

Department of Artificial Intelligence and Data Science

23ITT204 – Computer Networks

II B.Tech – AI&DS / IV SEMESTER

UNIT I :INTRODUCTION AND APPLICATION LAYER

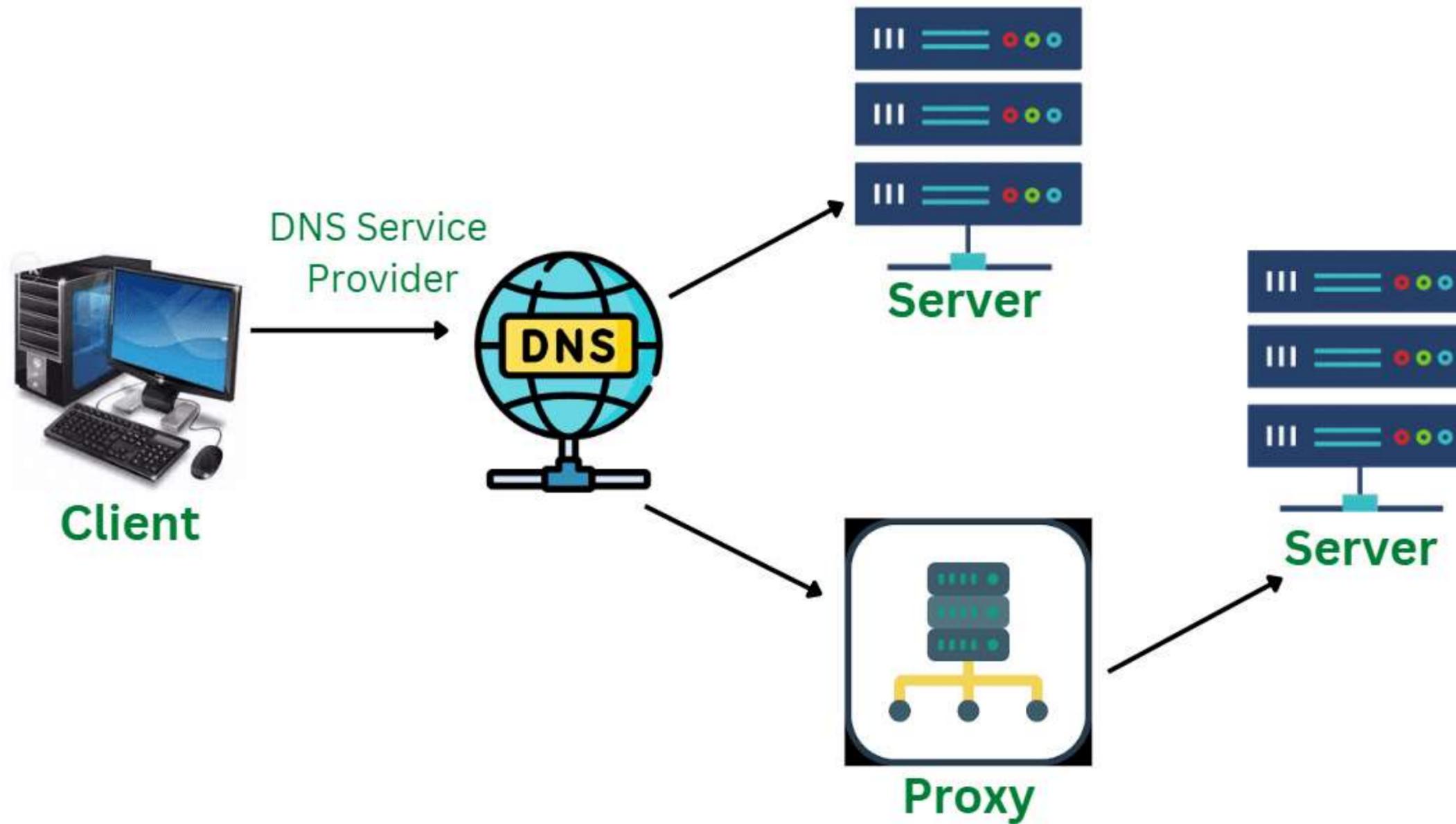
Topic 9: Simple Network Management Protocol (SNMP)

Session's Agenda:

- Empathize
- Define
- Ideate
- Prototype
- Test
- Real-world Scenario
- Challenges
- Conclusion

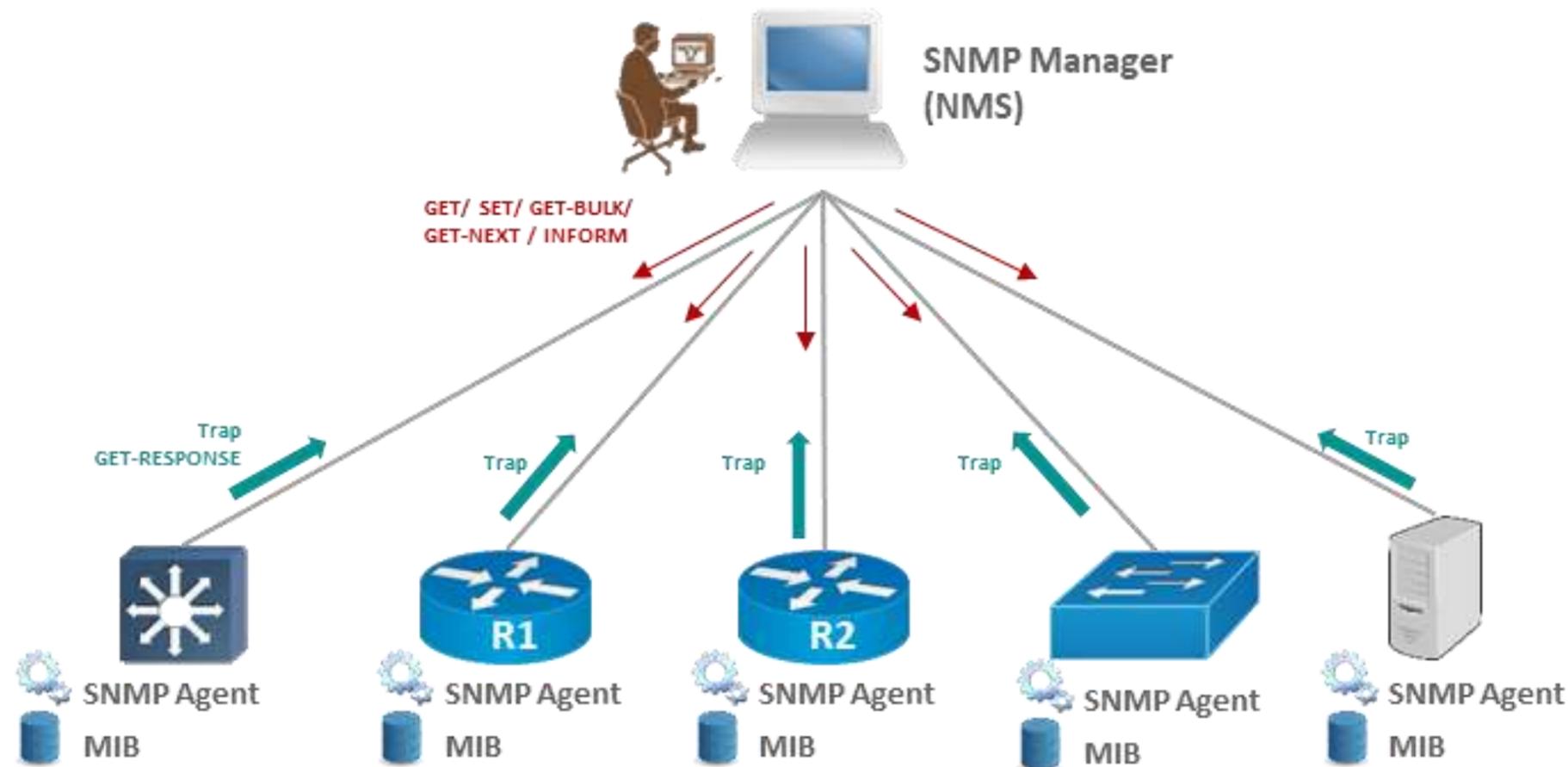


Recap



Empathize – Why SNMP?

Why do network administrators struggle to monitor and manage many devices manually, and how does SNMP simplify network management by automatically collecting status and performance information from devices across the network?



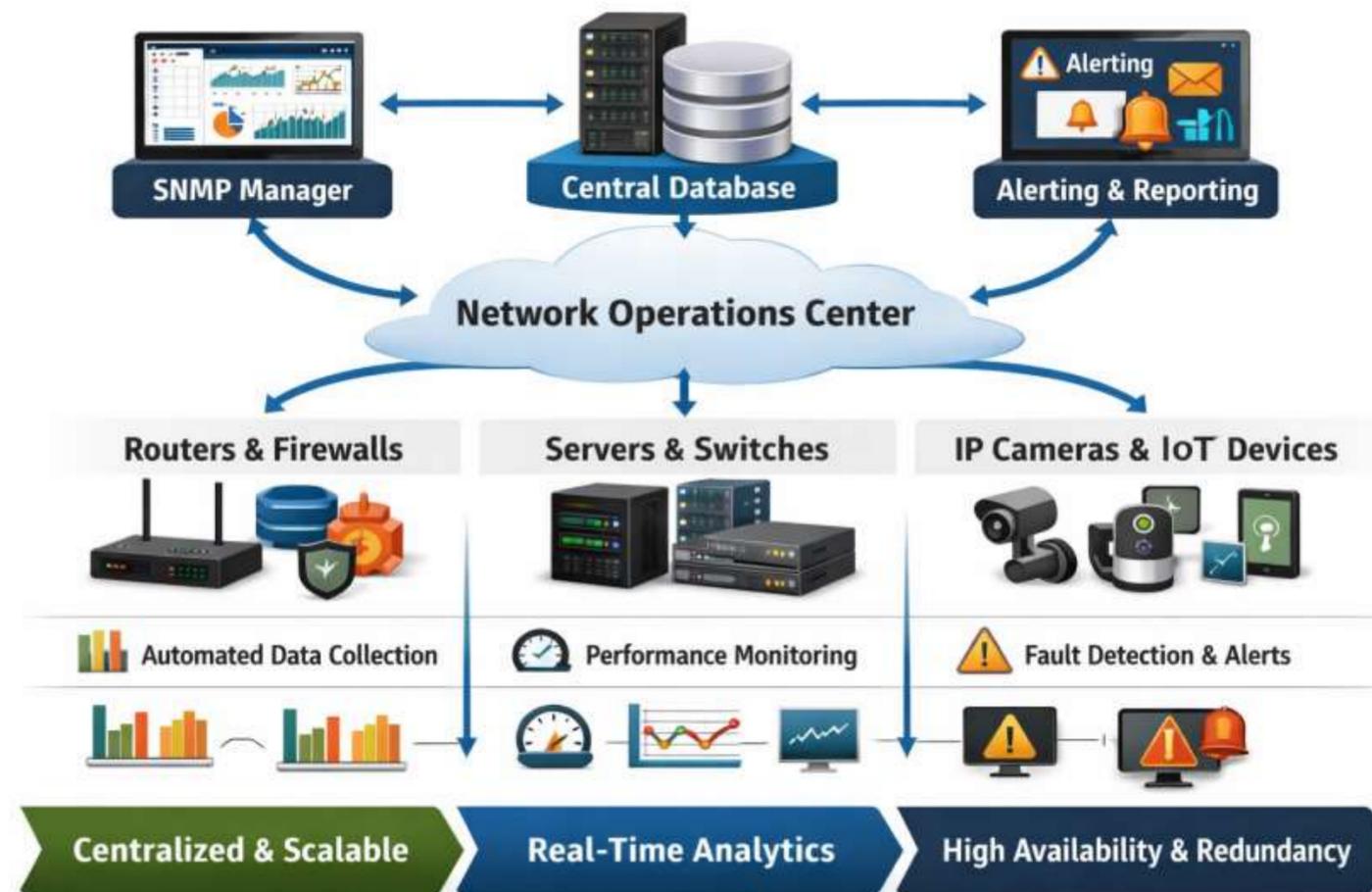
Define – Defining the Need for SNMP

Users face difficulty in monitoring and managing multiple network devices manually, making SNMP essential for centrally collecting, organizing, and tracking device status and performance across the network.



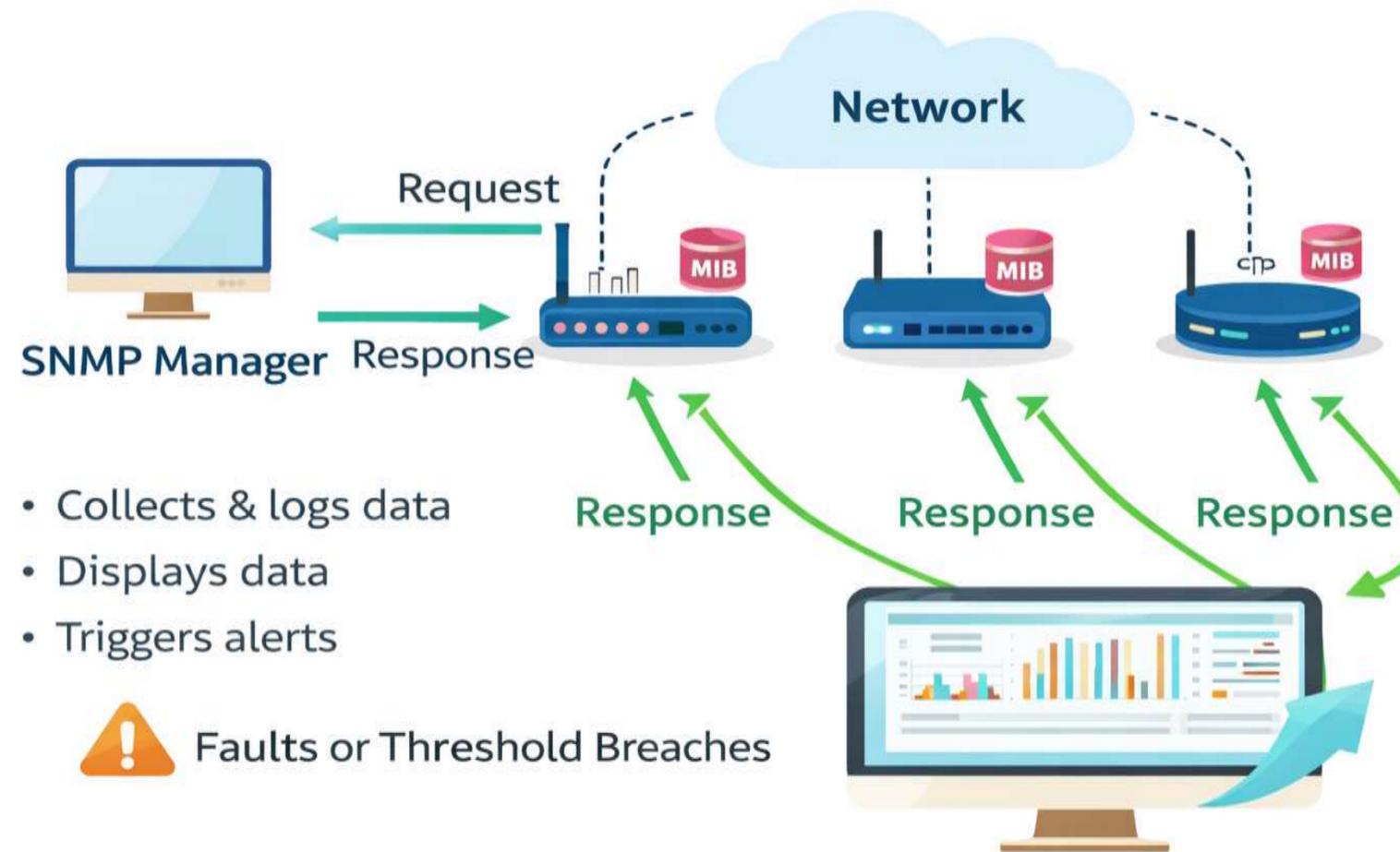
Ideate – Designing SNMP

How can a centralized yet scalable network management system be designed to automatically monitor, collect, and manage status and performance data from multiple network devices, ensuring reliable, efficient, and fault-tolerant network operations using SNMP?



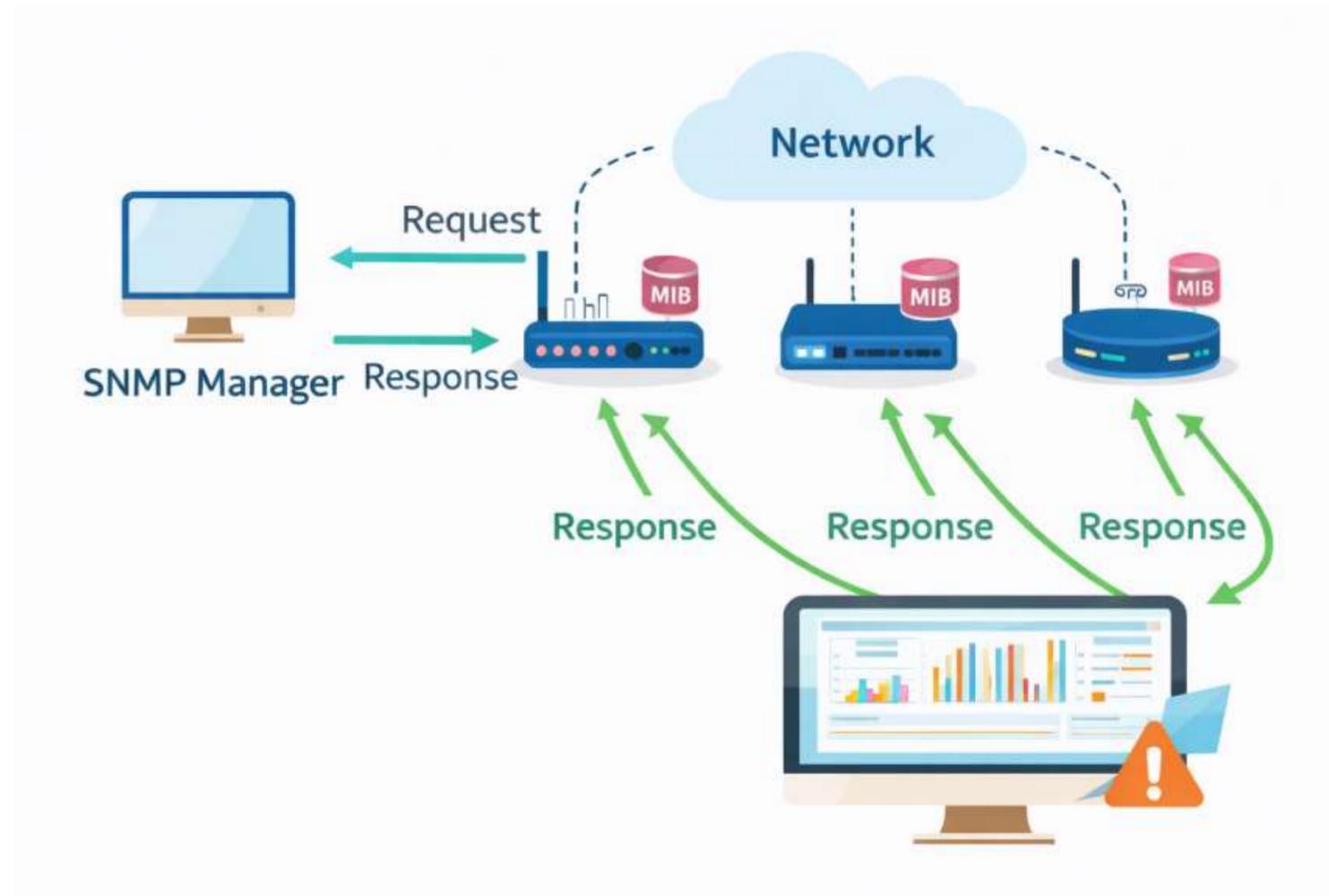
Prototype – SNMP

SNMP manager sends a request to agents on network devices, which retrieve data from their MIBs and respond back. The manager collects, logs, and displays this data, triggering alerts for any faults or threshold breaches.



Test – How Data Travels through SNMP

SNMP works by allowing a central manager to monitor and control network devices by requesting management data from agents, which retrieve information from their MIBs and report status, performance, and faults for efficient network management.



Real-world Scenario (SNMP)

An SNMP manager monitors network devices by collecting status and performance data from agents. Alerts are generated automatically when faults or threshold limits are detected.

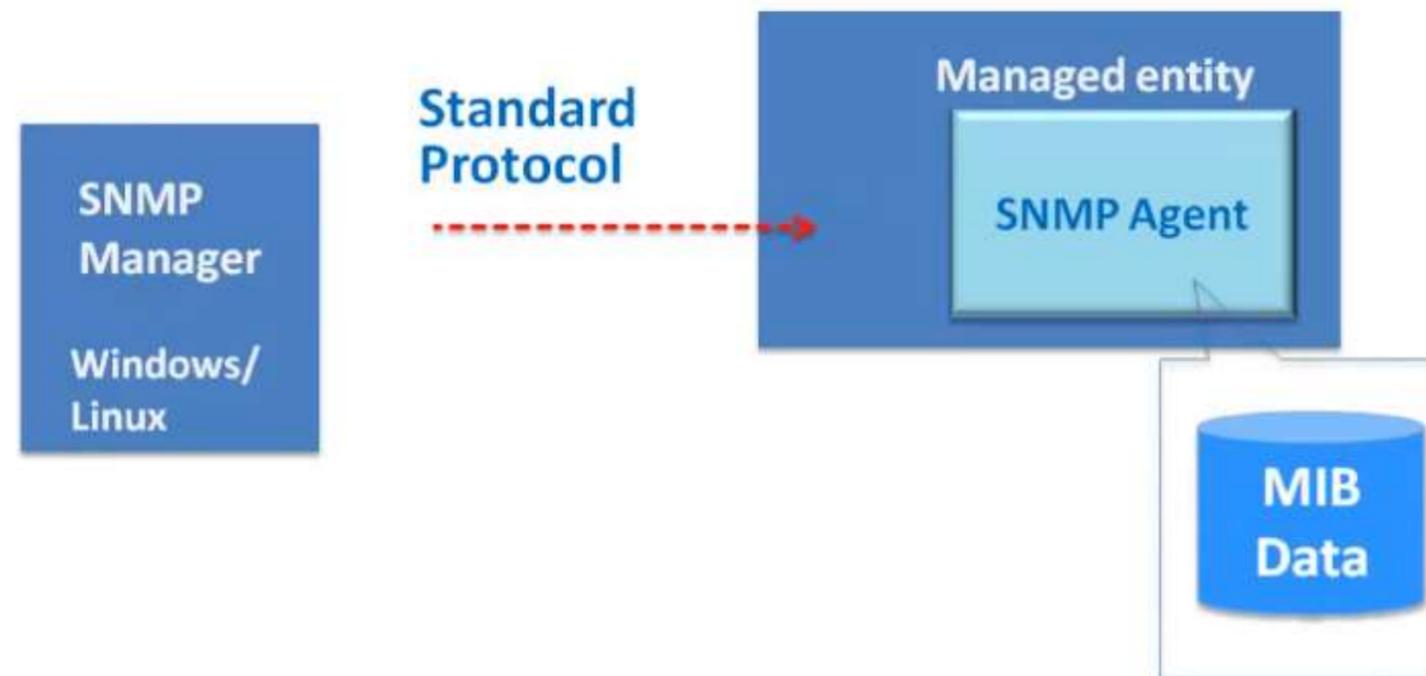


Challenges of SNMP

SNMP faces challenges such as security vulnerabilities, limited encryption in older versions, and scalability issues in large networks.

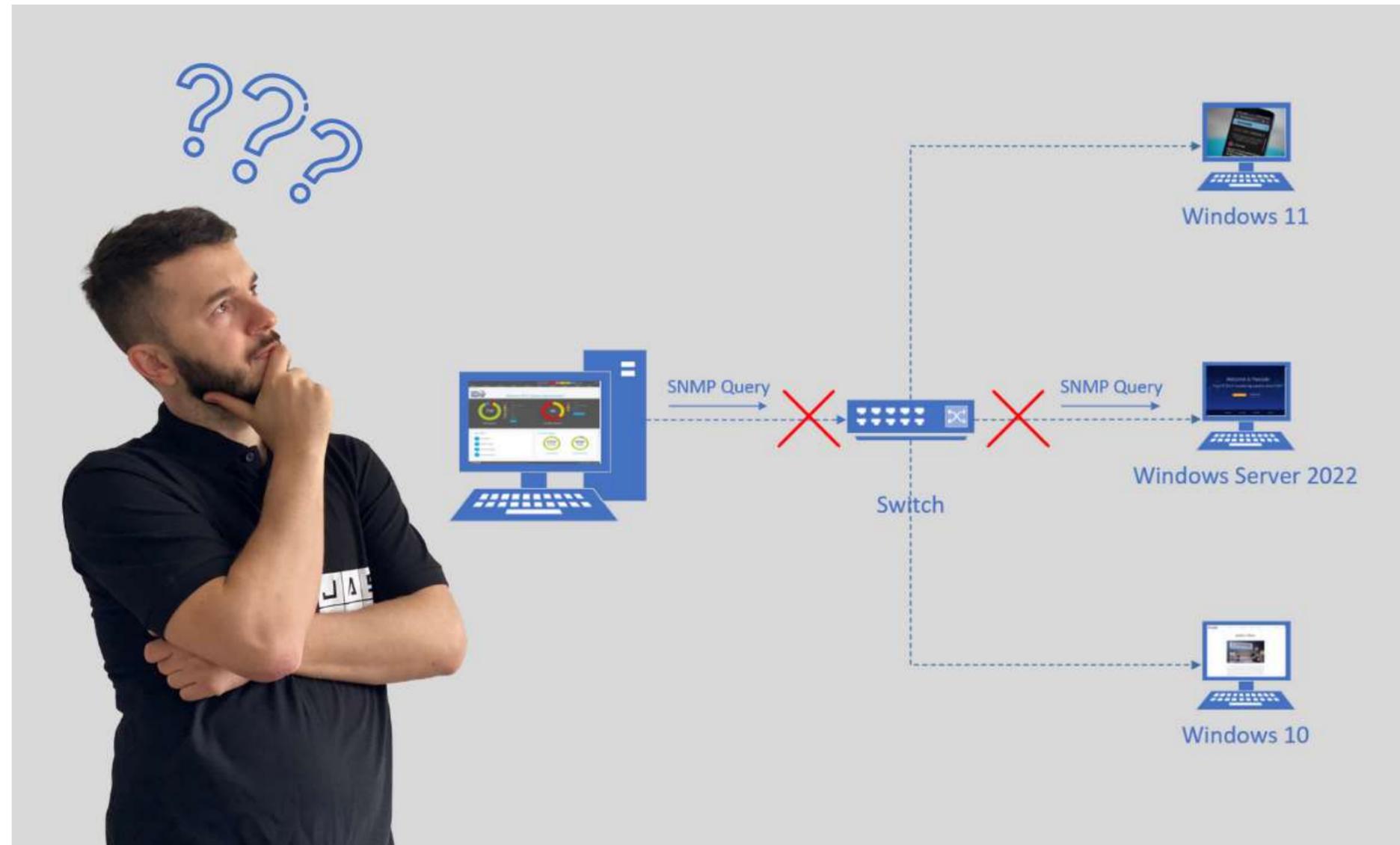
High polling traffic and delayed fault detection can also impact network performance and responsiveness.

SNMP Test Challenges

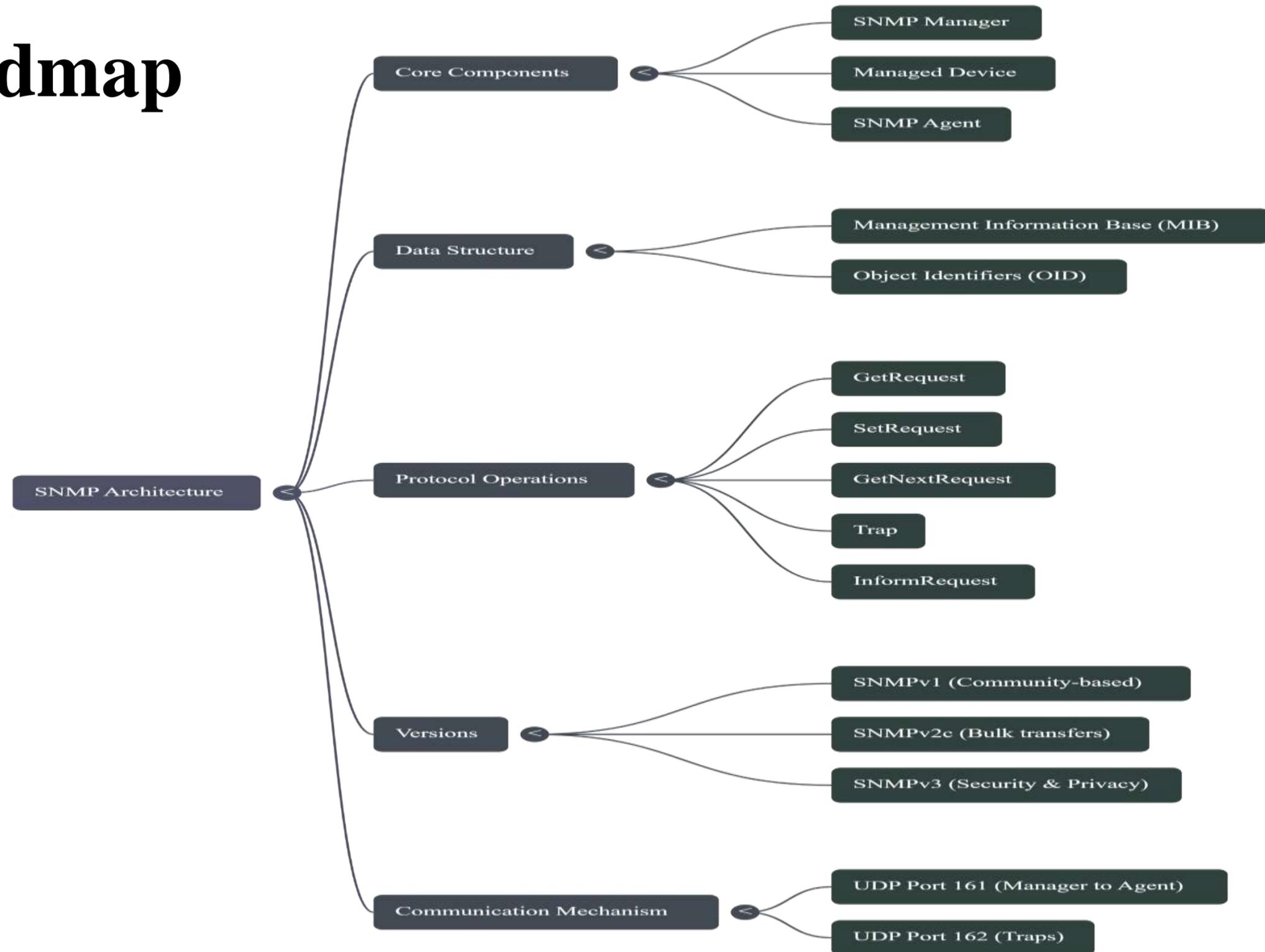


Conclusion – SNMP solves Real Problems

Why is SNMP essential?



Mindmap



Thank You