**Network operating system-**

A network operating system (NOS) is a specialized software that facilitates the management, administration, and coordination of network resources and services. It provides the necessary functionality and services to enable multiple devices, computers, and users to communicate, share resources, and access network services. Here are some key aspects of a network operating system:

1. Network Management: A NOS includes tools and utilities to manage and monitor network devices, such as servers, routers, switches, and clients. It allows administrators to configure network settings, monitor network performance, and troubleshoot issues.
2. User and Group Management: NOS provides user and group management capabilities, allowing administrators to create, modify, and control user accounts and access permissions across the network. It ensures that users have appropriate access to network resources and enforces security policies.
3. File and Print Sharing: NOS facilitates file and print sharing across the network. It enables users to access shared files and printers from different devices, allowing for centralized storage and efficient resource utilization.
4. Authentication and Security: NOS incorporates authentication mechanisms to verify the identity of users and ensure secure access to network resources. It may support various authentication protocols, such as LDAP, Active Directory, or RADIUS, to authenticate users and enforce security policies.
5. Network Services: NOS may include built-in network services such as DNS (Domain Name System), DHCP (Dynamic Host Configuration Protocol), and NTP (Network Time Protocol) to provide essential network infrastructure services.
6. Remote Access: NOS often supports remote access capabilities, enabling users to connect to the network and access resources from outside the local network. This can be achieved through VPN (Virtual Private Network) connectivity or other remote access protocols.
7. Fault Tolerance and High Availability: A robust NOS includes features for fault tolerance and high availability. It may support features like load balancing, failover mechanisms, and redundancy to ensure continuous network operations and minimize downtime.

Examples of network operating systems include:

* Windows Server: Microsoft Windows Server is a popular network operating system that provides a wide range of network services, user management capabilities, and administrative tools. It integrates with Active Directory for centralized user and group management.
* Linux: Linux distributions like Ubuntu Server, CentOS, or Red Hat Enterprise Linux can be used as network operating systems. They offer a wealth of networking tools, services, and utilities that can be customized and tailored to meet specific network requirements.
* Novell NetWare: NetWare is a network operating system developed by Novell. Although less prevalent today, it was widely used in the past for file and print sharing, as well as directory services.
* macOS Server: Apple's macOS Server is a network operating system designed for Apple devices. It provides services such as file sharing, centralized device management, and collaboration tools.

The choice of a network operating system depends on factors such as the organization's requirements, existing infrastructure, compatibility with client devices, and the level of expertise available to manage and support the system.