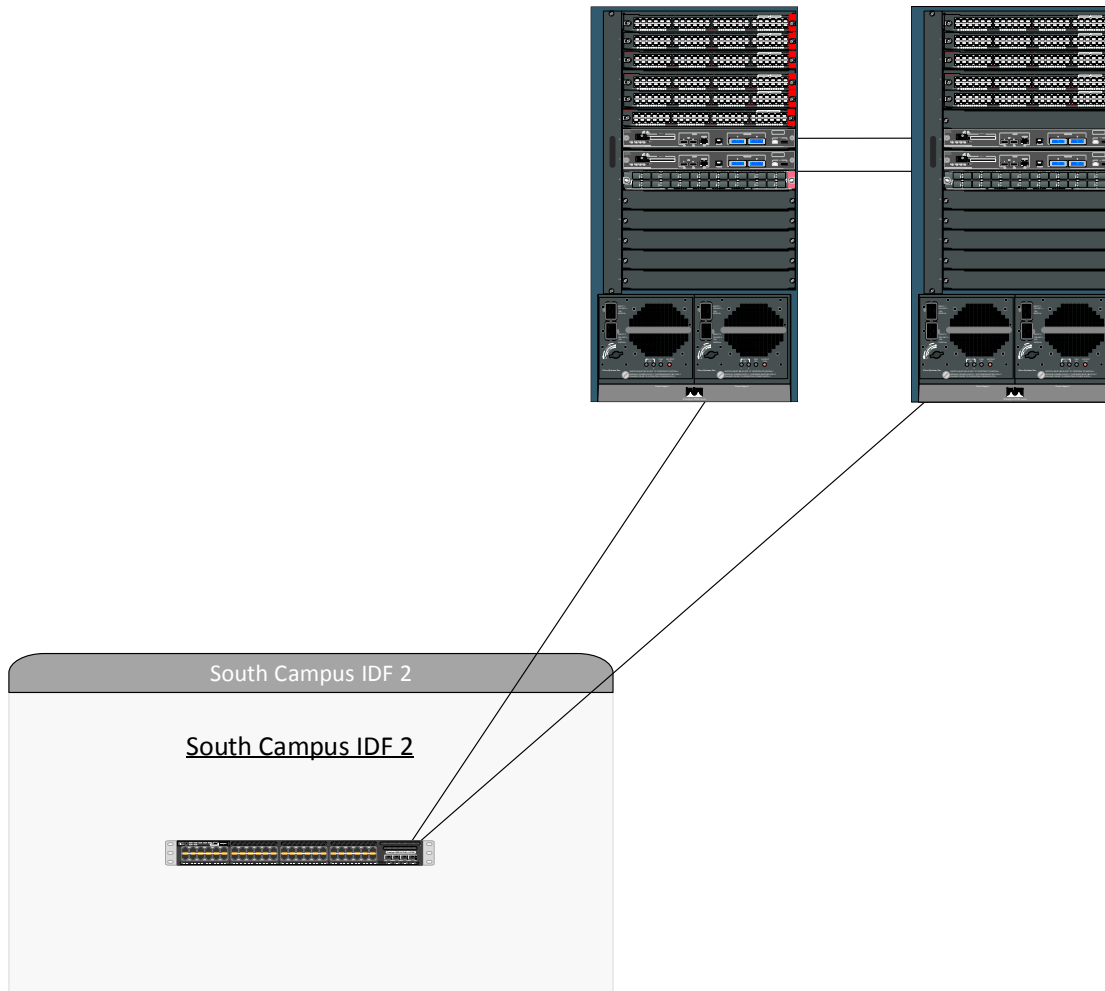South Campus IDF 1

South Campus IDF 1

ACCESS SWITCH UPGRADE PROPOSAL
SOUTH CAMPUS IDF 2

South Campus IDF 2

South Campus IDF 2

ACCESS SWITCH UPGRADE PROPOSAL
ALL IDFS

IDF Rm 206

IDF Rm 206

IDF Rm 306

IDF Rm 306

IDF Rm 406

IDF Rm 406

IDF Rm 506

IDF Rm 506

South Campus IDF 1

South Campus IDF 1

South Campus IDF 2

South Campus IDF 2
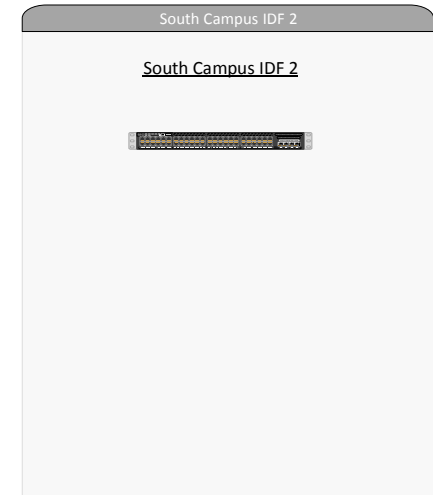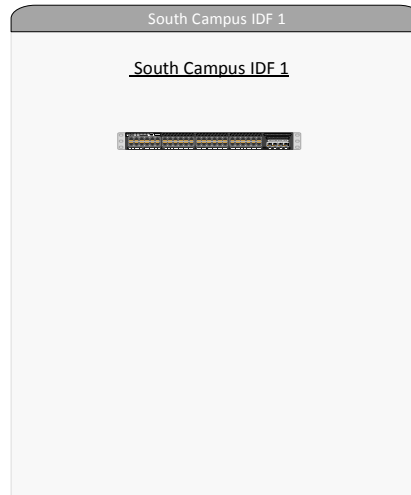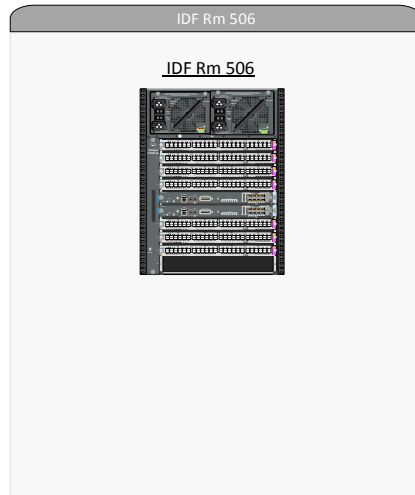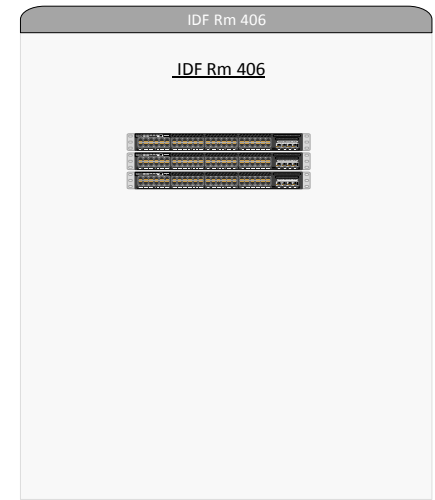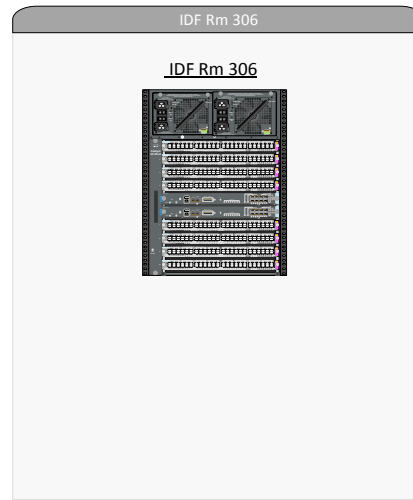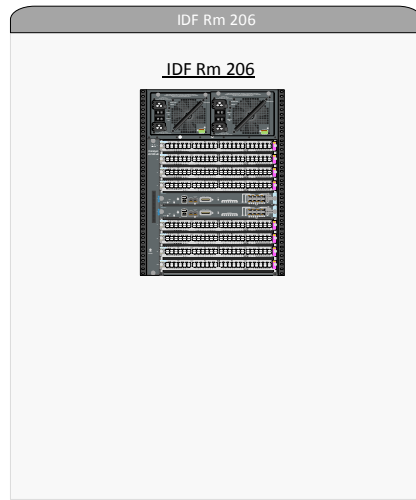
SOLUTION FEATURES

Feature	
Lifespan	5-7 years
StackWise Technology	160 Gbps per stack
Supports up to 10G POE for next generation endpoints. (e.g. 802.11ac Wave 2 AP's)	No
Core switching capacity	Supports up to 2 Tbps
Stateful inspection throughput (multiprotocol)	1.5 Gbps

ACCESS LAYER SWITCH – 5-7 YEAR LONGEVITY

- ## Catalyst 3650 POE Switch
  - Lan Base License with 10G uplinks.
  - Support Full PoE+ with energy-efficient Ethernet (EEE) supported ports
  - Supports StackWise-160 technology that provides scalability and resiliency with 160 Gbps of stack throughput
  - Dual redundant, modular power supplies and three modular fans providing redundancy

- ## Catalyst 4507R+E or 4510R+E
  - 2 Sup8E's
  - Provides scalability and eliminates single point of failure
  - Power over Ethernet Plus (PoE+; 30 W) capabilities on all ports in a line card simultaneously
  - Dual redundant, modular power supplies and four modular fans providing redundancy

FIBER CABLING
LEVITON & BERKTEK WITH 20-25 YEAR WARRANTY
ALL CAPABLE OF DOING 1G UP TO 40G SPEEDS

QNTY			MATERIAL
120	EA		Fast-Cure Adhesive Connector, LC (Aqua) 50/125um Multimode OM3
10	EA		LC-LC Fiber Patch Cord, 3 meter 50mm, OM3
1	EA		Opt-X Ultra 2RU Fiber Enclosure, sliding tray, accepts 6 adapter plates
5	EA		Opt-X Ultra 1RU Fiber Enclosure, sliding tray, accepts 3 adapter plates
10	EA		Optical Fiber Adapter- 12 Fiber LC 50mm, OM3, Aqua
1900	EA		12-strand PVC Fiber Cable 50/125, OM3
8	EA		Fire Rated UL Putty - sleeve 22Cu Inches
1	EA		T BAR WIRE, SCREWS, ANCHORS
1	EA		4 Post Rack
			Labor
			Pathway Discovery
			Cad drawings to show proposed pathways
			Installation of mule tape
			Installation of 12 strand SM fiber to exiting IDF's
			Dressing of hand holes
			New LC fiber bulkheads to minimize space
			New 4 post rack and installation
			Termination of fiber on LC connectors
			Certification of fiber backbone
			Project management time

BUSINESS OBJECTIVES

Business Objectives	Current Infrastructure	Future Infrastructure
Network Delivery and General Usage of Applications and Services	- New applications and services could fail, due to out dated infrastructure. (Access Layer infrastructure) - Existing network is at the end-of support life cycle (10 years). There is single point of failure between IDFs and MDFs and network performance is heavily degraded at times. - The existing network is at risk, if access layer switches go bad, there is no way to obtain new or replacement parts and/or support other than to search for used parts on the internet.	- New and existing applications and services will be fully supported. - New infrastructure provides redundant connectivity with 20 times more bandwidth to support new applications and services.
Leveraging VoIP, using Cisco phones for video, voice, and collaboration.	- Quality of Service (QoS), Jitter, delay – Voice and video quality will be unacceptable. - POE not available on all ports and not supported on majority of existing switches. - Will require additional power adapter for each phone.	- Supports end to end Quality of Service to ensure exceptional voice and video quality. - POE+ available on all ports and switches.
Smart Classrooms	- Infrastructure may not support all the technological tools such as, interactive whiteboards, cameras, tablets and applications.	- Provides robust infrastructure to support the latest tools and technologies to enhance the learning/teaching process of students and teachers.

BUSINESS OBJECTIVES

Business Objectives	Current Infrastructure	Future Infrastructure
Wi-Fi	- New wireless equipment is implemented, but it is running on old network infrastructure. Poor performance when you use the following devices and applications: • mobile devices (e.g. iPhones, Android, iPad, Surface) • laptops • Smart Classrooms (e.g. Smart Board) • surveillance cameras • security phones • IP radios • distance learning • online curriculum • BYOD	- Provides robust infrastructure for high availability and high performance required by today's advanced applications. - Provides higher bandwidth for faster access.
Distance Learning	- Existing network is not designed to prevent security threats. - Aging network infrastructure will cause intermittent disconnections in video, audio and conference calls.	- Provides a secure remote log-in for faculty and students. - Provides exceptional video and audio performance in order to provide quality access to education for those who have no other opportunities due to work, family or physical limitations.

NET XPERTS INC.
All Net, All the Time

BUSINESS OBJECTIVES

Business Objectives	Current Infrastructure	Future Infrastructure
Collaboration Tools	- Limited bandwidth to support cloud applications, streaming video and other campus resources.	- Improves application interaction and video quality with higher throughput.
Disaster Recovery (DR) Infrastructure	- T1 connectivity between the campuses and the District Office does not provide sufficient bandwidth for data replication.	- Provides high speed processing for data replication. - Provide necessary infrastructure to support future connectivity to the DR location.
Security Cameras	- POE not available on all ports and not supported on majority of existing switches. - Existing network does not provide enough bandwidth to support video traffic.	- POE+ available on all ports and switches. - Provides more bandwidth to support video traffic.

BUSINESS OBJECTIVES

Business Objectives	Current Infrastructure	Future Infrastructure
Cloud Applications including E-mail	- Existing network is not ready for cloud based applications due to the lack of bandwidth.	- Provides robust infrastructure for high availability and high performance required by today's advanced applications.
PeopleSoft	- Existing infrastructure does not provide optimal performance for PeopleSoft.	- Hardware and infrastructure will provide high performance and redundancy to support the applications.
Single Sign On (SSO)	- Existing infrastructure is not fully compatible with newer SSO technologies.	- Proposed solutions are fully compatible with SSO.

Q&A