
Basics of Creating A Local Area Network with Internet Access

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1 How to Create a Local Area Network with Access to the Internet Using One Phone Line

Under the LRC Project, the Centers of Education and Development were granted a computer, a modem and a phone line. In the beginning, the needs of the institutions' medical staff were fully satisfied. However, an urge to be better updated has arisen gradually.

Could their needs of today be taken care of by their current assets? Yes!

Possible solutions are:

1. Share a good phone line with the workplaces featured with computers and modems, and have the staff get on-line on a timeshare basis.
2. Arrange the computers into a local area network, and provide a good modem, connected to a good phone line, for public use. Software exist allowing that much in Windows.

Either way has advantages and disadvantages. One of the worst thing about both is that they allow only one user to be on-line at a time, after which he must close the connection. The next user, in turn, again, will connect from his working place. Note that as the session continues, the active user may not be on-line all the time. While he or she peruses the information, another could take advantage of the Internet.

3. Arrange the computers into a LAN so that all clients could access the Internet at a time via a good modem connected to a good phone line. The standard offer for the Microsoft is Microsoft Exchange Server. However, it is quite an expensive and demanding solution. There are shareware products allowing more than one user to work with the Internet and E-mail. Some of the most successful and highly rating products are WinGate and MDAemon.

1.1 Arranging Several PCs into a Local Area Network for Shared Access to the Internet

There is a variety of different solutions depending on your needs and funds. Consider one of the easiest and cheapest solutions for as many as 3-10-15 PCs in the same or adjacent rooms.

1.1.1 Main components (hardware):

- PCs;
- A Network Interface Card for each PC;
- Cables;
- Hub;
- Modem;
- A phone line.

1.1.2 Main components (software):

- Windows 95/98/NT. TCP/IP Protocol;
- WinGate;
- Standard Internet applications.

1.1.3 Requirements for the ISP:

- No special requirements except that the ISP must support an account for access to the Internet, using say, dial-up.

1.2 General Description

- A. One PC is supposed to be run as a server. The others will be hereinafter referred to as clients. It is assumed that the server is the most powerful of the PCs.
- B. A client's user works with Internet applications as if the client were connected directly to the Internet.
- C. The server is connected to the clients via LAN, and performs the following actions:
 - Provides the connection to the Internet. In the simplest case, this is the dial-up connection via a modem connected to a regular phone line, but, in general, the connection can be of any type using a fixed or a dynamic IP address. In the case of the dial-up connection, the server establishes the connection every time the client chooses to make use of the Internet;
 - Receives clients' queries, arrange them into packets and sends them through to the Internet from its IP address;

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- Receives the requested information from the Internet, analyzes and sends it through to the respective LAN clients;
 - Saves your money by closing the external connection every time it is reported idle for more than xx min.

2 WinGate

WinGate is an Internet access sharing solution. WinGate supports the so-called proxies, such as POP, SMTP, WWW, FTP, Telnet etc., whereby bringing full Internet access to the client. Also allows the client to run Real Audio, ICQ, NetMeeting etc.

2.1.1 WinGate 4.x Overview

- WinGate Standard is a solution for small businesses, while WinGate Pro for enterprise-level organizations.
- WinGate Pro features a remote administration capability and an extended user database with extensive capabilities.
- WinGate allows password authentication, in order to prevent unauthorized access from the Internet.
- WinGate allows, if necessary, access the Internet on a timeshare basis. Every client has their specific days of the week and hours of the day on which they are allowed to get access to the Internet. For instance, you can restrict access to the Internet until a certain time, while access to e-mail (POP and SMTP) remains unrestricted at any time.
- WinGate has logging capabilities allowing the user to monitor connections and sessions of separate services with as much detail as deemed necessary.
- WinGate automatically gets the user on-line. The user has the impression that he has been on-line continuously. The user does not have to know the password to get on-line.
- WinGate is a licensed product. For a full description and pricing, check out WWW.wingate.com. 3-User WinGate Standard 4.5 sells at \$69.95. This version supports up to three connections from the clients. The actual number of PC so serviced can be more than three.
- Feel the cost savings: they are what WinGate brings to you immediately, and any client using a separate ISP account never.

2.1.2 System Requirements for WinGate 4.x

- ⇒ WinGate Server installed on a LAN computer connected to the Internet.
- ⇒ Internet Client installed on a LAN computer and providing access to the Internet via the WinGate Server. (No need to have WinGate installed on every client, one WinGate Server on the server and a TCP-IP LAN will do perfectly.)

⇒ System requirements for WinGate 4.x Server and WinGate Internet Client:

Server:

- ✓ Windows 95, 98, NT 3.51,4.x
- ✓ The most recently updated Service Pack
- ✓ Winsock 2
- ✓ TCP/IP Network Protocol

Client:

- ✓ Windows 95, 98, NT 4.x
- ✓ The most recently updated Service Pack
- ✓ TCP/IP Network Protocol

There are no special requirements for hardware except that they must support the connection in the above configuration.