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ORCHESTRATION AND CYBER SECURITY

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TITLE AND IMPLEMENTATION

Problem Statement:

Developing a GUI based hardening script for Ubuntu operating system with flexibility to cater for organizational security policies

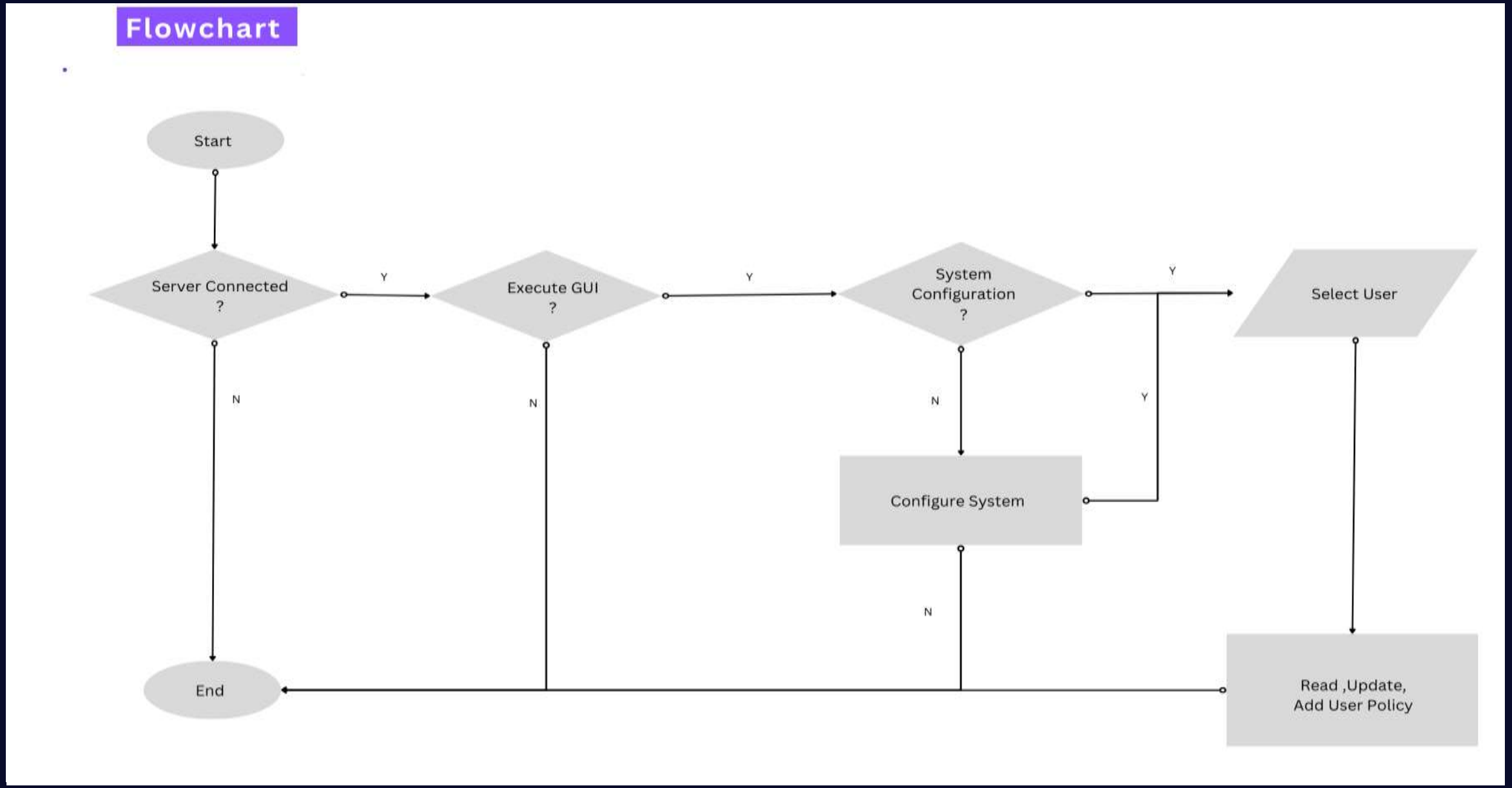
Description:

- Hardening of an operating system involves implementation of security measure to make the system compliant with the security policies of the organization.
- The procedure for hardening should be intuitive to allow ease of use by personnel with minimal IT skills.
- The goal of this problem statement is to generate a script which is undertakes hardening of Ubuntu OS using an GUI based approach.
- During the hardening process, the user should have the flexibility to make settings based on the organizations IT security policy provision like blocking SSH, USB, ToR etc.
- The grading of tool will be based on hardening functions implemented, attention to user experience and flexibility to take user settings.
- Developer should remember that security is of utmost importance.

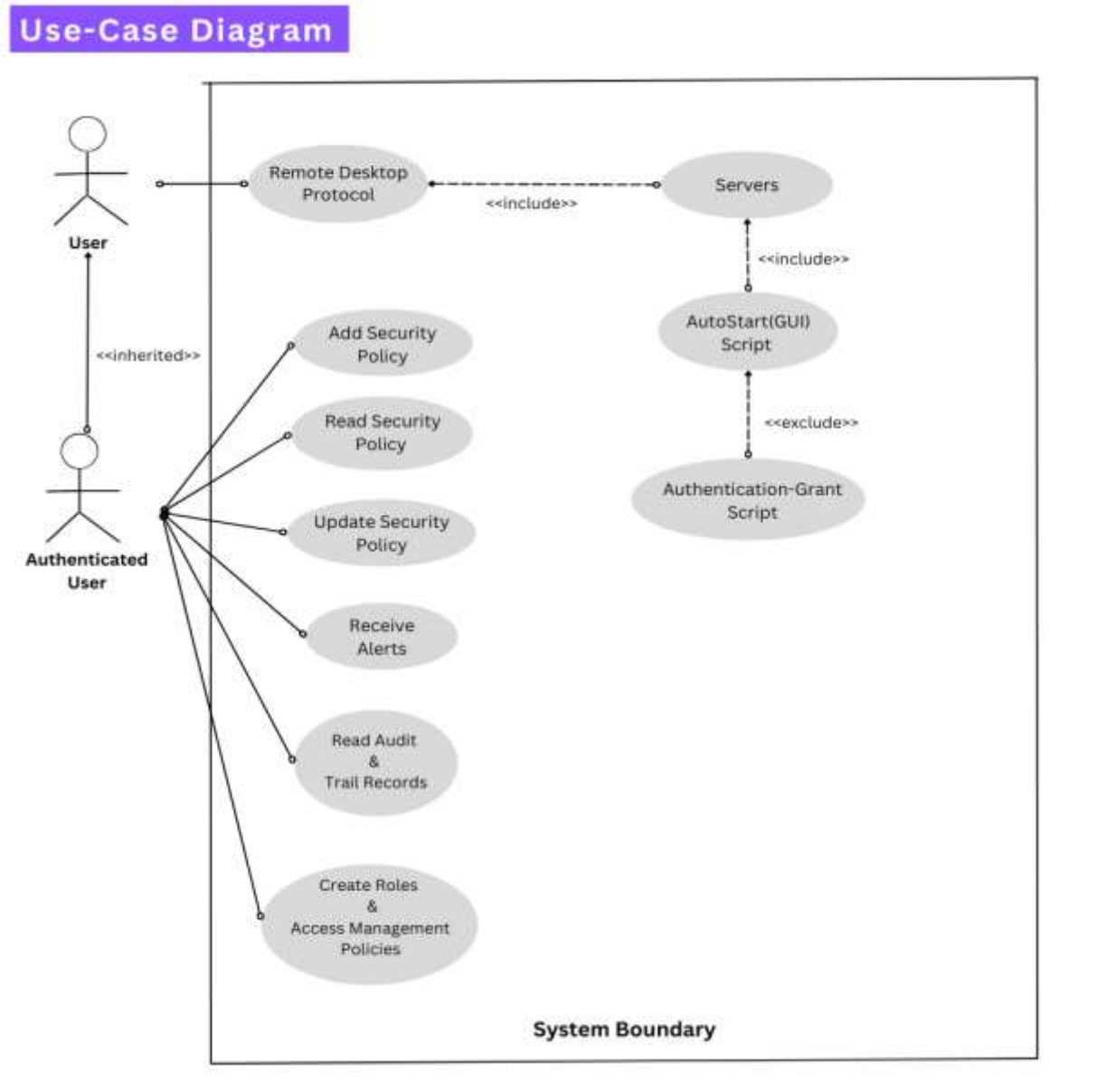
Idea Details:

- Creating an orchestration system which is to streamline and optimize the flow of data, task and actions across different systems.
- White-listing to authorize applications and prevent both known and unknown threat providing precise control.
- Generating period reports and emergency alerts when a security policy breach is recorded.
- Creating a policy foundation which can be kept dormant or active for flexible access management control.

FLOWCHART


Flowchart
Start
Server Connected ?
Y
Execute GUI ?
Y
System Configuration ?
Y
Select User
N
N
N
Y
Configure System
N
End
Read ,Update, Add User Policy

USE CASE DIAGRAM



Description:

- **Policy:** A set of written rules and guidelines to safeguard an organisations assets and critical information by defining access controls, authentication and acceptable guidelines.

- **Authentication-Grant Script**: This fires up after the administrator configures the server system for other users.

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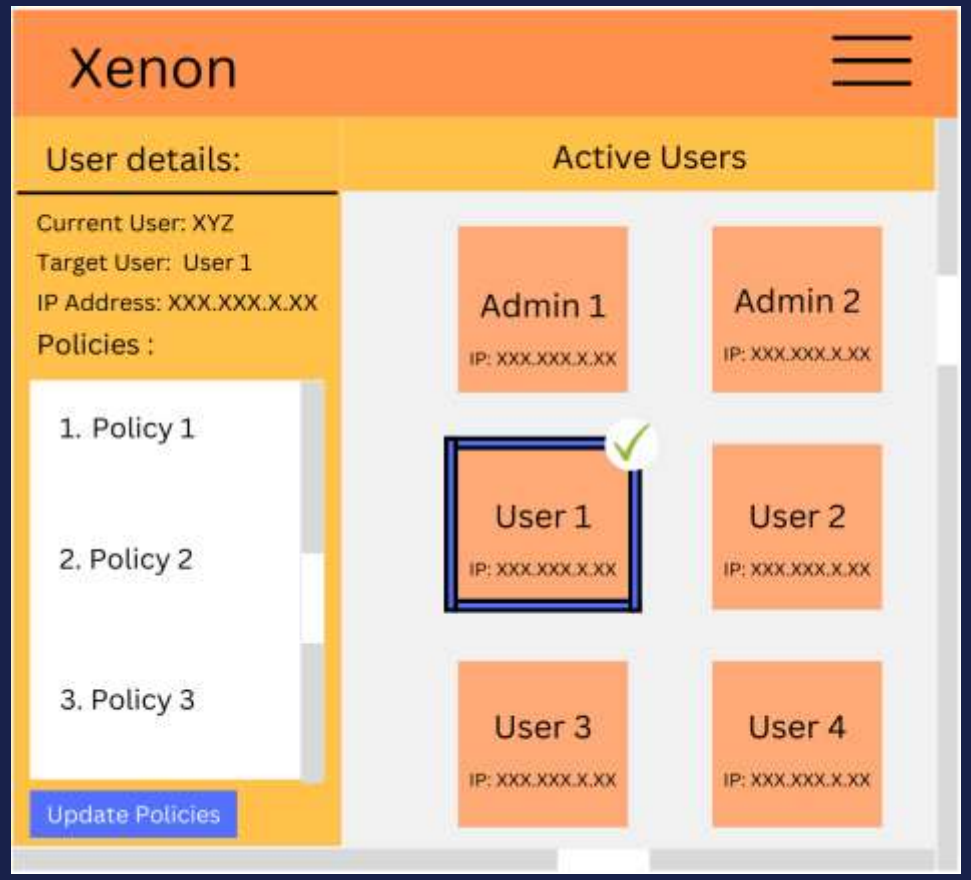
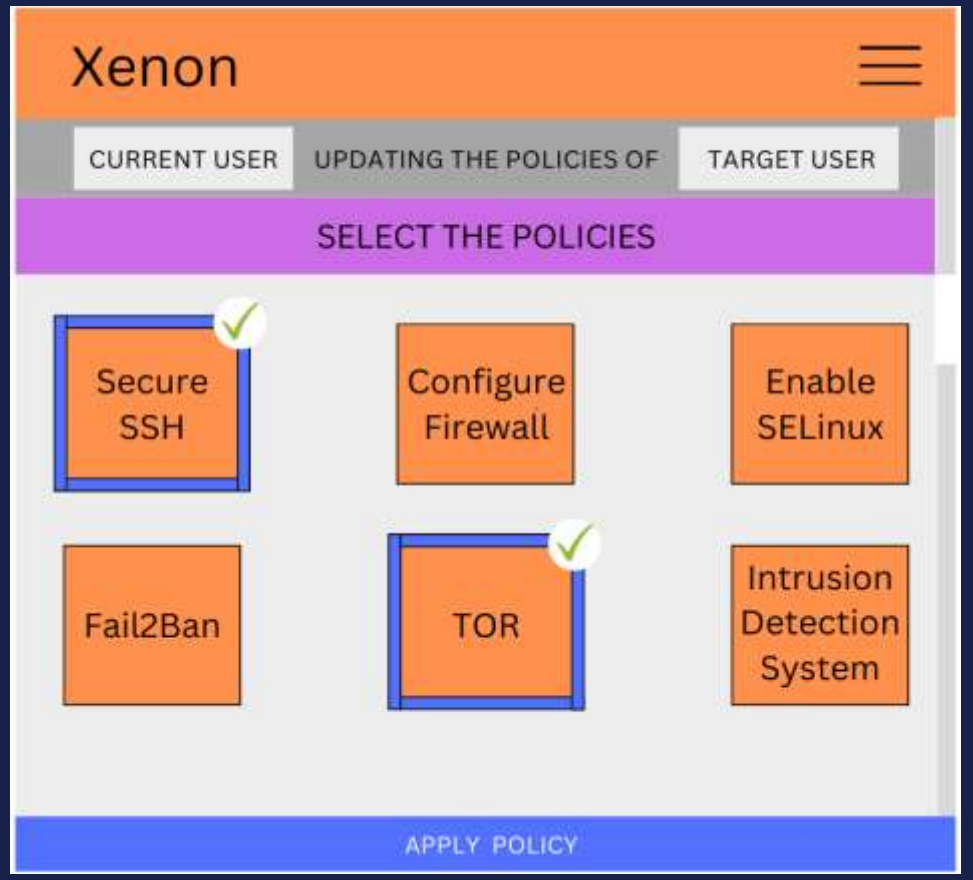
BLUEPRINT





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CONCLUSION

Cybersecurity threats and attacks have evolved significantly over the years, with various types of malware, ransomware, phishing, and other malicious activities continually emerging. Organizations and security researchers regularly analyze and report on cyber threat trends, naming a few famous ones,

- **Shamoon (or W32.Disttrack)**
- **Flame (also known as Flamer or Skywiper)**
- **LinkedIn and eHarmony Data Breaches**

This software has the potential to reduce vulnerabilities, apply security patches, and enhancing overall cybersecurity posture by hardening the Ubuntu OS.

It has a simplistic Graphical User Interface(GUIs) which makes updating the security policies easier, faster and more flexible for any IT professional with standards comparable to Center of Internet Security(CIS) guidelines.