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Network Management

Week: 5

1.

In a large enterprise network, fault management is very important to ensure that all systems run smoothly. Imagine a company with multiple departments such as finance, human resources, and IT, all connected through a central network. One morning, employees in the finance department report that they cannot access shared files or connect to the internet. The network administrator checks the monitoring system and notices that one core switch is not responding.

The administrator quickly identifies that the switch has failed due to overheating. Using backup configurations and redundancy systems, the administrator reroutes traffic to another switch. This restores connectivity for the finance department. After that, the faulty switch is replaced and tested.

This scenario shows how fault management helps detect, isolate, and fix problems quickly. It reduces downtime, protects productivity, and ensures the network remains reliable and stable for all users.

2.

SNMP traps are alert messages sent from network devices to a management system when a problem occurs. SNMP stands for Simple Network Management Protocol. Instead of the management system constantly asking devices for updates, devices automatically send traps when certain events happen.

For example, if a router goes offline or if CPU usage becomes too high, the device sends an SNMP trap to the monitoring server. This allows administrators to respond quickly without waiting for manual checks.

SNMP traps improve fault management by providing real-time alerts. They help reduce response time, prevent major failures, and support proactive network monitoring in enterprise environments.

3.

In this simulation, SolarWinds Network Performance Monitor was used to detect and troubleshoot a network issue. The dashboard showed a warning alert for a server experiencing high packet loss. Using the monitoring graphs, I checked bandwidth usage and device health statistics.

I discovered that one interface was overloaded due to high traffic from backup processes. By adjusting bandwidth limits and rescheduling the backups to a later time, the issue was resolved.

This exercise showed how monitoring tools help identify the root cause of problems. SolarWinds makes troubleshooting easier by providing visual data, alerts, and detailed performance reports. It improves efficiency and reduces network downtime.

4.

In Canva, I created a simple fault management flowchart using basic shapes. The flowchart starts with a 'Fault Detected' box. It then moves to 'Alert Generated (SNMP Trap)' followed by 'Administrator Notified.'

Next, the process continues to 'Diagnose Problem,' where the administrator checks logs and monitoring tools. After diagnosis, the next step is 'Apply Fix.' Finally, the flowchart ends with 'Verify Resolution' and 'Close Incident.'

This flowchart clearly shows the steps followed during fault management. It demonstrates how problems are detected, analyzed, resolved, and documented. The design is simple but effective in explaining the process.

```
                    ┌──────────────┐
                    │    Fault     │
                    │   Detected   │
                    └──────────────┘
                           │
                    ┌──────────────┐
                    │   Log Fault  │
                    └──────────────┘
                           │
                    ┌──────────────┐
                    │   Diagnose   │
                    │    Issue     │
                    └──────────────┘
                           │
 ┌──────────┐    No  ┌──────────────┐  Yes  ┌──────────────┐
 │ Resolved?│◄───────│   Attempt    │──────►│  Close Fault │
 └──────────┘        │  Resolution  │       └──────────────┘
      │              └──────────────┘              │
      │                     │                       │
      │              ┌──────────────┐               │
      └──────────────│Escalate Issue│───────────────┘
                     └──────────────┘
                           │
                    ┌──────────────┐
                    │  Close Fault │
                    └──────────────┘
```