

Network Configuration (40-assignment)



This is an integrated instructional module designed specifically to operate within a Modular Program environment. It is ideal for use with our Scantek Technology or IT2020 Information Technology programs. It includes a 10-assignment exploratory curriculum and a further 30-assignment in-depth curriculum. The exploratory curriculum and the in-depth curriculum are each split into two parts. Each part includes a pre-test and post test. The module includes hardware, software and curriculum materials sufficient to provide a complete learning experience.

The curriculum incorporates continuous assessment through questions. When used in conjunction with a ClassAct networked management system, this provides instant feedback of student performance. The assessments begin with a comprehensive pre-test. This quiz includes questions for each subsequent assignment, together with questions that will specifically test math and reading ability.

Every assignment starts with a series of questions designed to track inventory. These ensure that any missing items are located before they are needed.

Each assignment is divided into a series of tasks. Hands-on tasks introduce students to computer network configuration, and are accompanied by research tasks based upon illustrated textbooks and on-screen applications. Assessment questions are incorporated into each task.

Exploratory Phase Topics:

- Sharing network resources
- Network troubleshooting
- Server protection
- Network architecture
- Remote access technologies
- Network support
- Certification schemes
- Network types
- Wireless networking technologies
- Network cable types
- Network topologies
- Backing up data and redundancy
- Network servers
- Network connectivity devices
- Network planning
- Network models
- Installing and expanding networks
- Network transmission media

Exploratory Phase activities:

- Investigating the characteristics of a peer to peer network.
- Investigating networking hardware.
- Examining the limitations of network cabling.
- Exploring types of transmission media.
- Investigating a bus network.
- Exploring the use of a network server and backup devices.
- Discovering how to protect a server from power faults, etc.
- Examining what a server actually does.
- Investigating fiber optic networks.
- Exploring remote access.

Advanced Specialization Phase topics:

- Installing network hardware
- Constructing UTP network patch cables
- Installing a network printer server
- Network troubleshooting
- Portal devices: bridges and routers
- Network protocols
- Redundancy in networks
- Workstation configuration
- Real-time network communication methods
- Data transmission methods

Advanced Specialization Phase activities:

- Building a direct cable network
- Installing a hub based network
- Testing the network
- Checking cable continuity
- Installing a network based on UTP (Category 5) cable
- Installing a hub-based network
- Comparing standard and cross-over UTP cable
- Constructing a UTP cable
- Setting up a local user account (LUA)
- Setting up network shares for a LUA.
- Examining network shares using Network Neighborhood.
- Setting up a disk quota for a LUA
- Examining TCP/IP
- Using 'ping'
- Installing other network protocols
- Examining hubs, switches and repeaters
- Examining bridges, routers, brouters and gateways
- Configuring a computer as a router
- Investigating the OSI model
- Investigating circuit and packet switching
- Configuring a web browser
- Configuring accessibility options
- Setting up and using an FTP service
- Setting up and using an HTTP service
- Setting up NetMeeting for Chat, whiteboard and file transfer applications
- Audio/video conferencing
- Examining redundant and fault tolerant servers
- Examining RAID arrays
- Examining firewalls
- Examining authentication and encryption
- Encrypt and decrypt a file
- Installing Windows XP (Simulation)
- Connecting and configuring a network printer/print server
- Planning and implementing network expansion.

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Each assignment is designed around a list of performance objectives. These lists include academic, technical, and occupational objectives. The assignments are written in such a way as to enable a student to attain the performance objectives, with the assessment questions linked to these in order to provide a measure of true competency.

The performance objectives are used by the ClassAct management system to generate a comprehensive portfolio of student competency reports. Default reports that are supplied with this module include:

- Entry report
- Technical/Occupational Exit report
- Basic Skills report based upon the federal SCAN's report.

The items supplied with this instructional module include:

- 10-assignment On-Screen Student Assignment Guide CD
- 10-assignment Student Workbook
- 10-assignment Instructor's Guide
- 30-assignment Student Assignment Guide
- 30-assignment Student Workbook
- 30-assignment Instructor's Guide
- Networking Theory and Simulation Software
- Teach Yourself Networking textbook
- How Networks Work textbook
- 4-port network hub
- UTP network cables
- Network cabling materials and cable assembly tools
- Digital multimeter
- 2 Webcam cameras

Additional items required:

- Student workstation computer
- Two practice computers (refer to the specification below).

Specification for each practice computer:

- Operating System: Windows® XP Professional (*see Notes 1 and 2*)
- CPU: 600 MHz or higher Pentium-compatible CPU.
- Memory: 256 megabytes (MB) of RAM recommended minimum; more memory improves performance.
- Hard Disk: 10GB Hard disk space.
- Drives: Floppy Disk, CD-ROM or DVD drive.
- Display: 800x600 or higher resolution with True Color.
- Peripherals: Keyboard and mouse or compatible pointing device (optional).
- Port: 1 Free USB port.
- Network: Ethernet network adapter.

Notes

1. Some manufacturers do not supply a Windows XP Professional CD with new computers. It is important that a Windows XP Professional CD is available in the lab at the time the 30-assignment module is installed.
2. It is recommended that Microsoft Windows XP service pack 2 is installed on the computers.
3. In later assignments of NS1 in a lab also containing NS2, students at this workstation will connect together all four computers to form one large network. This will be achieved by connecting together the hubs that link each pair of computers. For this reason, the NS1 networking computers should be positioned within 13 feet (4 meters) of the NS2 networking computers, such that a cable can be connected between their hubs without creating a safety hazard (for example, by blocking a walkway).

Module Facts

For Technology Program, order as:
ST620/40 Network Configuration

For IT Program, order as:
NS1C Network Configuration

	No.	Average time
Assignments	40	45 minutes
Extension Activities	4	45 minutes
Total		33 hours



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Web site: www.ljgroup.com