Campus Network as a Service

June 28th, 2024

By

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Campus Network as a Service (CNaaS)

June, 2024

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Outline:

- Motivation for CNaaS.
- Features of CNaaS
- Key Considerations for the Implementation
- Current Challenges and Suggestions for Improvement
- Proposed CNaaS Solution
- Benefits of CNaaS
- Phases of the Implementation
- Service Models

Motivation for CNaaS

Challenges in Traditional Campus Networks.

- Underperforming Local Area Networks (LANs).
- Bottlenecks preventing high-speed Internet utilization.
- The focus of ICT Support Personnel.
- Under-staffing in IT departments.
- Issues with staff turnover and lack of proper handover reports.
- Difficulty in network support and visibility.
- Neglect of key network components.

Campus Network as a Service

CNaaS: A service that covers the planning, installation, operation, monitoring, and maintenance of institutional campus networks.

Why CNaaS?

- Enhancing network management and control for the member institutions.
- End-user focus by the IT personnel.
- 24/7 support.

CNaaS Features

Network Monitoring and Alerting

- Real-time monitoring and alert systems.

Configuration Management

- Automatic backup and recording of configuration changes..

Network Analytics

- Data-driven insights for decision-making and capacity planning.

Software Distribution

- Streamlined updates and patches across the network.

Performance Management

- Tools for consistent network performance.

Key Considerations for CNaaS Implementation

Network Capacity

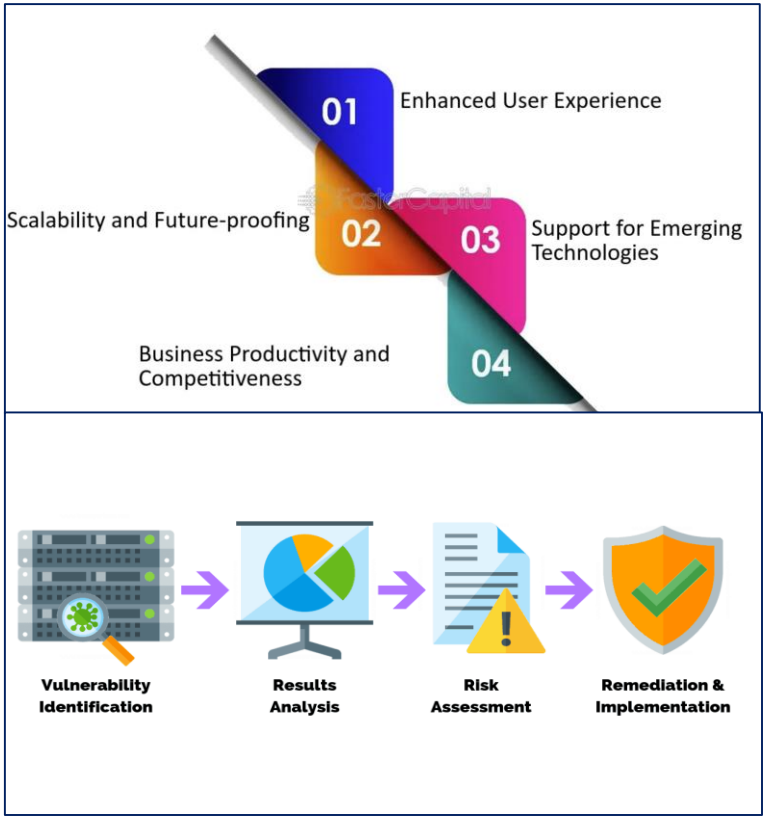
- Ensuring sufficient capacity for students and staff.

Network Security

- Robust security measures and quarterly vulnerability scans

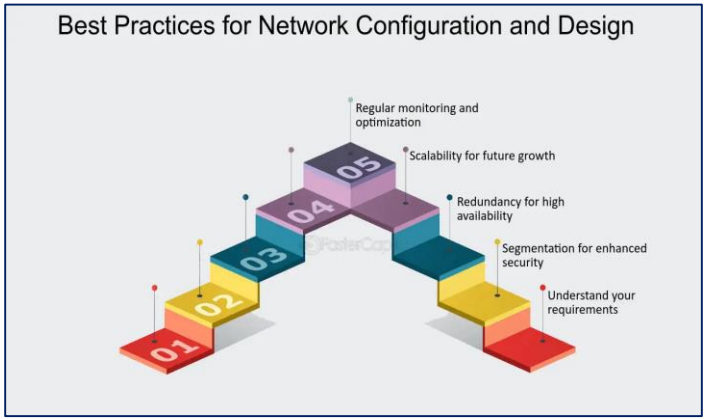
User Authentication and Authorization

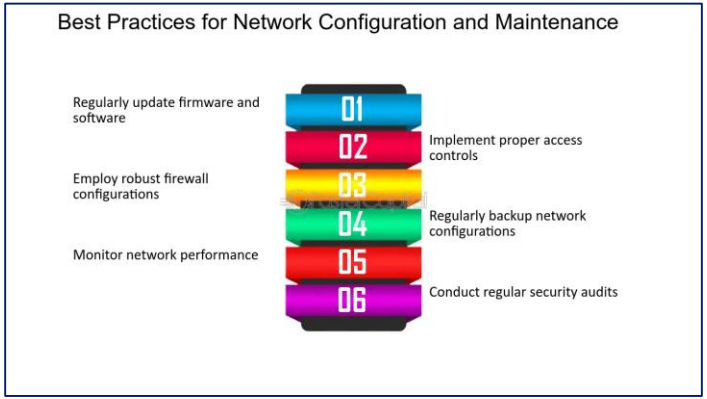
- Secure access through methods like two-factor authentication and single sign-on

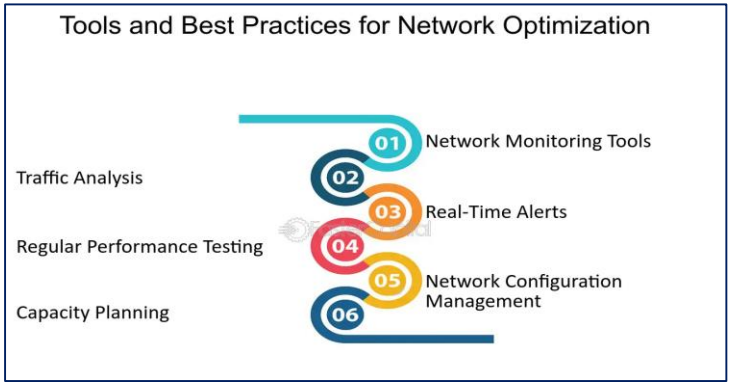


Steps taken During the CNaaS Implementation

1. Assessing Network Performance Metrics
2. Identifying Network Traffic Patterns
3. Evaluating Network Security
4. Considering Network Upgrades



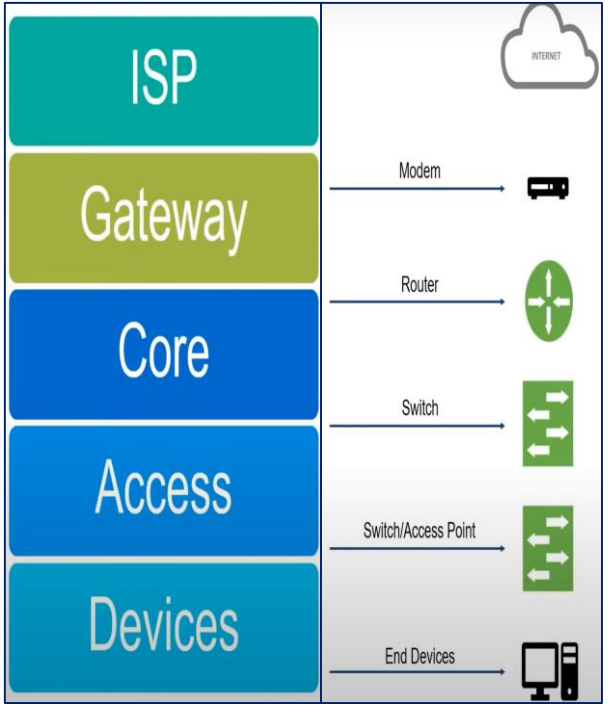




Phases of CNaaS Implementation

- Survey & Design of the current network infrastructure.
- Assessment of current infrastructure and future needs.
- Implementation.
- Hardware and software installation and configuration.
- Performance, security, and compatibility tests.
- Deployment.
- Making CNaaS available to network administrators.
- 24/7 support for troubleshooting and network mgt.

Building block Mindset for a network



Proposed CNaaS Solution

Planning

- Determine network layout, design, and architecture.
- Considerations - user count, device types, traffic patterns, and future growth.
- Scalability – Network Expansion

Installation.

- Hardware Deployment(routers, switches, access points).
- Network Configuration
- Scalability - Hardware and Configuration

Operation.

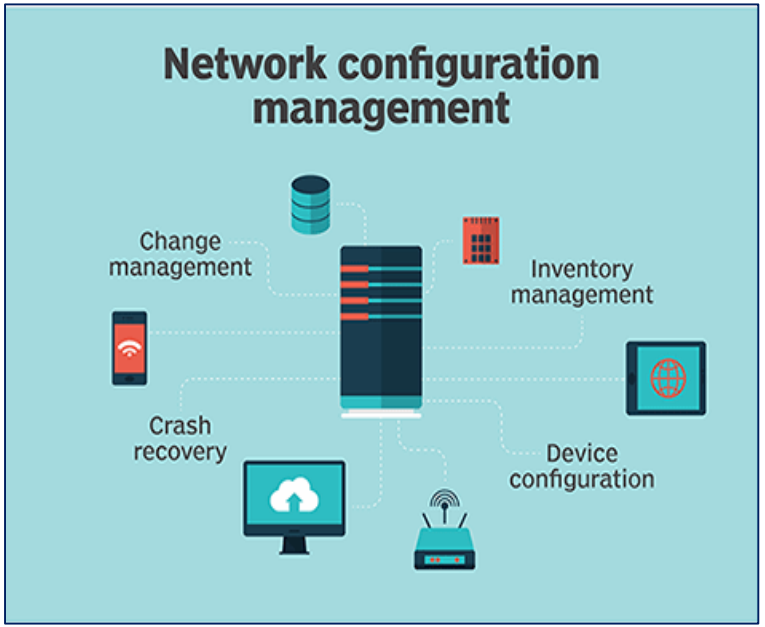
- Day-to-day management and administration.
- User management
- Network configuration, and troubleshooting.
- Scalability - Processes

Monitoring

- Continuous monitoring
- Performance optimization.
- Deploy scalable monitoring tools

Network Maintenance

- Regular updates, patches, and upgrades.
- Implement efficient maintenance.
- procedures for growing the network.
- Effective network management and scalability are crucial for campus networks.
- Ensures optimal performance, reliability, and security amidst evolving network needs.



Benefits of CNaaS

- Business Continuity.
- Stable network unaffected by organizational changes.
- Improved Performance and Reliability.
- Real-time monitoring and proactive maintenance.
- Increased Security.
- Enhanced security features and centralized policy control.
- Reduced Complexity.
- Simplified network management and automation.
- Improved Compliance.
- Streamlined compliance management.

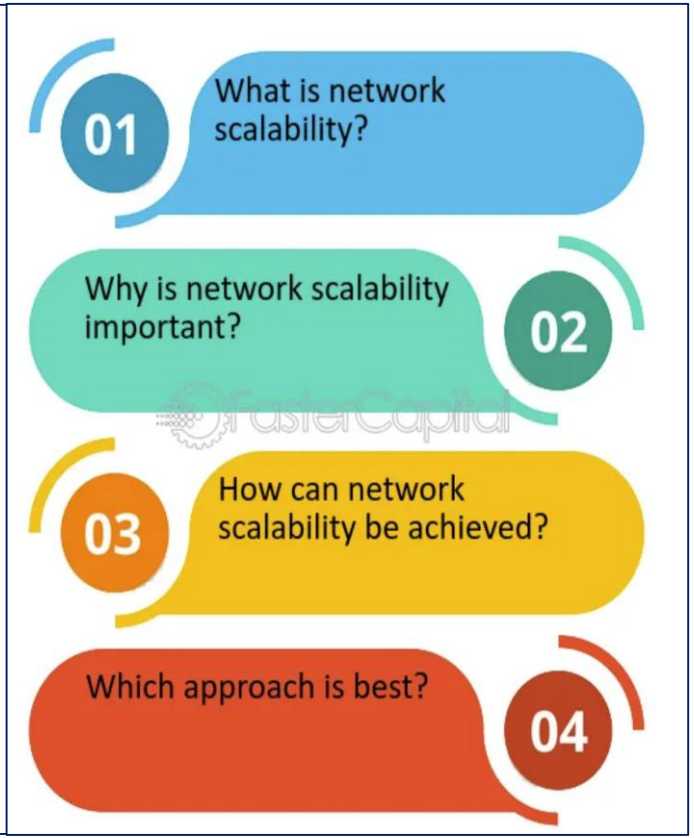
CNaaS Service Models

Model One: No Equipment Purchase

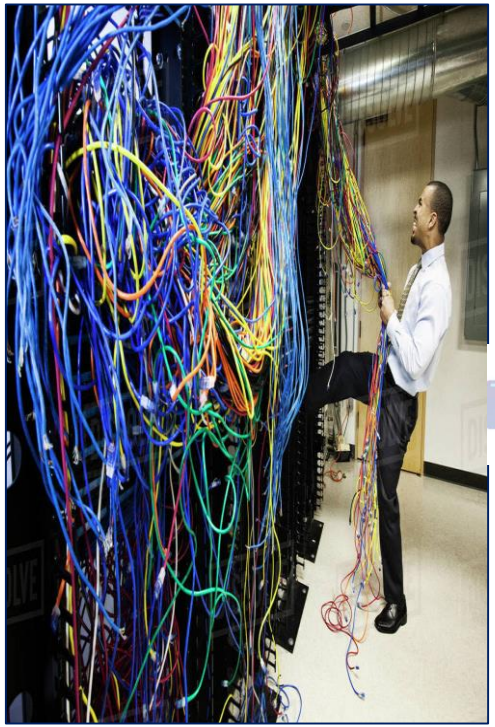
- Network survey, planning, setup, and maintenance using the institution's equipment.
- Network monitoring and dedicated account management.

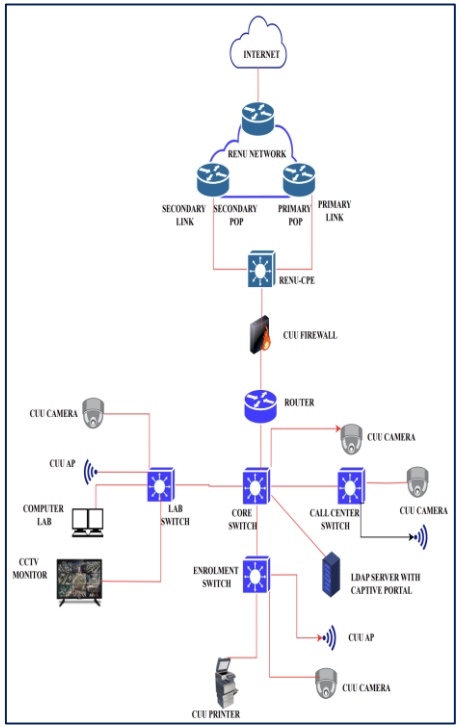
Model Two: Higher Equipment Purchase

- Similar to Model One, but with equipment on hire purchase.
- Ownership is transferred upon full payment within six months.



Network Design





Cable Management

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