C769 Task 1 IT Capstone Topic Approval Form

The purpose of this document is to help you clearly explain your capstone topic, project scope, and timeline and to ensure that they align with your degree emphasis. Without clearly addressing each of these areas, you will not have a complete and realistic overview of your project, and your instructor cannot accurately assess whether your project will be viable for the purposes of these courses.

Complete this form and send it (via UGCapstoneIT@WGU.edu) to your instructor for approval. Once approved, you will receive a signed document in PDF format that you can upload as part of Task 1.

It is the policy of Western Governors University (WGU) that student capstone projects should not be based on or include, without authorization, restricted information. Restricted information is any proprietary or classified information or material belonging to your employer or any other third party. You acknowledge that you will not use restricted information in your capstone project without obtaining the third party's permission by using the "**IT Capstone Project Restricted Information Authorization Form**" found in the Supporting Documents section of Task 1.

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PROGRAM MENTOR: Cody Anderson

DEGREE EMPHASIS: Bachelors of Science, Information Technology

ANALYSIS:

Project Topic –
Arista Enterprise Switch Replacement Project for Sicromoft Corp, - West Campus Region.

Problem Statement or Project Purpose –
As a global leader in cloud computing, enterprise software, and cybersecurity, Sicromoft Corp. operates in a highly demanding and performance-sensitive environment. To maintain its leadership in innovation and ensure compliance with internal security standards and industry best practices, it is crucial to upgrade all legacy enterprise network switches across all 7 buildings in the West Campus region. Replacing outdated hardware with modern, enterprise-grade switches will enhance network reliability, throughput, and scalability. This upgrade will also mitigate the risks of performance degradation and security vulnerabilities while ensuring continued support for future technology initiatives and business growth.

DESIGN and DEVELOPMENT:

Project Scope

a. Project Goal:

i. The primary goal of this project is to upgrade the network infrastructure across all seven buildings in the West Campus region, Studios A through G, by replacing the existing outdated legacy switches (Arista DCS-7010T) with high-performance, next generation switches (Arista DCS-7010TX-48). This upgrade will ensure network reliability enhancement, upgraded speed, and scalability in alignment with current operational demands and future growth.

ii. Supporting Objectives include:

1. Analyze and create a network assessment of the current switch and network topology
2. Implement network configuration migration plan to ensure previous network configuration is saved to prevent extended project time
3. Gather and configure the new enterprise network switch to match network configuration of the legacy network switch
4. Implement the switch replacement with minimal service interruption through phases
5. Validate connectivity and performance after installation
6. Perform a wipe configuration on old network switches due to security reasons
7. Document the new configuration and provide information to network engineers and developers
8. Update the asset management inventory to ensure proper tracking of IT equipments for support in the future

b. Project Outcomes and Deliverables:

i. The outcome of this project includes:

1. Reliable and faster network performance within the region
2. Increased bandwidth and reduced latency to ensure developers across the region may able to access Sicromorp services quicker
3. Improved support for modern applications and network segmentation
4. Enhanced security and manageability and increase support for the next upcoming years

ii. Project Deliverables may include:

1. Physical validation of the newly configured network switch, showing labeled cables, LED status, and working as expected
2. Console output logs to provide results of connectivity
3. Timeline and actions taken during the switch replacement

c. Projected Project End Date:

I. This project should be completed within 6 months, approximately by the end of this year.

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MPLEMENTATION and EVALUATION:

Describe how you will approach the execution of your project –

1. Before starting the replacement, provide console access for the network engineer to configure the current network switch and confirm if it can no longer obtain system upgrades as the legacy network switch is nearing its end. Identify any performance bottlenecks and any risks of failure.

2. Replicate the pre-configured network configurations of the legacy network switches from each building and export it to a physical media. This ensures all configuration stays the same when importing to the new switch. This will save time as manually configuring can take time, and mistakes could occur.

3. Prepare the new network switches and stage them to their designated environments. Pre-configure the network switches using the physical media, tied based explicitly on building location.

4. Coordinate with developers and network engineers that reside the buildings mentioned and request for a downtime, either during off-hours or in a span of a few hours. This requires constant communications between the developers, network engineers, and data center technicians, providing the necessary updates.

5. Replace the switches one at a time, floor-by-floor, area-by-area, and building-by-building. After installing and implementing any firmware updates to the new switch, immediately test the connectivity and configuration by contacting the network engineers.

6. Validate the success of replacing each network switch, providing output logs, confirmation from network engineers and developers, and document results.

7. Once each phase for each building has been fully completed, prepare a wipe configuration for each legacy switch to ensure sensitive information is entirely wiped.

8. Access the asset management system, remove the old legacy switches, and update the new network systems in the Asset Database for IT auditing and tracking purposes.

9. Complete the final project report, provide any updates, such as network connectivity confirmation from supporting parties, and close the project.

IRB REVIEW:

☑ **This project does not involve human subjects research and is exempt from WGU IRB review.**

Charles Paddock

COURSE INSTRUCTOR SIGNATURE:

COURSE INSTRUCTOR APPROVAL DATE: 6/18/2025