

## Network Management Summary

Network management focuses on ensuring that modern computer and telecommunication networks operate efficiently and without interruptions. In the past, these two networks were separate, but advancements in technologies such as Ethernet, WAN, PSTN, ISDN, and mobile systems have integrated them. A network administrator's main responsibilities include managing resources, controlling costs, minimizing downtime, enhancing performance, and maintaining security. To achieve this, the FCAPS model is commonly used, representing Fault, Configuration, Accounting, Performance, and Security. Fault management involves detecting and resolving issues quickly, while configuration management handles the setup, monitoring, and updating of network devices. Accounting tracks usage, performance management ensures smooth operations, and security management safeguards against unauthorized access. Network Management Systems (NMS) play a crucial role by using a manager-agent setup, where a central application communicates with agents on devices like routers and switches. Protocols such as SNMP help monitor and control these devices effectively. With distributed network management, administrators can manage systems remotely, saving time and improving reliability. In real-world applications, these practices support services like video conferencing, online banking, cloud storage, social media, and streaming. Without effective network management, users would face frequent downtime, slower connections, and security risks. Overall, network management ensures fast, secure, and dependable communication, benefiting schools, businesses, and everyday users.