

GENERAL DESCRIPTION

The data network at New Century Computing is an unswitched Ethernet LAN 100BT with LAN based Internet access via a cable modem link. There are 15 nodes on this peer to peer network, typical PC configuration being later model Pentium class clone >500MHZ, 64MB RAM, 10GB HD and Windows XP/2000 based operating system. The LAN backbone is a 16-port Linksys dual speed hub. A generic cable modem, and Linksys Cable/DSL router provide Internet connectivity. There are two servers on this mixed environment LAN running NT4.0, and Windows 2000 Professional respectively. These host file and print sharing, SQL server, and Microsoft IIS.

NETWORK TOPOLOGY

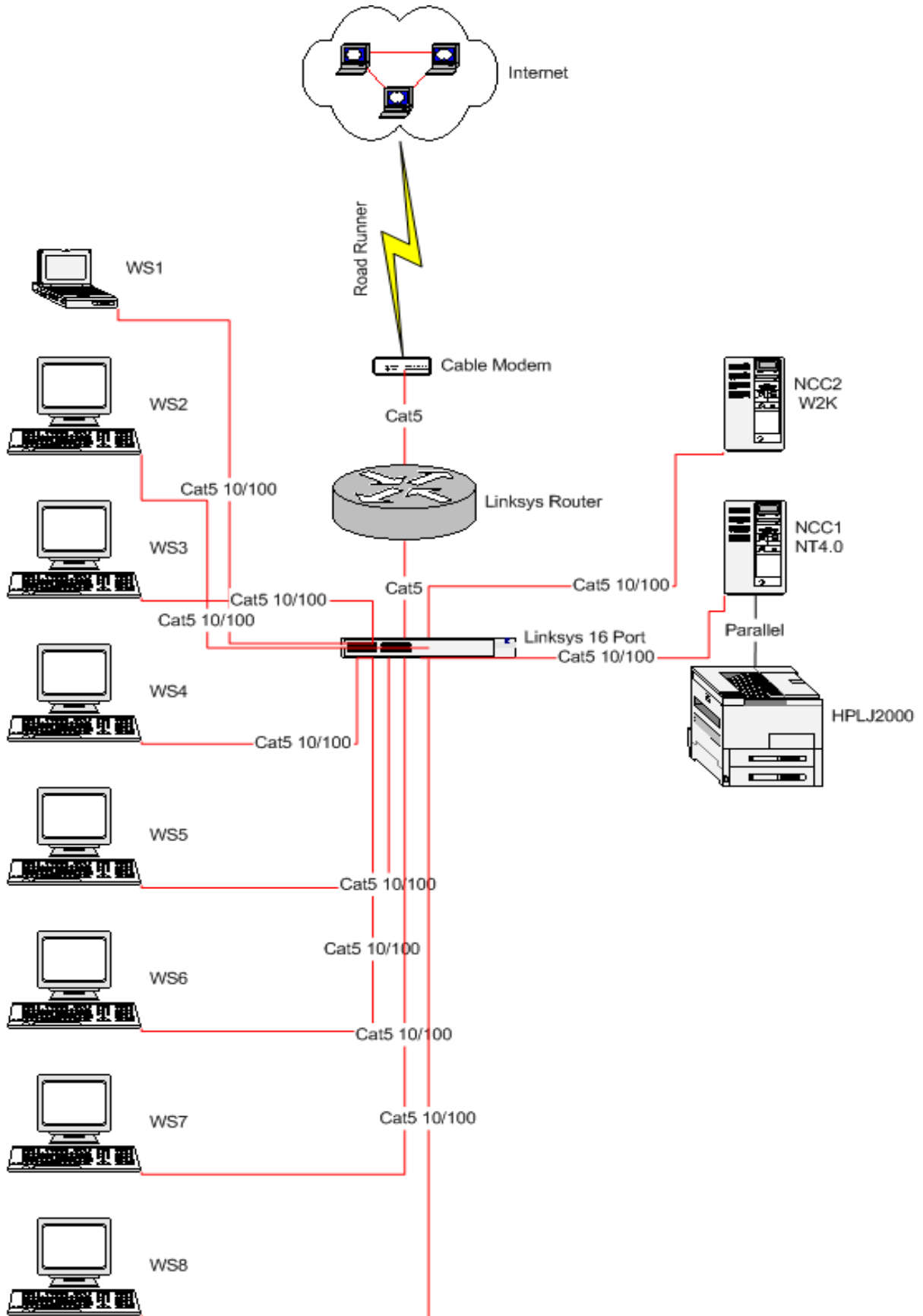
The NCC data network is a star topology Ethernet LAN. Users report few problems. Cabling is exclusively Cat5 E. Each drop is a home run back to the Linksys hub. Cable continuity tests **passed** without exception. The network protocols are as follows:

Each station's default protocol is TCP/IP. The addresses are assigned dynamically by the Linksys router and lease time is 5 days. Each address was test released and renewal occurred within acceptable time frames. Inbound testing concluded that no internal addresses were accessible from the outside and bandwidth is adequate at this time. Network performance may be enhanced with the implementation of a switching hub to replace the 16 port Linksys.

The following page contains a diagram of the network.



NETWORK AUDIT FOR NEW CENTURY COMPUTING, LLC



HARDWARE

Servers (2)

Server Name: Server One
Make/Model: Generic Clone
Location: Front of Programmer's Area
Processor: Pentium I 300MHz
Memory: 128MB RAM
Hard Disk: One 8GB HD
Fault Tolerance: None
Operating System: Windows NT4.0 Service Pack 4
Network Protocols: NetBEUI
Processes Running: File Sharing
Print Sharing
Remote Access Server
Power Protection: APC BackUPS 500 (Shared with Server Two)
Powerchute auto shutdown software

Server Name: Server Two
Make/Model: Generic Clone
Location: Front of Programmer's Area
Processor: Pentium III 550MHz
Memory: 128MB RAM
Hard Disk: One 8GB HD
Fault Tolerance: None
Operating System: Windows 2000 Advanced Server
Network Protocols: TCP/IP
Processes Running: File Sharing
Print Sharing
SQL Server
Internet Information Services
Power Protection: APC BackUPS 500 (Shared with Server Two)
No auto shutdown present



Workstations (8)

Name: Workstation One
Make/Model: Generic Clone
Location: Front Office (Nicole)
Processor: Pentium III 550MHz
Memory: 128 Mb RAM
Hard Disk: 30GB HD
Operating System: Windows 98 Service Pack 1
Network Protocols: NetBEUI, TCP/IP
Applications: Internet Explorer v6.0, Outlook Express v6.0,
MS Office 2000, ACT! 4.0, Norton Anti-virus 2002
Power Protection: APC Surge Arrest

Name: Workstation Two
Make/Model: Generic Clone
Location: Front Office (Shanna)
Processor: Pentium III 550MHz
Memory: 128 Mb RAM
Hard Disk: 30GB HD
Operating System: Windows 98 Service Pack 1
Network Protocols: NetBEUI, TCP/IP
Applications: Internet Explorer v6.0, Outlook Express v6.0,
MS Office 2000, ACT! 4.0, Norton Anti-virus 2002
Power Protection: APC Surge Arrest

Name: Workstation Three
Make/Model: Toshiba Saltellite Pro 4300 Notebook
Location: Programmer's Areas (Gary)
Processor: Pentium III 750MHz
Memory: 512 Mb RAM
Hard Disk: 30GB HD
Operating System: Windows 98 Service Pack 1
Network Protocols: NetBEUI, TCP/IP
Applications: Internet Explorer v6.0, Outlook Express v6.0,
MS Office 2000, ACT! 4.0, Norton Anti-virus 2002,
Adobe Acrobat v4.0
Power Protection: APC Surge Arrest



Name: Workstation Four
Make/Model: Generic Clone
Location: Programmer's Area
Processor: Pentium III 450MHz
Memory: 128 Mb RAM
Hard Disk: 15GB HD
Operating System: Windows 98 Service Pack 1
Network Protocols: NetBEUI, TCP/IP
Applications: Internet Explorer v6.0, Outlook Express v6.0,
MS Office 2000, ACT! 4.0, Norton Anti-virus 2002
Power Protection: APC Surge Arrest

Name: Workstation Five
Make/Model: Generic Clone
Location: Programmer's Area
Processor: Pentium III 550MHz
Memory: 128 Mb RAM
Hard Disk: 30GB HD
Operating System: Windows 98 Service Pack 1
Network Protocols: NetBEUI, TCP/IP
Applications: Internet Explorer v6.0, Outlook Express v6.0,
MS Office 2000, ACT! 4.0, Norton Anti-virus 2002
Power Protection: APC Surge Arrest

Name: Workstation Six
Processor: Pentium III 550MHz
Memory: 128 Mb RAM
Hard Disk: 30GB HD
Operating System: Windows 98 Service Pack 1
Network Protocols: NetBEUI, TCP/IP
Applications: Internet Explorer v6.0, Outlook Express v6.0,
MS Office 2000, ACT! 4.0, Norton Anti-virus 2002
Power Protection: APC Surge Arrest



Name: Workstation Seven
Make/Model: Generic Clone
Location: Shop
Processor: Pentium III 300MHz
Memory: 128 Mb RAM
Hard Disk: 6GB HD
Operating System: Windows 2000 Professional Service Pack 1
Network Protocols: NetBEUI, TCP/IP
Applications: Internet Explorer v6.0, Outlook Express v6.0,
MS Office 2000, ACT! 4.0, Norton Anti-virus 2002
Power Protection: APC Surge Arrest

Name: Workstation Eight
Make/Model: Generic Clone
Location: Shop
Processor: Pentium III 800MHz
Memory: 128 Mb RAM
Hard Disk: 40GB HD
Operating System: Windows XP Security Release 2
Network Protocols: NetBEUI, TCP/IP
Applications: Internet Explorer v6.0, Outlook Express v6.0,
MS Office 2000, ACT! 4.0, Norton Anti-virus 2002
Power Protection: APC Surge Arrest

Other Network Devices

Description: Linksys Cable/DSL Router
I/P Address: 192.168.1.1
WAN Address: 24.29.53.103
SM: 255.255.248.0
DNS1: 24.29.53.1
DNS2: 24.29.226.173



Printers

Make/Model: HP LaserJet 5
Connection: Parallel Port to Server One
Accessories: None
Shared: Yes

Make/Model: HP LaserJet 4
Connection: Parallel Port to Workstation Seven
Accessories: None
Shared: Yes



DATA STORAGE

Server One hard disk is partitioned into C and D drives. Drive C contains operating system files. Drive D contains data files.

Server Two hard disk is partitioned into C and D drives. Drive C contains operating system files. Drive D contains data files.

Data on both servers is backed up by workstation (Workstation Three) based tape backup. A scheduled, unattended backup is run each weeknight. Tape rotation involves five tapes rotated each week.

SECURITY

- Users are not authenticating to a central server for login permissions. Access is granted to network resources by virtue of a series of unprotected simple shares. NT server is not secure as critical data folders are shared to all users/full control on the network. Suggest implementing a domain model network and apply strict access permissions to network resources. Implement logging on server to track access to data and other network activity.
- Servers and network devices such as routers and hubs are not installed in a secure location.
- Antivirus software is installed on all of the workstations but not on the servers.



RECOMMENDATIONS

Immediate (0-3 months)

Recommendation: Provide auto shutdown to Server Two.

Reason/Advantages: In the event of a power outage that lasts longer than the UPS battery's stand-by power, the server will simply power off, thus avoiding proper shut-down. This may corrupt the server operating system and/or data.

Recommendation: Clean up cabling (cable management) by labeling cables and utilizing punch-down blocks.

Reason/Advantages: Eases PC migration process
Aids in troubleshooting efforts

Recommendation: Remove unneeded network protocols – specifically NetBEUI

Reason/Advantages: NetBEUI is a broadcast protocol which carries great network overhead. TCP/IP is a directed protocol which is much more efficient and compliant with all existing applications and systems.

Recommendation: Replace Linksys 16 port hub with a switching hub

Reason/Advantages: A switching hub will increase network performance by segmenting network traffic.

Recommendation: Install Server based anti-virus software

Reason/Advantages: Although the workstations are protected with anti-virus software, the servers are unprotected. With a link to the Internet, the servers are vulnerable. Some of the more severe viruses can crash the entire network.



Recommendation: Update operating system and application service packs.

Reason/Advantages: Recent patches fix bugs and add enhancements.

CAVEAT: Occasionally, service packs introduce new bugs. Check with software vendors before upgrading service packs.

Intermediate Term (6 months – 1 year)

Recommendation: Replace remote dial-in with a Virtual Private Network

Reason/Advantages: Save on telephone charges, improve throughput (speed of connection)



Network Audit Completed By:

Technician Name

Date

