



PROJECT MANAGEMENT
CENTER FOR EXCELLENCE

A.J. CLARK SCHOOL OF ENGINEERING
Civil & Environmental Engineering Department

UNIVERSITY OF MARYLAND
2026 PROJECT MANAGEMENT SYMPOSIUM

Leading Engagement and Change in UMD's Policy-Driven Network Transformation

Natalie Gerratt and Kevin Prem, PMP

PMSYMPOSIUM.UMD.EDU

Introduction



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Kevin Prem
Project Manager
Division of IT



Natalie Gerratt
Network Architect
Division of IT

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Agenda

- Background
- Scope
- Lessons Learned
- Key Takeaways
- Questions



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- ~41,700 students
- 14 colleges and schools
- ~11,000 faculty and staff

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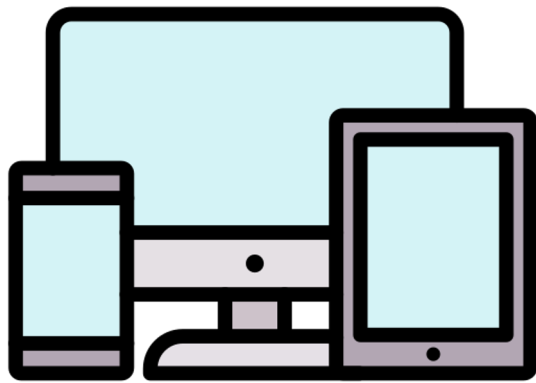


Background

Typical Day on UMD Network



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~122,000 Devices



~52,000 People

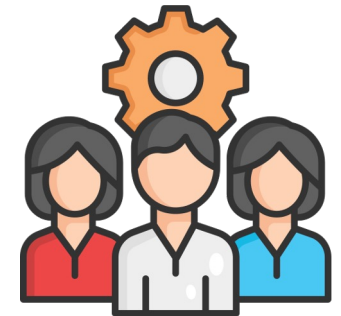


...enough to fill Xfinity Stadium 3x

Highly Diverse Use Cases



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Scope

Where did we start?



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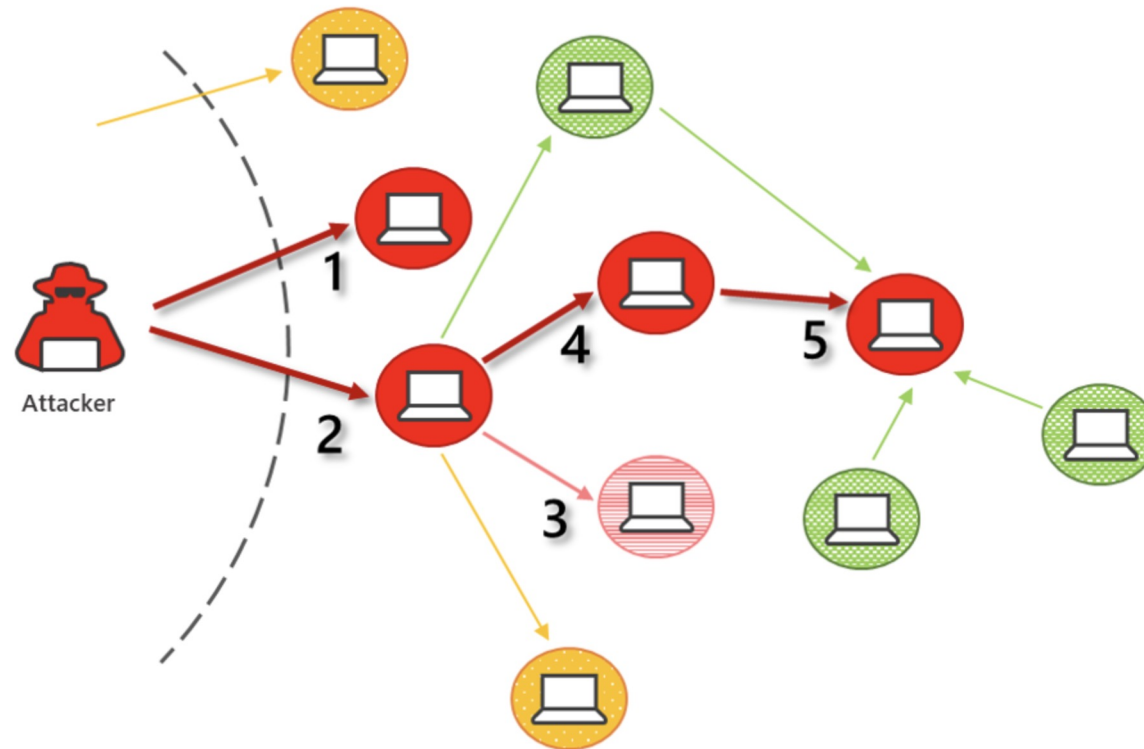


Wide Open

Why does it matter?



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Education Sector is highly vulnerable



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66% Experienced
Ransomware

Kick Everyone off the network

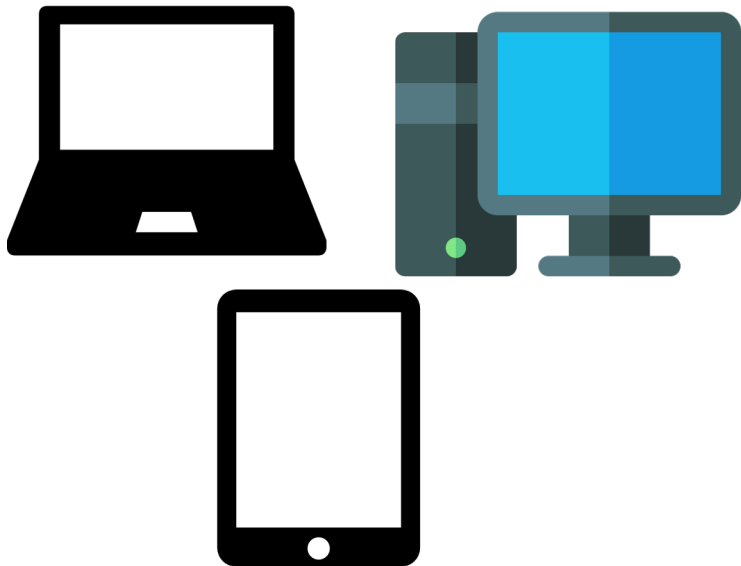


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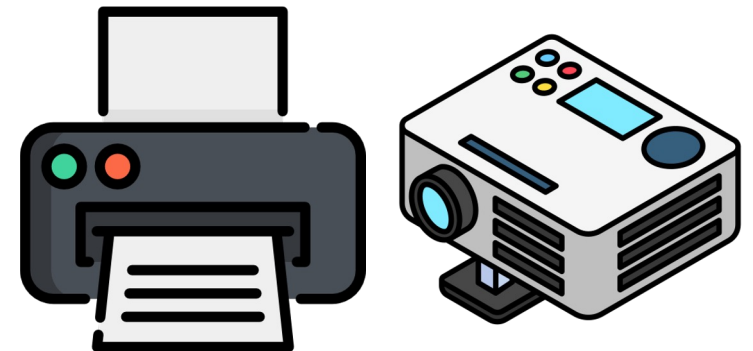




User Interactive Device



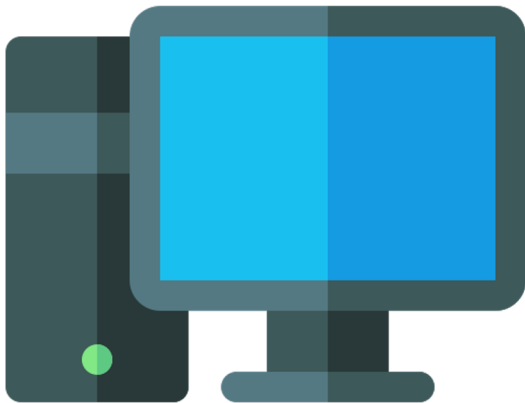
Networked Resource



Default Policy Set Up



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Access levels based on device



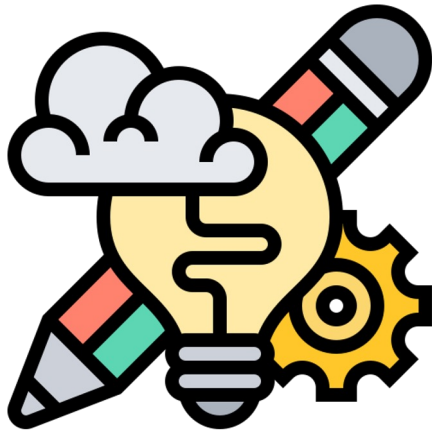
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Device Type	Trust	Access
	Low	Internet only
	Medium	Limited
	High	Broader

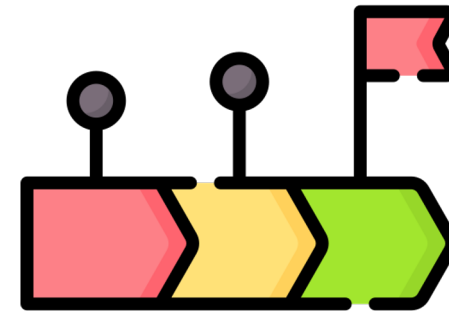
We're making good progress!



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Technical Solution Implemented



~50% Migrated

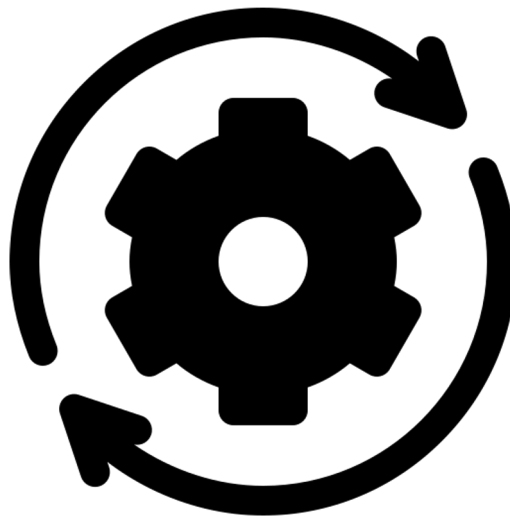
We're starting to realize our goals



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Microsegmentation



Lower
overhead

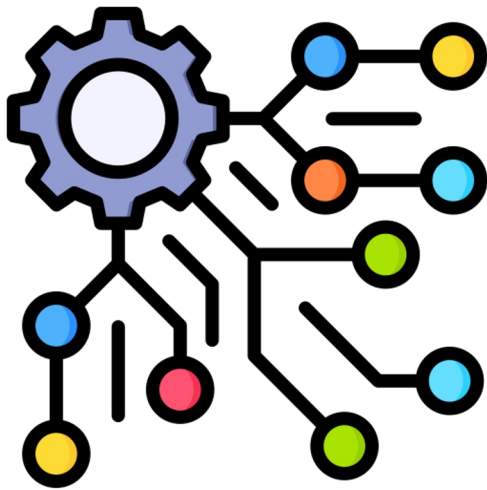


Improve User Experience

Bleeding Edge Implications



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Advanced Architecture



Lots of Issues



Finalizing the Design



Designing the
Network

Planning the
Rollout



Designing the Network



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Engage Units Early to Enable IT Transformation



Critical Teams



What are the end goals?



Project Example: An IT Project

settings_input_c
omponent

Network

security
Security

fingerprint
Identity

desktop_window
s

**Enterprise Desktop
Management**

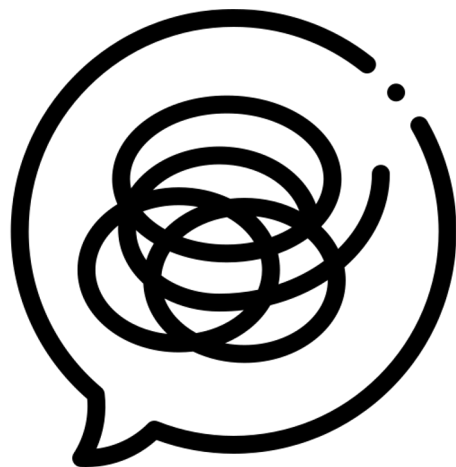
headset_mic
**Service Desk /
Communications**

business
Local IT Units

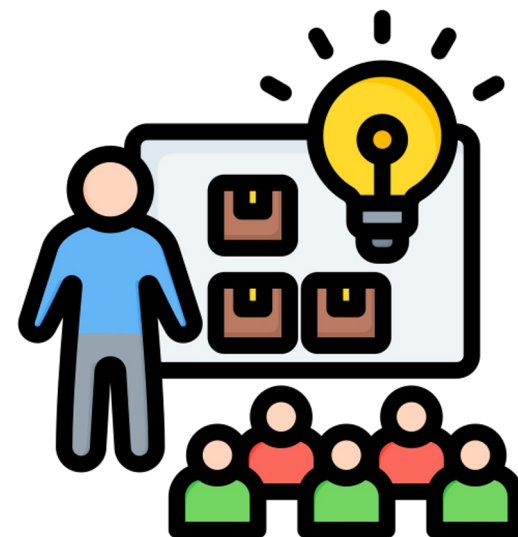




Use Workshops to Drive Key Decisions



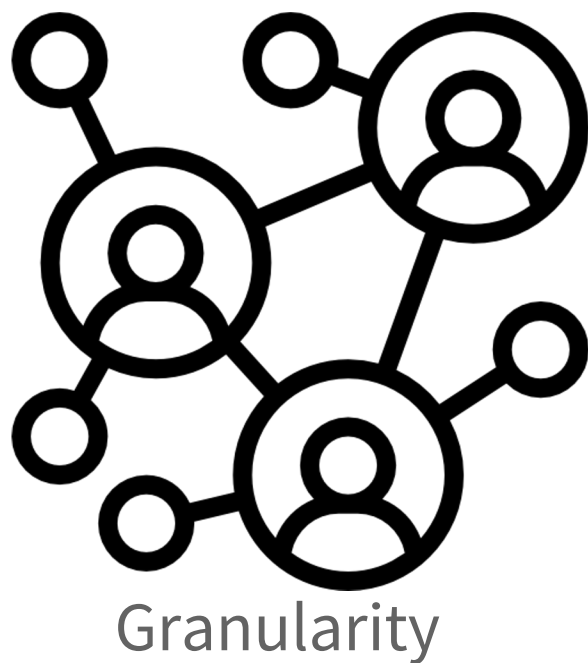
Difficulty Making Decisions



Highly Structured Workshops



Project Example: Segmentation Granularity



Balancing



Security

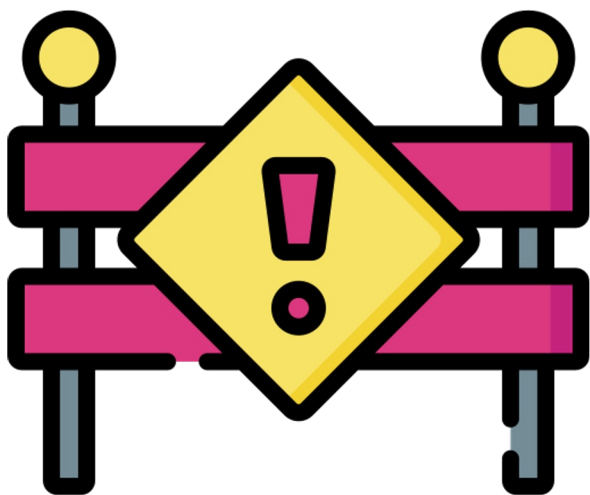


Manageability

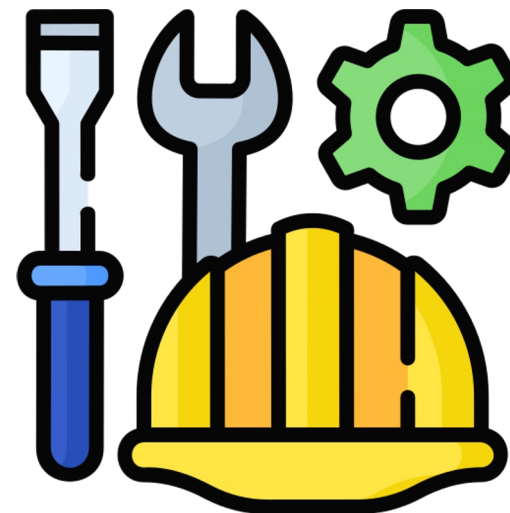


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Slow Down to Get the Design Right



Rushing Led to Issues



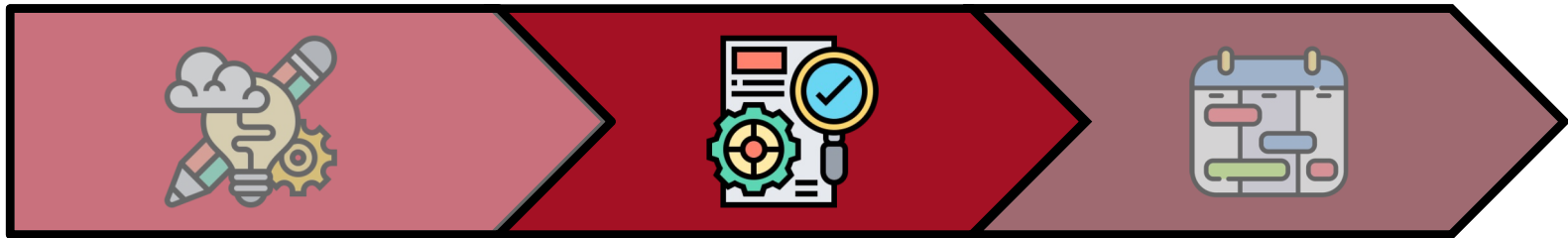
Fully Fledged out Lab

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Finalizing the Design



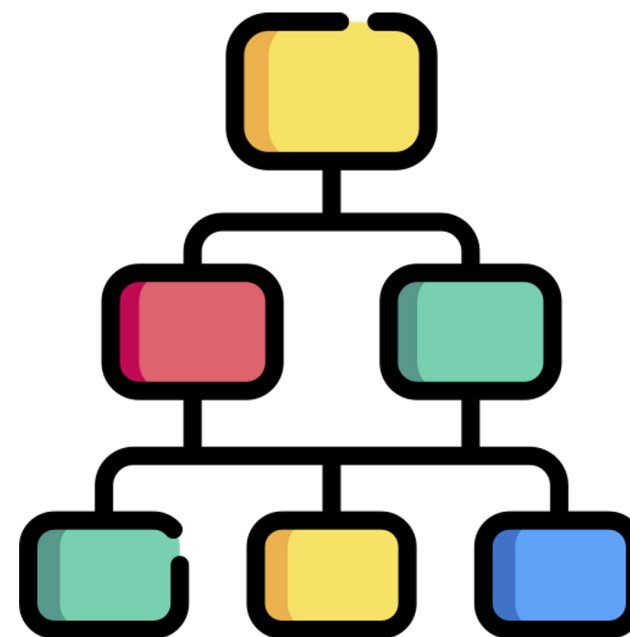
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Clarify Who Owns Which Decisions

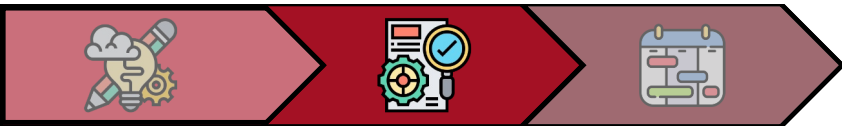


Decision Churn



Governance

Process



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Project Example: TLS Certificate Expiration



1 year vs 5 Years

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Focus on the critical path issues



Too Many Workstreams

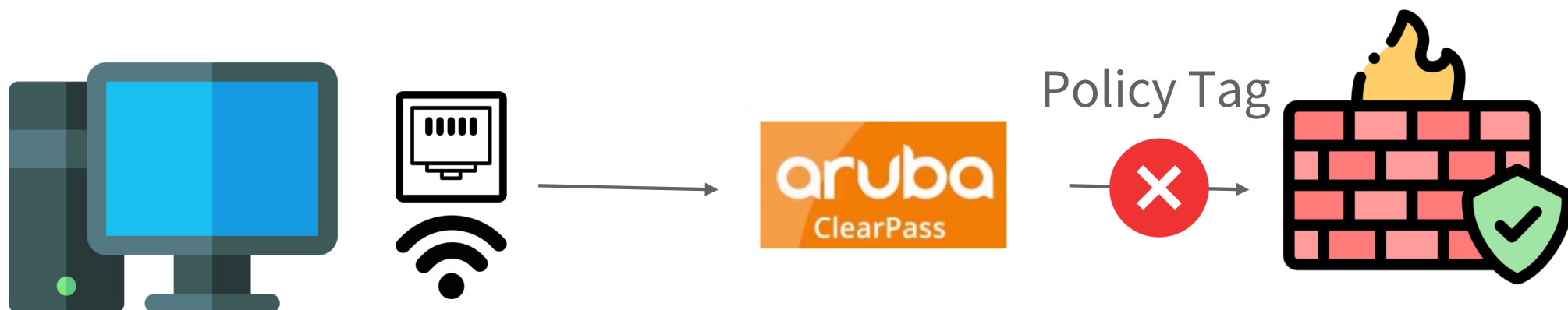


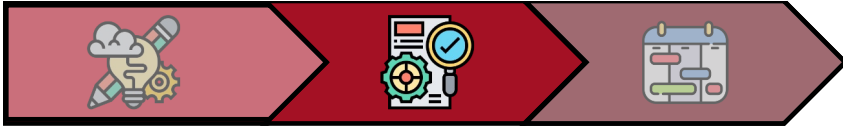
Focused on Critical
Path

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Project Example: Clearpass to Firewall





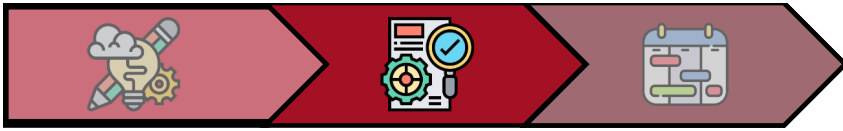
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Robust regression testing is vital



Rollout Framework

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Test the design in a production environment



Real Environment = Real Use Cases



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Project Example: Printer Issues



- Dropped off when sleeping
- Needed special Role



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Planning the Rollout

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We have a lot of Local IT groups



~53 Groups

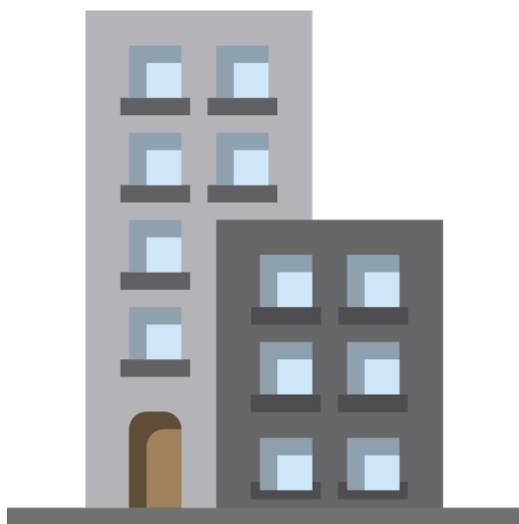


Lot of Changes



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Vendor Approach Wouldn't work



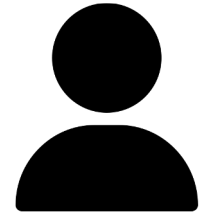
Generic and impersonal



Extreme Anxiety



Change Management First Approach



- Ability to test specific devices
- Ease into the new Network Environment

Ability to Self Migrate

Welcome to Network Management Configuration Update System

Migrate Port

Search and migrate network device configurations.

[Go to Migrate Ports](#)

Port Search

View current and historical port configurations.

[Go to Port Search](#)

Migrated Ports

View all the ports that were already migrated.

[Go to Ports](#)

Failures

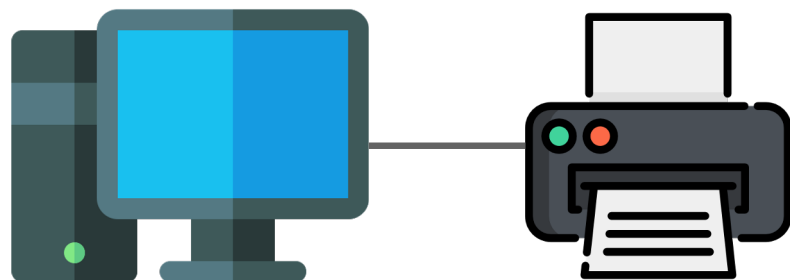
View and analyze network configuration failures.

[Go to Failures](#)

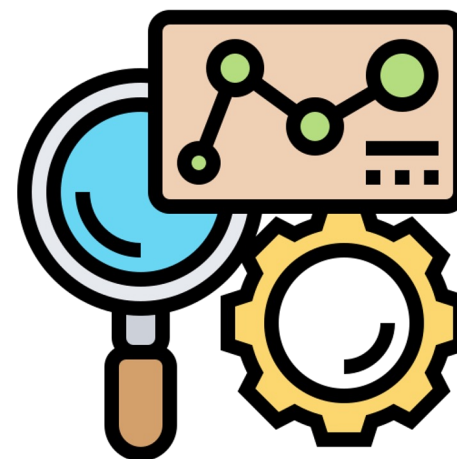


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Listen and Respond to Concerns



Remediate Mappings



Diagnostic Portal

MAC address is required.

Physical Layer

BOUNCE PORT

IP	10.180.13.41
DNS	arecgradlab.resource.dyn.umd.edu
Site	76-Symons Hall
Switch	076-3D-sw2
Port	1/1/26
Room	3205
Jack	076-3D041
Last Seen	4/6/2026, 1:32:22 AM

Policy Network Details

MAC	a0dde53965be
IP	10.180.13.41
User	gradlab
Online	Yes
Managed Cert	No
BYOD	No
Policy VLAN	Yes
Connection Type	WIRED
User Type	Networked Resource
Access Level Role	lvl4_dept-printer
Access Group	AGNR - Agricultural and Resource Economics
Internet Access	Yes
Roles	[User Authenticated], any-umd-user-or-guest, iot-agnr-arec-all, lvl4_dept-printer

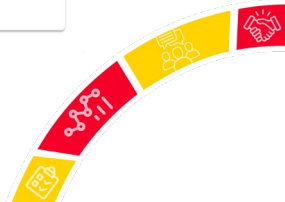
Device is open to users from:

UMD and Guest	☒ Enabled
UMD only	☒ Enabled
Users on Any Device on Access Group	☒ Enabled
Managed Device on Access Group	☒ Enabled
Users on Managed Device on Access Group	☒ Enabled



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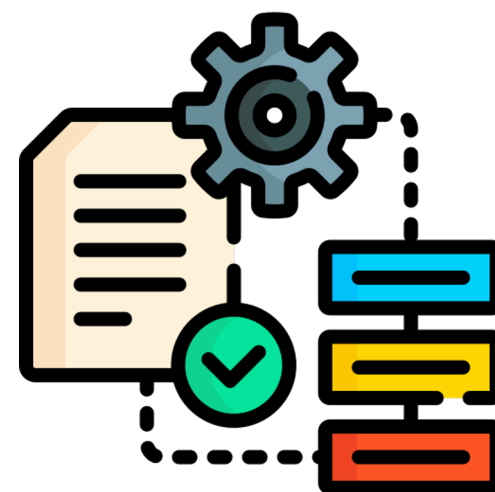
Pilot the rollout process



Feedback



Enhance



Project Process

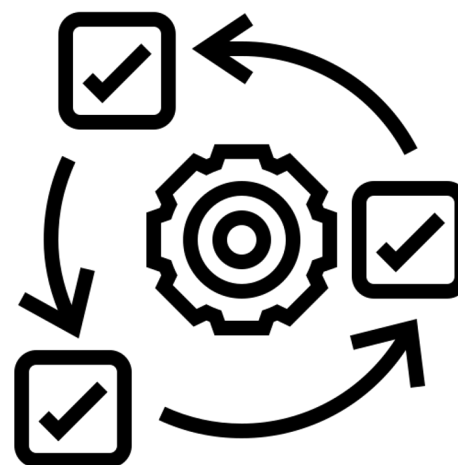


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Structured Onboarding



Detailed Agenda

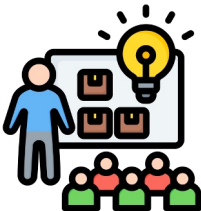


Migration Process

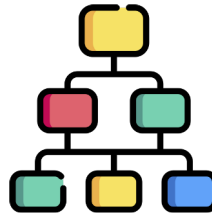
Key Takeaways



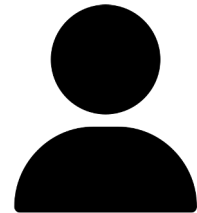
Design the Network



Finalize the Design



Plan the Rollout



Questions?



Evaluation and Questions



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