user guide

LAPLINK®

The Standard in Remote Control and File Transfer

GOLD 11.5

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Trademarks

Patents

SpeedSync™ U.S. Patent Number 5,446,888

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LapLink® Gold User's Guide
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1 Introducing LapLink Gold

Why LapLink?

LapLink gives you the freedom to leave the office without giving up access to your office computer and network resources. Whether you're traveling on business or working from home, you can still read your e-mail, share the latest files with coworkers, access network programs and databases, browse the Internet over a high-speed connection, and collaborate with colleagues. Things you once could do only in the office you can now do remotely.

Suppose you work at home

Instead of joining the morning rush-hour traffic, you sit down at your home computer, connect to your office, and begin your workday as usual, by tackling your e-mail.

While finishing your orange juice, you read your messages, write new ones, send replies—in other words, you operate much as you would in the office. You're using LapLink. In particular, you're using Remote Control, one of the LapLink services, to operate your office computer from home.

On your home monitor you see what you would have seen had you commuted to work, and you operate your e-mail program as you would have from the office. You can even use your home printer for those messages you'll review later.

Forget to get the latest copy of a file before leaving the office? Move to File Transfer, another LapLink service, and drag the file from the folder on the office network to its location on your hard drive at home. Since you're updating a file already on your home computer, the file is transferred almost before you know it. (In fact, LapLink merely updates the file, transferring only the parts that have changed.)

Returning to Remote Control, you start a network application and access the company's huge product database. Just as you thought, customers ordered more blue widgets last month than during the previous two months combined! More grist for the quarterly report you're working on.

While you're still connected, you check out a rumor. Is the competition really selling their widgets at cutthroat prices? Connecting over the dedicated Internet line in the office, you visit the competition's Web site. Whew, no price war after all!

A final check of your e-mail confirms your suspicions. It's off to Chicago tomorrow for a two-day business trip.

Suppose you're on a business trip

At the airport, you arrive early enough to check your latest e-mail and send a message you've forgotten in your rush to pack. Using your PDA, you log on to the LapLink Everywhere Service Center and display the messages waiting for you back in the office. By subscribing to the LapLink Everywhere service, you're able to access your office computer from your PDA or any other device capable of surfing the Internet.

Settling into your hotel room hours later, you take your eyes off the view long enough to discover a dedicated digital phone line. All the better to connect your laptop to your office computer, first by dialing the local number for your Internet service provider and then by opening a LapLink connection over the Internet.

It's been a busy day. You need to catch up with your coworkers and exchange the latest files with them. You rush through your e-mail, finishing in time to connect to a coworker's computer. Her e-mail sounded desperate: if

you're free before 7 o'clock this evening, could you help with the cover art for the annual report?

Now you're looking at her monitor and talking to her at the same time, using another LapLink service, Voice Chat. After some discussion and trying this and that, the two of you agree: make the logo larger and reverse the colors. She'll have a finished draft waiting for you on the network in an hour.

In an hour, however, you expect to be at your favorite Chicago restaurant, choosing from the dessert menu. On your way out the door, you schedule LapLink to reopen the connection with the office and synchronize folders on your laptop with folders on the office network.

By the time you return to your hotel room, LapLink will have exchanged the quarterly report you finished on the red-eye flight this morning for the reports that await your review on the office network. And you'll get the latest draft of the cover art as well. Now to find the time to review all of this.

Staying in touch with the office

Phone lines, modems, and LapLink: with these basics you can connect to the office from home or elsewhere. To these basics you can add a network, a network server, and the Internet. You determine how to connect by considering your office setup and what you want to accomplish when you are connected.

You can connect to the office if your home computer or your laptop has at least a modem and a phone line to connect to.

Depending on the availability of a network and the Internet in your office, you can then make any or all of these kinds of connections:

- To your office computer directly
- To your office computer or another office computer through the office network
- To your office computer through the Internet

Connecting directly to your office computer

If your office computer is equipped with a modem, you can connect to the computer directly, using Connect over Modem.

Turn on the modem and leave LapLink running when you leave the office. Then connect through the modem and run programs and transfer files as you would normally.

If your computer is attached to a network, you can read your e-mail and access the customary network resources, though you cannot connect to other computers on the network.

Connecting to the office network

If your office has a network, you can connect to the network and then to any computer running LapLink on the network, including your own. In fact, you can access any network resources normally available to you from the office. If you browse the Internet from your desk at work, for example, you can browse it from afar, too.

To connect to the office network, simply dial in to a dedicated network dial-up server using Dial-up Networking.

Connecting over the Internet

Many workstations have direct Internet access over dedicated, high-speed connections. If your office computer is one of these—and you have Internet access from your home computer or your laptop—you can connect to your office computer in either of two ways:

- By setting up a LapLink Everywhere account for your office computer and connecting through the LapLink Everywhere server[1]
- By publishing the computer's address through an ILS (Internet locator service) and specifying that address when you connect

Connecting by either means is like connecting to your office computer by modem, with these advantages:

- The office computer does not require a modem.

1 LapLink Everywhere is especially useful when you connect to or from a computer behind a firewall. No special firewall configuration is required.

- If you make a local call to connect to the Internet while you're away from the office, you can save money on your long-distance connections to the office.
- If you connect to the Internet over a high-speed line while you're away from the office, you can improve the speed of your connection to the office.

Connecting from a Web browser

There may be times when you want a file or an e-mail message from your office computer but setting up your laptop and running LapLink is not convenient or feasible. For such situations, you can leave the LapLink Everywhere program running on your desktop and connect from a PDA or any other device that can surf the Internet. You can open a connection from almost any browser, even in libraries and Internet cafés.

Working within a Web browser on your Internet device, you can perform some of the same operations you perform within LapLink:

- Read and send e-mail messages, adding attachments as you wish
- Upload and download files to and from your desktop
- Control your desktop remotely
- Access SQL databases on servers connected to the desktop

Connecting from the office

With greater resources at hand, you can make faster connections—and connect in more ways—while working in the office. Connect over a corporate network, for example, for the fastest file transfers. Use a LapLink cable to synchronize your desktop and laptop before and after you travel. And take advantage of your organization's direct connection to the Internet for cheap connections to distant locations.

Connect to other computers on your network

If your office is equipped with a local network (LAN), you can connect directly to any other network computer running LapLink using Connect over LAN (Network). Because LapLink connections over networks are fast, they are ideal for sending large amounts of data in a short time.

Suppose it's your job to distribute files to several computers every Tuesday. To automate the operation, create an Xchange Agent file by showing LapLink which files to copy and where to copy them. When Tuesday arrives, run the Xchange Agent yourself or schedule it to run unattended, at a time when the computers are usually idle. LapLink automatically connects to the computers, transfers files to the designated folders, and disconnects, all without assistance.

It may also be your job to maintain those computers. Without leaving your desk, you can use Remote Control to troubleshoot problems on other computers, chatting with their users, if necessary.

Connect your laptop to your desktop

If you take your laptop—and your work—with you when you leave the office, you know the routine: update files on your laptop before you leave; update files on your desktop when you return.

To update files on either computer, attach a LapLink cable and run LapLink on both computers. A connection opens automatically.

You could then locate the most recent files, whether on the laptop or the desktop, and copy them to the other computer. Instead, you create an Xchange Agent to perform the operation automatically. You also set up LapLink to run the agent whenever you start LapLink.

In the future, simply attach the cable and run LapLink on both computers. Your files will be updated automatically.

Connect to distant computers over the Internet

Does your office have a direct line to the Internet? If so, go online and use Connect over LapLink Everywhere or Connect over ILS to locate other LapLink computers on the Internet and open connections. By combining LapLink and the Internet, you can connect to computers anywhere in the world.

Before you can use Connect over LapLink Everywhere, any computers you want to connect to must have LapLink

Everywhere accounts. You can then connect to these computers through the LapLink Everywhere server.

Before you use Connect over ILS, other LapLink users must set up LapLink on their computers so that their e-mail addresses, or other unique identifiers, are “published” through an ILS (Internet locator service) as their Internet addresses. They then notify you of their new addresses.[1]

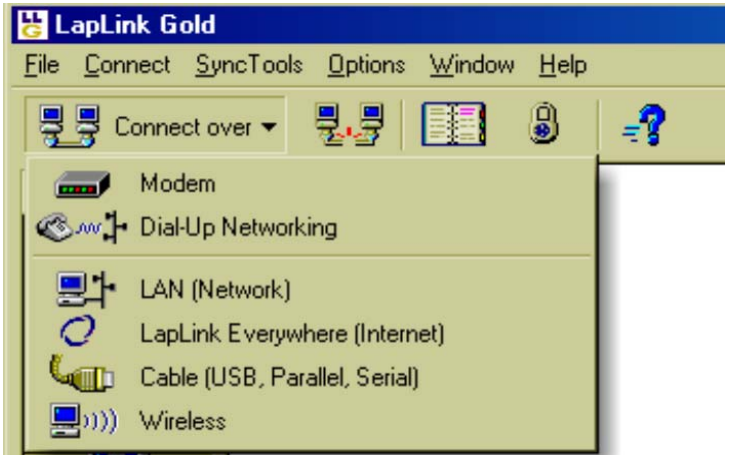
Once you go online and run LapLink, merely supply a computer’s Internet address to locate the computer and open a connection.

1 Some computers have IP addresses that do not change. If you connect to one of these computers, use Dial-Up Networking and supply that computer’s IP address.

2 Connecting to other computers

How can I connect to other computers?

Determine how to connect to another computer from the resources available to the two computers. For example, are both logged on to the same office network? Then connect over the network. Use the tables in this section to help decide how to connect. No matter which kind of connection you choose, you can always use File Transfer, Remote Control, and the other LapLink services.



LapLink provides several ways to connect to other computers.

Which method you use depends on the resources available to the computers.

Connecting over the Internet

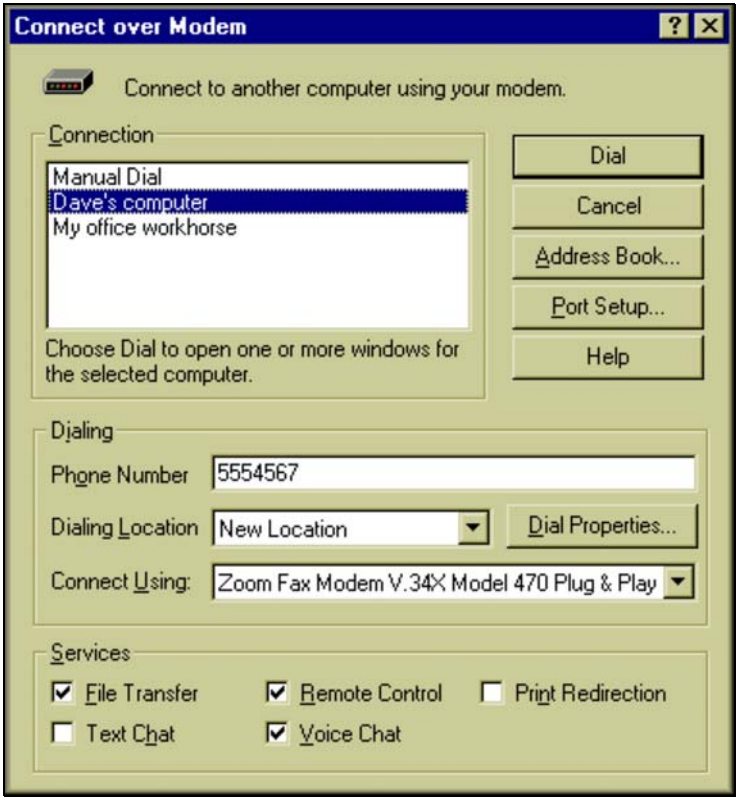
Can you connect to the Internet on both computers?	Then connect over the Internet this way:
Yes	You have a choice: • Subscribe to the LapLink Everywhere service and then use **Connect over LapLink Everywhere (Internet).** If either computer is behind a firewall, this is the easiest Internet connection. See page 22. • Connect to the Internet as usual and then use **Connect over ILS** in LapLink. This connection uses an Internet locator service. See page 24.
No, but the office has a direct connection to the Internet	Use **Connect over Dial-Up Networking** to dial in to a network server and connect over the office Internet connection.

Connecting over modems, networks, cables, or wireless devices

What resources are available for connections		Then connect to another LapLink computer this way:	For details see
on the local computer?	on the remote computer?		
modem	modem	Use **Connect over Modem** and dial in to the modem on the remote computer. Modem connections are available in all versions of Windows.	page 16
modem	modem and network	Use **Connect over Modem** to connect directly to the remote computer and access all of the network resources available to that computer.	page 16
modem	network with a dial-up server	Use **Connect over Dial-Up Networking** to dial in to the dial-up server and connect to any LapLink computer on the network.	page 18
network	network	Use **Connect over LAN (Network)**. Network connections are available in all versions of Windows.	page 30
parallel, serial, or USB port	parallel, serial, or USB port	Attach a LapLink parallel, serial, or USB cable to each computer. The connection opens automatically. Serial connections are available in all versions of Windows. Parallel connections are available in Windows 95/98 and Windows Me. USB connections are available in Windows 98, Windows 2000, Windows ME, and Windows XP.	page 34
wireless device	wireless device	The connection opens automatically as soon as the devices come within range of each other.	page 36

Connecting directly by modem

Using modems and a phone line, you can connect to another computer or to an office network. For a direct, LapLink to LapLink connection, dial a modem on another computer using Connect over Modem. For a connection to an office network—and then to any LapLink computer on the network—use Dial-Up Networking to dial a dedicated dial-up server (RAS).



Use Connect over Modem to dial a modem on another computer and open a LapLink connection to that computer.

Entries you have created for modem connections in Address Book appear in the connection list to make connecting easier.

When you dial directly to another LapLink computer, you have access to all the programs and files available to that computer (including any network resources if the computer is logged on to a network).

Connecting through a network

Once on the network, you can connect to another LapLink computer and use LapLink services just as you would in a direct modem-to-modem connection. But there's more. When you dial in to a network, you can also:

- Connect to *any* LapLink computer on the network, not just one. (You can even transfer files from one computer to another.)
- Access all the network resources available to you in the office. If you normally browse the Internet over the network, for example, you can do the same thing from a remote location, using the browser on your local computer.
- Enhance security by combining LapLink password protection with network security.

For a Dial-Up Networking connection, your office network (either TCP/IP or IPX) must have a dial-up server. (If in doubt about your network, ask the network administrator.)

Using Dial-Up Networking, you dial in to the network through this server.

- The LapLink security setup of the computer you are connecting to must be changed to allow incoming connections. See page 46.
- LapLink must be running on both computers.
- Modem ports must be enabled in LapLink on both computers.

Dialing from an Address Book entry

Before dialing a computer, it's a good idea to create an Address Book entry for that connection. Use the entry to store the phone number, requests for services (such as File Transfer and Remote Control), password, and other pertinent information.

When you use Connect over Modem, you see the Address Book entries you created for modem connections. When you use an entry to dial a connection, information stored in the entry is passed on to the remote computer for you. For details about using Address Book for modem connections, see page 20.

To connect to another computer by modem:

1 Click the Connect Over button on the LinkBar, and then click Modem.

2 In the Connections list, click the connection you want to open.

The connections listed under Manual Dial are your Address Book entries for modem connections. To create a new entry, click Address Book.

3 In the Dialing Location list, click the location you're dialing from.

4 Under Services, check services you want to use.

5 Click the Dial button.

Dialing manually

To dial a connection that is not complicated by such considerations as calling cards, outside lines, and country codes, you can type the phone number without creating an Address Book entry beforehand. LapLink dials the number exactly as you type it, regardless of how you have set up Dialing Properties.

To dial manually:

1 Click the Connect Over button on the LinkBar, and then click Modem.

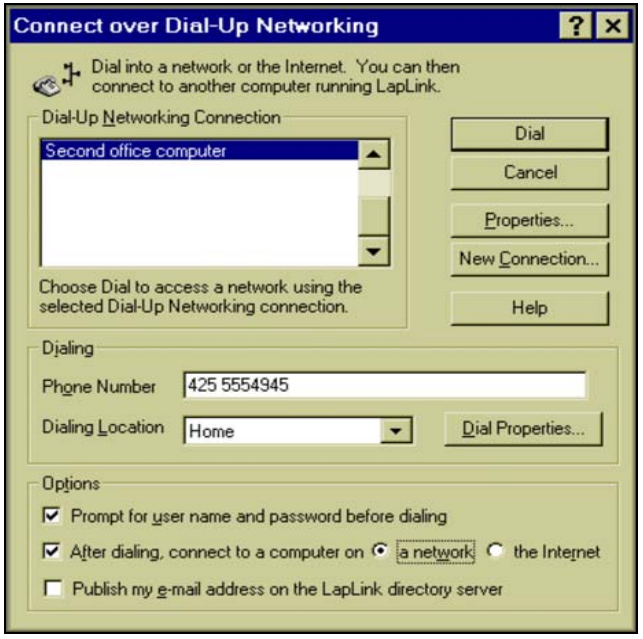
2 Click Manual Dial.

3 In the Phone Number box, type the number to dial.

4 Click the Dial button.

Dialing in to a network through a network server: Dial-Up Networking

Use Dial-Up Networking to dial in to a dial-up server (RAS) and log on to a network from outside the office. Then connect to other LapLink computers on the network and use network resources as if you were still in the office.



Use Dial-Up Networking to dial in to a dial-up server and connect to a network. Then open connections to other LapLink computers on the network.

Use Dial-Up Networking to access a network after you leave the office. By dialing in to a dial-up server (RAS) on the network, you can connect to any computer running LapLink on that network.

You can also connect to LapLink computers on the Internet and browse the Internet using the Internet connection in the office. In short, you can access the same network resources you use in the office.

Before you use Dial-Up Networking

- Dial-Up Networking, a Windows feature, must be installed on the computer you dial from. See Windows help for instructions.
- Your network must have a dedicated dial-up server (such as Novell NetWare Connect, Windows Remote Access Server, or Shiva NetModem). The computer you connect to must be connected to an IPX or TCP/IP

network. It must also be running LapLink, and its security setup must have been altered to allow incoming LapLink connections. See page 46.

Setting up a Dial-Up Networking connection

Before using Dial-Up Networking, create a Dial-Up Networking connection to the network server by supplying the number to dial.

To create a Dial-Up Networking connection:

1 Click the Connect Over button on the LinkBar and then click Dial-Up Networking.

2 Click the New Connection button and follow the instructions on your screen.

Connecting to a network computer using Dial-Up Networking

To use Dial-Up Networking to connect to a network computer:

1 Click the Connect Over button on the LinkBar and then click Dial-Up Networking.

2 In the list of connections, click the connection to your network server.

3 Ensure that this box is checked: After Dialing, Connect to a Computer on a Network.

4 Click the Dial button.

5 When prompted, type the user name and password[1] required by the dial-up server.

6 In the Connect over LAN (Network) dialog box, click the name of the computer you want to connect to.

If the computer is not listed and you are attempting to connect over a TCP/IP network, click the TCP/IP Addresses tab. Then do either of the following:

- In the Connections list, click the name of the computer you want to connect to.[2]
- Under TCP/IP Name or Address, type the IP address of the computer.[3]

7 Under Services, verify that the services you want to use are checked.

8 Click OK.

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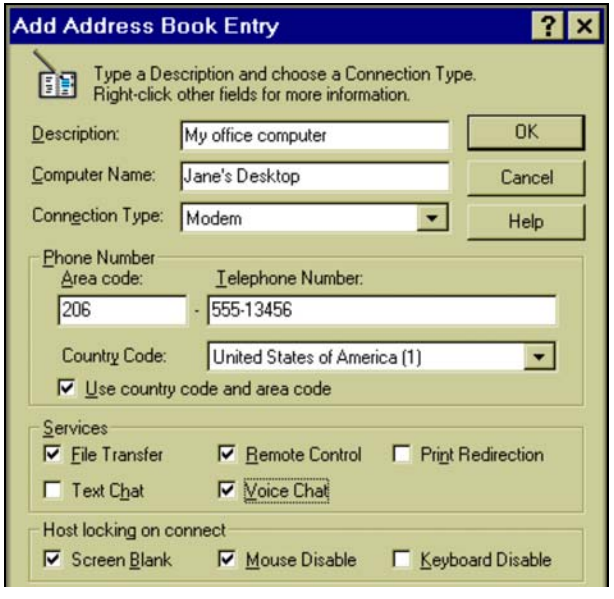
1 For information about typing capital letters and lowercase letters in passwords, see page 21.

2 The computers in the Connections list are those you have placed in Address Book. For information about creating Address Book entries for Dial-Up Networking connections, see page 20.

3 For information about determining an IP address, see page 31.

Using Address Book for modem connections

Making entries in Address Book simplifies the process of opening the same direct modem connections time after time. In your entries you store phone numbers, requests for services (such as File Transfer and Remote Control), and passwords. When you use Connect over Modem, this information is passed on to the remote computer for you. You can also set up entries for connections you make to network computers after you dial in to a network using Dial-Up Networking.



For modem connections you make again and again, simplify the connecting process by adding entries to Address Book.

Then access the information you store in these entries when you use Connect over Modem or Dial-Up Networking.

Address Book is a convenient way of storing all the information you need to connect to another computer using Connect over Modem.

Address Book works in tandem with Dialing Properties, the Windows feature that lets you determine how your numbers are dialed. Use Dialing Properties to charge a call to a calling card, for example, reach an outside line, or place long-distance and international calls. For more information about Dialing Properties, see Windows help.

To create an Address Book entry for a Connect over Modem connection:

1 Click the Address Book button on the LinkBar, and then click the Add button.

2 In the Description box, type a brief description of the remote computer for your own reference.

3 In the Computer Name box, type the LapLink name assigned to the remote computer.

4 In the Connection Type list, click Modem.

5 Under Phone Number, type the area code and phone number, and click the country code.

TIP If you want to have a phone number dialed exactly as you type it in the Telephone Number box, clear this box: Use Country Code and Area Code.

TIP Requests for services in Address Book are honored only if the security setup of the remote computer permits.

6 Under Services, check the services you want to use.

TIP You can change your selections later, as part of the connection process. You can also request new services after you connect.

7 Under Host Locking on Connect, check the kind of locking you want to take effect on the remote computer when you connect for Remote Control.

You can lock a host (blank its screen or disable its mouse or keyboard) only if it has been configured to allow locking.

8 Under Security Information to Send, type the log-in name and the password you must provide in order to gain access to the remote computer. Reenter the password to confirm.

When you finish the entry, you see Address Book and the description of the new entry. If you want to create another entry, click Add again and complete the entry. Otherwise, click Close.

Using Address Book for dial-up connections to network computers

For LapLink connections you make after dialing in to a network, set up Address Book entries to store requests for services and security information. This information is passed to the network computer after you connect to a network using Dial-Up Networking.

As the Connection Type, use Network: Available Now if the computer normally appears in the list of available computers when you use Connect over LAN (Network) in the office. Otherwise, use Network: TCP/IP Address and type the computer's IP address. To determine a computer's IP address, see page 31.

Entering passwords

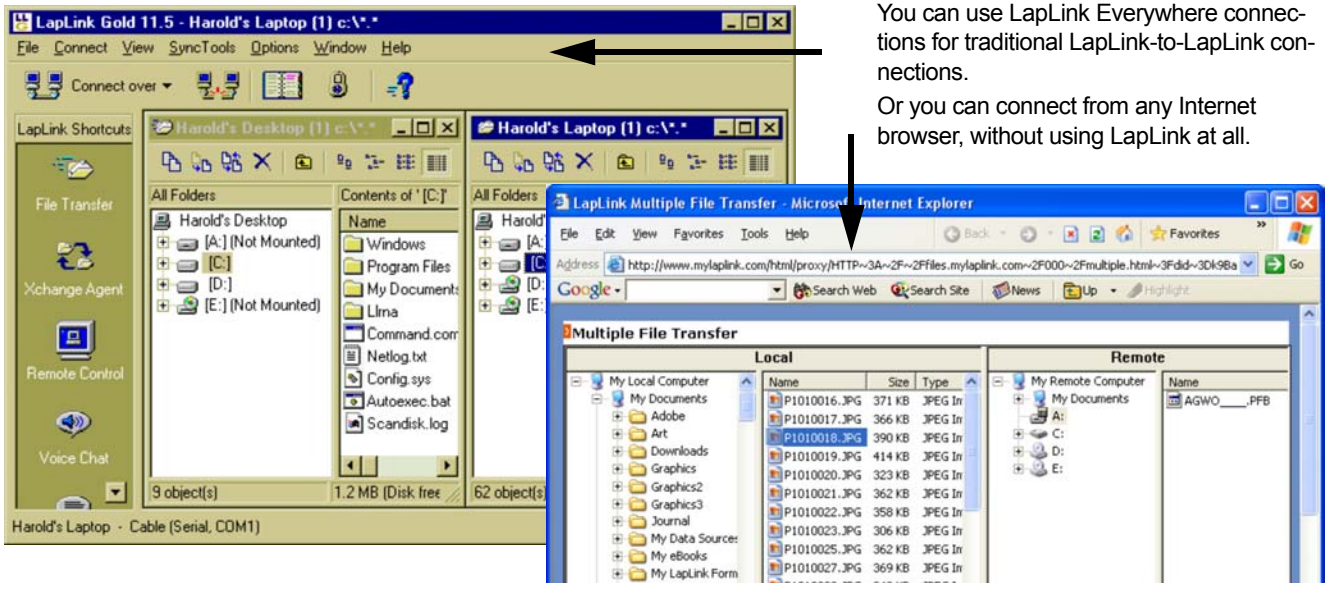
LapLink Gold passwords are case-sensitive (*i* and *I*, for example, are treated differently). For connections to other computers running LapLink Gold, type passwords in capital or lowercase letters exactly as they were typed on those computers.

NOTE Passwords in LapLink Pro, LapLink Tech, or LapLink 7.5 or earlier are not case-sensitive. In Address Book entries for connections to any of these versions, type passwords in ALL CAPITAL LETTERS. If you have old Address Book entries for such connections, retype their passwords in all capital letters.

NOTE Because of the change in case sensitivity, Address Book entries created in an earlier LapLink version may no longer let you connect to computers that have also been upgraded. Have new passwords set up on those computers; then change your Address Book entries to match.

Connecting over the Internet using LapLink Everywhere

LapLink Everywhere[1] offers the easiest and most flexible Internet connections. They are the easiest because they maintain security without the need to wrestle with firewalls. They are the most flexible because you can connect not just in the traditional LapLink-to-Laplink way but from any device with which you can browse the Internet, including cell phones, PDAs, and public access computers like those found in libraries and Internet cafés.



You can use LapLink Everywhere connections for traditional LapLink-to-LapLink connections.

Or you can connect from any Internet browser, without using LapLink at all.

LapLink Everywhere and LapLink Gold are two programs that have been designed to work separately or together. Unlike LapLink Gold, LapLink Everywhere needs to be installed only on the host computer—the home or office computer you want to connect to. It does not have to be installed on the computer you connect from.

Once the LapLink Everywhere program is installed on the host computer, you can connect to it in two ways:

1 LapLink Everywhere is a subscription service. Your purchase of LapLink Gold 11.5 entitles you to 30 days' free use of the LapLink Everywhere mobile access service. For more information about LapLink Everywhere fees and features go to www.LapLink.com.

- Open a LapLink connection from another computer running LapLink Gold. LapLink Gold must be running on both computers, but LapLink Everywhere needs to be installed and running only on the host.
- Open a LapLink Everywhere connection from an Internet browser. Simply leave LapLink Everywhere running on the host computer. You do not have to run LapLink at all.

For maximum flexibility, leave both LapLink Gold and LapLink Everywhere running on the host computer. You can then connect from another computer running LapLink Gold and from any device that allows you to browse the Internet.

Only LapLink-to-LapLink connections offer the complete range of LapLink features. When you use an Internet browser, you can read e-mail, transfer files, and perform remote control, but advanced features like automatic synchronization are not available.

Preparing to use LapLink Everywhere

As part of the installation of LapLink Gold you are asked whether you want to set up your LapLink Everywhere account and install LapLink Everywhere.

Simply create a unique user name and password. If you install LapLink Everywhere on more than one computer, be sure to use the same user name and password for each one.

As with other kinds of connections, you must configure the security setup of the host computer to allow incoming connections. See page 46.

If you intend to connect to the computer from an Internet browser and use remote control (at additional cost), you must also install LapLink Secure VNC or WinVNC on the host computer.

If you intend to access a SQL database, a SQL database server for which you have an ADO connection string. In addition, the remote device must have Microsoft Data Access Components (MDAC) 2.6 or later installed on it.

Connecting from another LapLink computer over LapLink Everywhere

To connect over LapLink Everywhere to another computer running LapLink:

1 Click the Connect Over button on the Linkbar and then click Connect over LapLink Everywhere (Internet).

2 Type the user name and password set up for your LapLink Everywhere account.

3 Click OK.

4 When asked again for a user name and password, supply whatever is required by the LapLink Gold security setup on the host computer. (See page 46.)

Connecting from any Internet browser

You can connect to the host computer from almost any device equipped to browse the Internet—from another PC or a Mac to a PDA or an Internet telephone. The chief requirement is that the device must be set up to allow cookies.

To connect over LapLink Everywhere from an Internet browser:

1 Log on to www.MyLapLink.com.

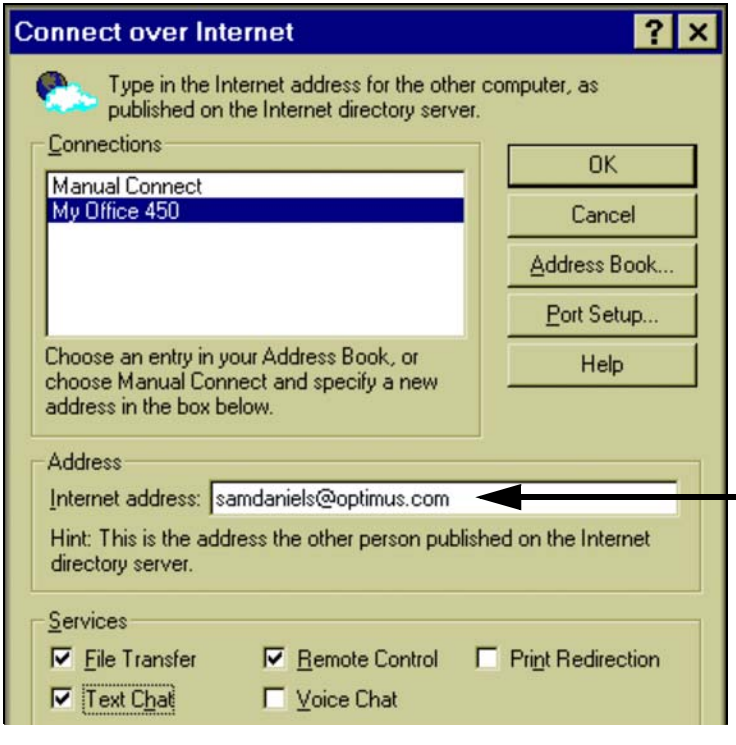
2 Type the user name and password set up for your LapLink Everywhere account.

3 Click the Login button.

4 When asked again for a user name and password, supply whatever is required by the LapLink Gold security setup on the host computer. (See page 46.)

Connecting over the Internet using an ILS

Connect to the Internet using an ILS (Internet locator service), and you can open connections to other LapLink computers anywhere in the world, without spending a fortune. To make a computer easy to find on the Internet, use the LapLink ILS to "publish" the computer's Internet address. Other computers can then supply this address to open connections using Connect over ILS.



Go online and use Connect over ILS to locate and open connections to LapLink computers anywhere on the Internet.

Make a connection by supplying the address published by a remote computer through the LapLink ILS.

When you connect to another LapLink computer on the Internet, you can use Remote Control, File Transfer, and any of the other LapLink services you would use when connected directly by modem—often at reduced cost. You can connect over the Internet using LapLink Everywhere (see page 22). Or you can publish your computer's address through an ILS (Internet locator service) like the one hosted by LapLink Software and then connect using Connect over ILS. Simply supply the Internet address published through the ILS.

Before you can connect using an ILS

- Both computers must be connected to the Internet.[1]
- The remote computer (the one you are connecting to) must have its Internet address published through an ILS (Internet locator service). See page 26.
- The security setup of the remote computer must have been configured to allow incoming connections. See page 46.
- The TCP/IP ports must be enabled in LapLink on both computers. See page 137.
- LapLink must be running on both computers.[2]

Using Connect over ILS

To connect to another LapLink computer using an ILS:

1 Connect to the Internet as usual.

2 On the Connect menu, click Connect over ILS.

3 If you have created an Address Book entry for the connection you want to open, click the connection in the Connections list.

Otherwise, click Manual Connect. In the Internet Address box type the remote computer's Internet address (the one the remote computer has published through an ILS.

4 Under Services, check the services you want to use.

5 Click OK.

Using Address Book for ILS connections

For LapLink connections you make using Connect over ILS, you can set up Address Book entries to store Internet addresses, requests for services, and security information. All of this is passed on to the network computer when you use Connect over ILS.

When you create an Address Book entry for the Internet, be sure to specify Internet Address in the Connection Type box.

Opening Internet connections using Connect over LAN (Network)

Just as you use Connect over LAN (Network) for connections on a local TCP/IP network, so you can use it for connections on the Internet, a global web of TCP/IP networks.

When you use Connect over LAN (Network), you must supply the computer's IP address, not an address published through an ILS.

Connect over LAN (Network) is most useful when you connect to computers whose IP addresses never change. For more information about using Connect over LAN (Network), see page 30.

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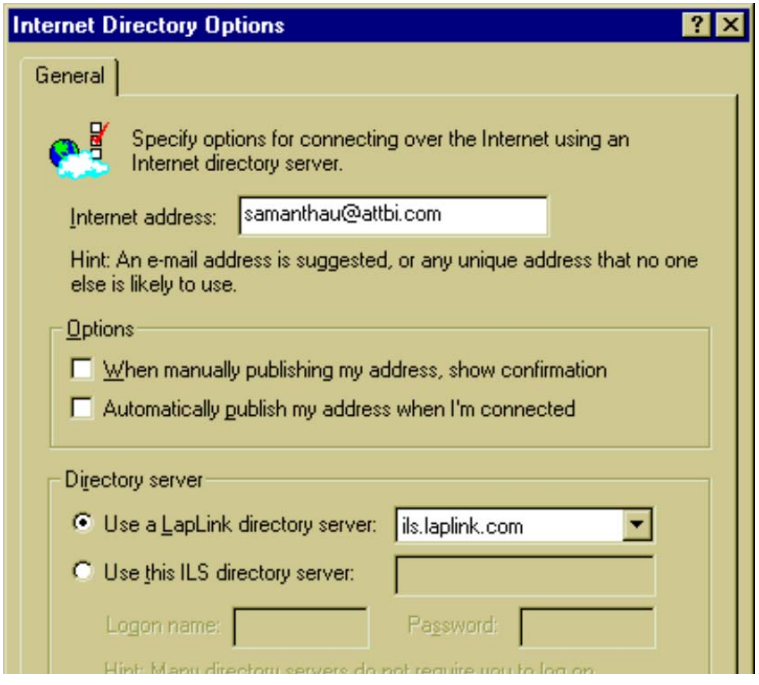
1 If you are out of the office and without access to the Internet, dial back to the office network and use the office Internet connection. See page 30.

2 If you are out of the office and without access to a computer with LapLink software, you can use LapLink Everywhere to connect. See page 22.

Making a computer available for ILS connections

Internet connections, like e-mail messages, need addresses. To make your computer available to other LapLink computers on the Internet, publish its address through an ILS (Internet locator service). Any LapLink user who knows this address can then locate your computer on the Internet and open connections from anywhere in the world. As a free service to our users, LapLink maintains the LapLink ILS server to promote Internet connections between computers running LapLink.



To allow other LapLink computers to connect to a computer on the Internet, set up LapLink to have the computer's address published through the LapLink ILS.

In Internet Directory Options, specify an e-mail address or some other unique identifier as the Internet address.

Then notify other LapLink users so that they can connect by supplying the Internet address you have specified.

Connecting to computers on the Internet is easy—when you know their IP addresses. But IP addresses can be hard to determine, and they often change. If you dial in to an Internet service provider, for example, your computer may be assigned a different IP address each time you go online.

So how do you make your computer available to other LapLink computers on the Internet? You have your e-mail address (or other unique identifier) "published" as your Internet address. You then let other LapLink users connect to your computer by telling them your Internet address.

NOTE If the computer is behind a firewall, there are additional requirements. See page 28.

Use LapLink to specify the address to be published and when it will be published—for example, whenever you are using LapLink on the Internet.

Use the LapLink ILS to publish your address; the directory is available without cost to LapLink users, and you don't have to sign up to use it.

NOTE Publishing your Internet address does not open your computer to unwanted connections. LapLink users who know your published address can connect; others cannot, even if they are using NetMeeting or other programs that rely on Internet directories.

To set up LapLink to have your computer's address published on the Internet:

1 On the Options menu, click Internet Directory Options.

2 In the Internet Address box, type your e-mail address or another unique identifier.

This will be your Internet address. Give it (as well as log-in name and password) to any LapLink user you allow to connect to your computer on the Internet.

3 Set options to determine how to publish your Internet address:

- To publish the address yourself, without a confirmation dialog box, clear this box: When Manually Publishing My Address, Show Confirmation.
- To have LapLink publish your address for you, check this box: Automatically Publish My Address When I'm Connected.

4 Set the Internet directory to publish your computer's address like this: Use a LapLink Directory Server: ils.laplink.com

5 Click OK.

TIP In addition to publishing a computer's Internet address, you must also change its security setup before other computers can connect over the Internet. For more information, see page 46.

Publishing your Internet address

You can set up LapLink to publish your address automatically whenever you run LapLink on the Internet (step 3, above). Or you can publish it yourself.

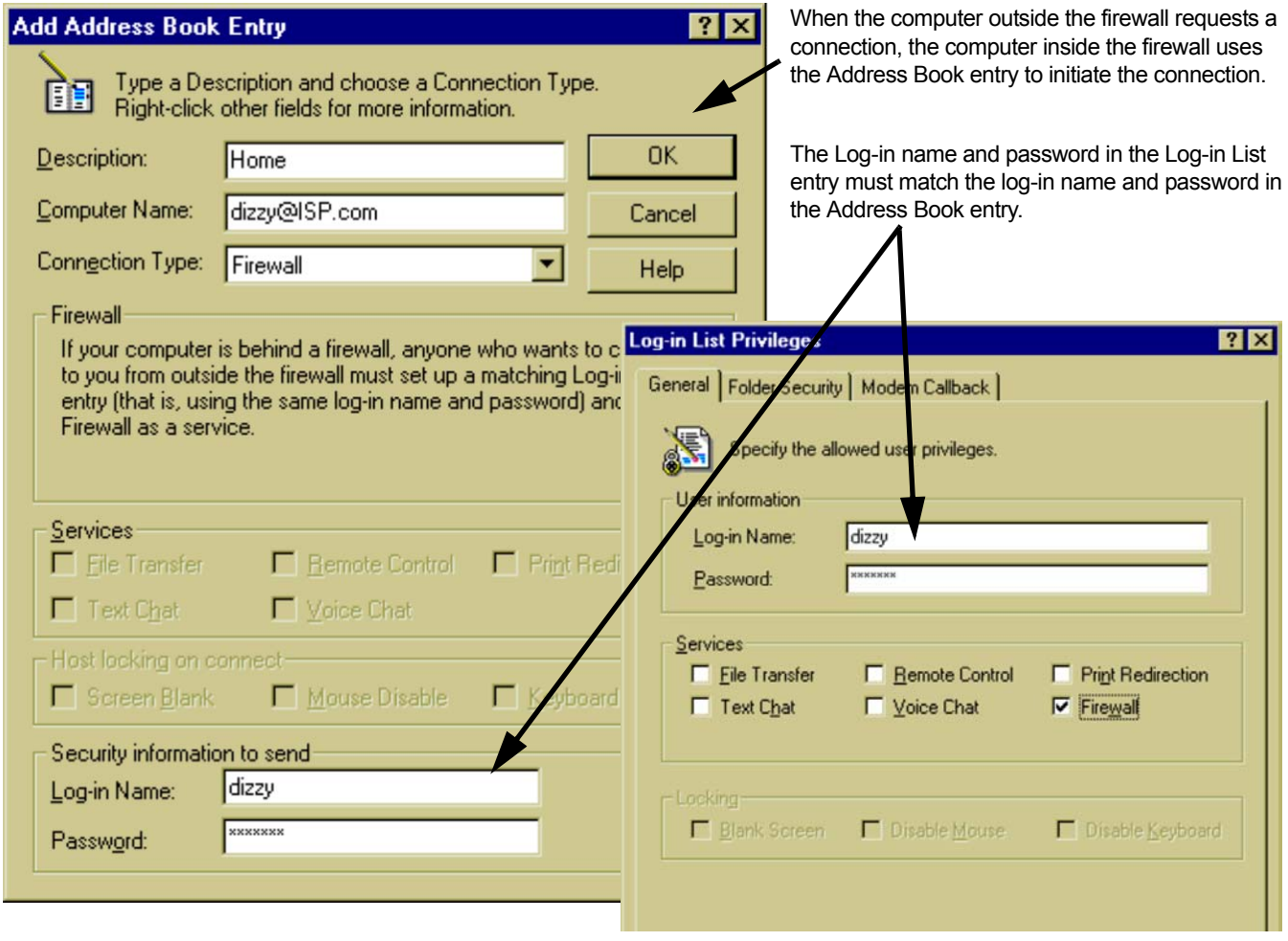
To publish your Internet address yourself:

1 Connect to the Internet as usual.

2 On the Connect menu, click Publish My Internet Address.

Making an Internet connection to a computer behind a firewall

If one of the computers you want to connect to is behind a firewall, you can use LapLink's Firewall Connection Service to make the connection. For example, if you want to connect to your work computer from home and your work computer is behind a corporate firewall.



When the computer outside the firewall requests a connection, the computer inside the firewall uses the Address Book entry to initiate the connection.

The Log-in name and password in the Log-in List entry must match the log-in name and password in the Address Book entry.

You must configure both computers before you can make a firewall connection. First, configure the computer inside the firewall to accept incoming connections by using a Log-in List or by configuring a Public System (Log-in List is more secure) and then create an Address Book entry.

You must also create a Log-in list entry on the computer outside the firewall. This entry must match the Address Book entry you created on the computer inside the firewall.

NOTE If you are sharing your computer with someone other than yourself, you will need to coordinate the firewall configuration with that other person.

TIP As an easier way of dealing with a firewall, consider using a LapLink Everywhere connection. See page 22.

Before you connect to a computer behind a firewall:

- Both computers must be connected to the Internet.
- The computer inside the firewall must publish its Internet address through the LapLink ILS server. See page 26.
- The computer inside the firewall must have an Address Book entry that includes the unique computer name, user name, and password for the computer outside the firewall.
- The computer outside the firewall must be configured to allow incoming connections. See page 46.
- The TCP/IP ports must be enabled in LapLink on both computers. See page 137.
- LapLink must be running on both computers.

NOTE For additional security, LapLink allows users to change the port number that they want to connect through. For more information about Variable Port Allocation, see the readme file located in the LapLink Gold application directory.

Connecting to a computer behind a firewall:

1 Connect to the Internet as usual.

2 On the Connect menu, click the Connect over ILS.

3 If you have created an Address Book entry for the connection you want to open, click the connection in the Connections list.

Otherwise, click Manual Connect. Type the Internet address, log-in name, and password for the computer behind the firewall.

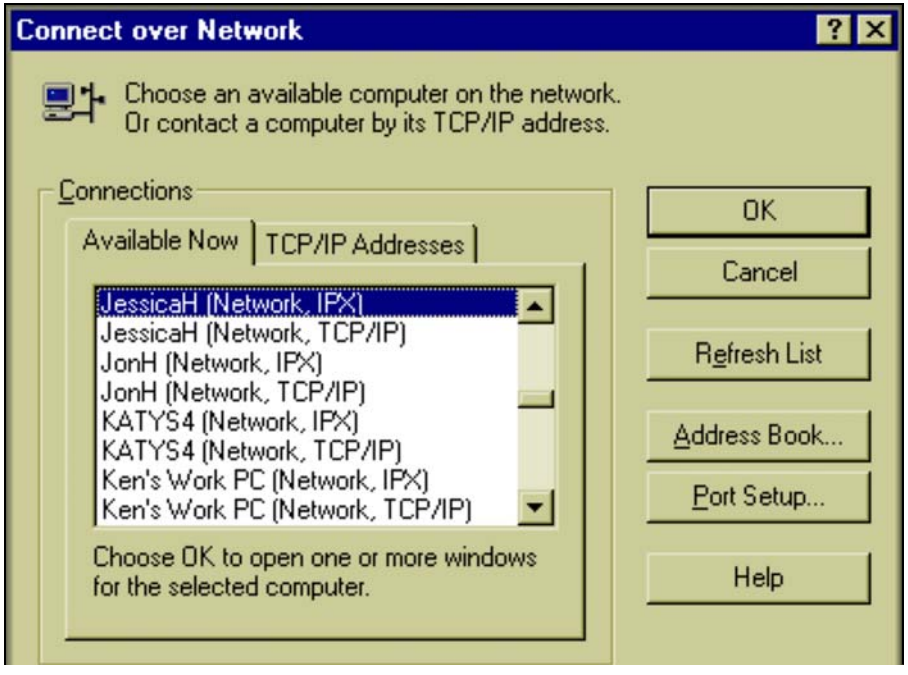
NOTE You can get this information from the owner of the computer behind the firewall.

4 Under Services, check the services you want to use.

5 Click OK.

Connecting over an office network

Connect to any other computer running LapLink on your office network (LAN) and use Remote Control, File Transfer, or another LapLink service. Use Connect over LAN (Network) and click the name of the computer you want to connect to or supply its network address.



Use Connect over LAN (Network) to link computers on an office network.

You can click the name of a computer or switch to the TCP/IP Addresses tab and type the computer's IP address.

You can open a LapLink connection to another computer on your office network, whether it is an IPX (Novell NetWare) network or a TCP/IP network.

NOTE To simplify routine connections over a network, create Address Book entries. See page 32.

You can often open a network connection simply by clicking the computer's name in a list of LapLink computers on the network. To open a connection to a computer that lies outside your portion (subnet) on a TCP/IP network, however, you must provide the computer's TCP/IP address. (There is no list to choose from.)

Before you use Connect over LAN (Network)

- The security setup of the remote computer (the one you are connecting to) must be configured to allow incoming connections. See page 46.
- The network ports (either TCP/IP or IPX) must be enabled in LapLink on both computers. See page 135.
- LapLink must be running on both computers.

NOTE Not only does Connect over LAN (Network) work over local networks, it also connects over the Internet. For details see page 25.

To connect to another computer by network:

1 Click the Connect Over button on the LinkBar, and then click Network.

2 In the Connect over LAN (Network) dialog box, click the name of the computer you want to connect to.

If the computer is not listed and you are attempting to connect over a TCP/IP network, click the TCP/IP Addresses tab. Then do either of the following:

- In the Connections list, click the name of the computer you want to connect to.[1]
- Under TCP/IP Name or Address, type the IP address of the computer.

1 The computers in the Connections list are those you have placed in Address Book. For information about creating Address Book entries for Dial-Up Networking connections, see page 20.

3 Under Services, check the services you want to use, such as File Transfer and Remote Control.

4 Click OK.

Finding a TCP/IP address

To find out a computer's TCP/IP address in Windows 95 or Windows 98:

1 On the Options menu, click Port Setup.

2 Click TCP/IP Network in the Ports list, and then click the Configure button.

3 The TCP/IP address appears in the IP Address box.

To find out a computer's TCP/IP address in Windows NT:

1 Click the Windows Start button, point to Programs, and click Command Prompt.

2 Type `IPCONFIG` and press ENTER.

The TCP/IP address for that computer appears in the IP Address line.

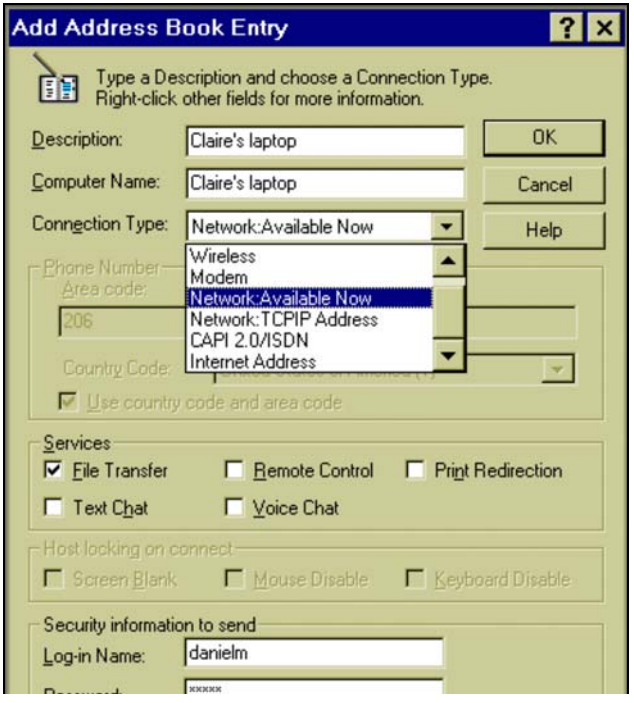
Filtering the list of available network computers

You can display the name of a particular computer in the Connect over LAN (Network) dialog box by typing all or part of the name in the Computer Name Filter box; then click Refresh List.

To display the names of all available computers again, click the arrow next to the Computer Name Filter box, click All Computers, and then click Refresh List.

Using Address Book for network connections

Simplify the process of opening connections by making Address Book entries for network computers you frequently connect to. In each entry you store the kind of network connection, the kinds of services (such as File Transfer and Remote Control) to be opened automatically, and the password. When you use Connect over LAN (Network), this information is passed on to the remote computer for you.



For network connections you make again and again, simplify the connecting process by adding entries to Address Book.

Then access the information you store in these entries when you use Connect over LAN (Network).

When you connect over a local network, you may be able to choose from a list of computers currently available on the network. If not, you type the computer's network (TCP/IP) address. When you create an Address Book entry for a network connection, you designate which of the two types of connections you are using:

- **Network: Available Now** For connections that appear in the list of currently available connections.
- **Network: TCP/IP Address** For connections that require a TCP/IP address.

To create an entry in Address Book for a network connection:

1 Click the Address Book button on the LinkBar and then click the Add button.

2 In the Description box, type a brief description of the remote computer for reference.

3 In the Computer Name box, type the exact LapLink name assigned to the remote computer.

4 In the Connection Type list, click Network Available Now or Network TCP/IP Address.

5 If you selected Network TCP/IP Address, type the IP address of the remote computer under TCP/IP Address.

For help in determining a computer's IP address, see page 31.

6 Under Services, check the services you want to open when you connect to the remote computer, such as File Transfer and Remote Control.

Your requests for services in Address Book will be honored only if the security setup of the remote computer permits.

7 Under Host Locking on Connect, check the kind of locking, if any, you want to take effect on the remote computer when you connect for Remote Control.

You can lock a host (that is, blank its screen or disable its mouse or keyboard) only if it has been set up to allow locking.

8 Under Security Information to Send, type the log-in name and the password you must provide in order to gain access to the remote computer. Reenter the password to confirm.

When you have finished the entry, you see Address Book and the description of the new entry. If you want to create another entry, click Add again and complete the entry. Otherwise, click Close.

TIP To edit an entry in Address Book, click the entry, and then click Edit. To copy an entry for revision as a new entry, click Copy. To delete an entry, click Delete.

Entering passwords

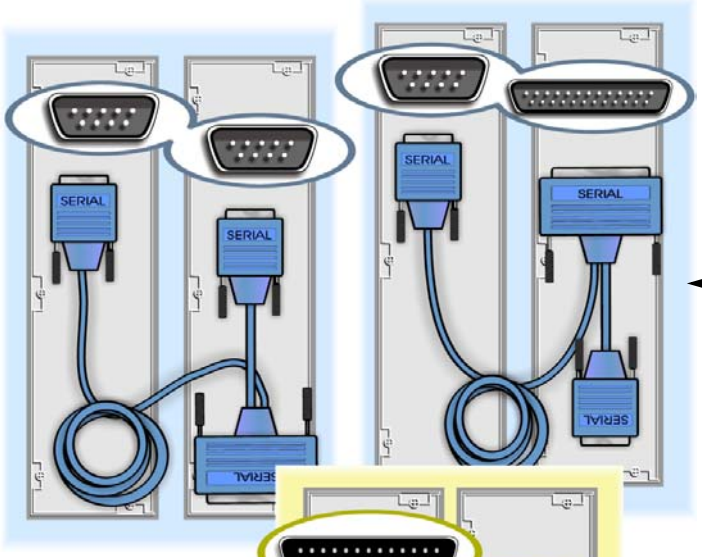
LapLink Gold passwords are case-sensitive (*i* and *I*, for example, are treated differently). In Address Book entries for connections to other computers running LapLink Gold, type passwords exactly as they were typed on those computers, using capital letters and lowercase letters as necessary.

NOTE Passwords in LapLink Pro, LapLink Tech, or LapLink 7.5 or earlier are not case-sensitive. For connections to computers running any of these earlier versions, type passwords in ALL CAPITAL LETTERS. If you have old Address Book entries for such connections, retype their passwords in all capital letters.

NOTE Because of the change in case sensitivity, Address Book entries created in an earlier LapLink version may no longer let you connect to computers that have also upgraded. Have new passwords set up on those computers; then change your Address Book entries to match versions.

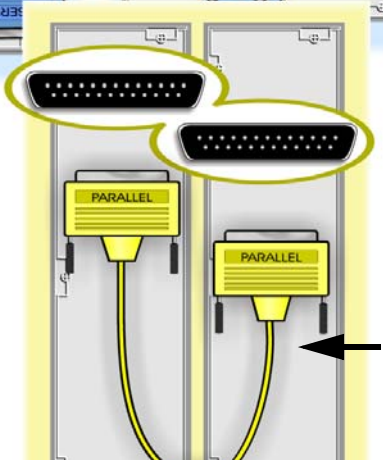
Connecting by cable

When you connect two computers by LapLink cable, attach the cable—serial, parallel, or USB—to both computers and start LapLink on both computers. Autoconnect, the default setting for cable connections, opens a connection automatically. To manually connect, click the Connect Over button on the LinkBar, and then click Cable.

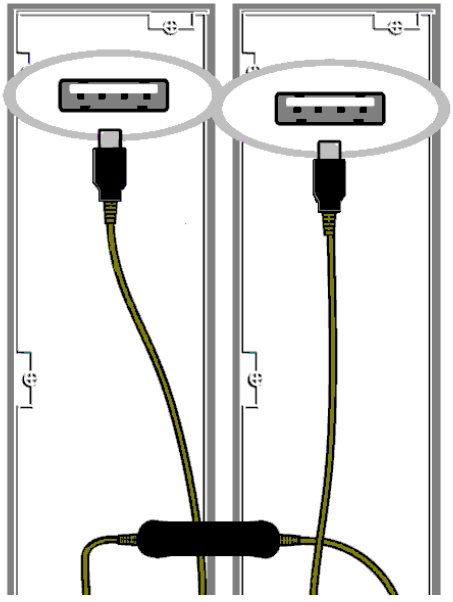


The blue LapLink serial cable has two connectors at one end, but only one connector is attached at a time: Use the larger connector if one of the computers has a 25-pin serial port. Otherwise, attach one of the smaller connectors to each computer.

Attach one end of the LapLink USB cable to a USB port—or USB hub—on each computer.



Attach one end of the yellow LapLink parallel cable to a parallel port on each computer.



Choose the type of cable—serial, parallel, or USB (Universal Serial Bus)[1] Network—you are going to use based on the cables and ports you have available.

Ports are the connectors to which you attach cables and peripherals like printers and external modems. To find out which types of ports are available, consult the documentation or the Windows Device Manager for your computer.

Once you decide which kind of cable connection you'll use, plug a LapLink cable into both computers: attach a LapLink serial cable to a serial port on each computer, a LapLink parallel cable to a parallel port on each computer, or a LapLink USB cable to a USB port or a USB "hub" device on each computer.

Before you connect by cable

- Attach an end of a LapLink cable to each computer.
- Ensure that the proper port—serial, parallel, or USB—is enabled in LapLink on both computers. See page 139.
- Run LapLink on both computers.

Cables to use for LapLink connections

For a serial, parallel or USB connection use a LapLink cable, available from LapLink.

If there is more than one type of port available to you, remember that parallel cables transfer data faster than serial cables. And USB cables, the fastest of the three, transfer up to many times faster than serial cables.

In addition, you can attach a USB cable to any USB peripheral that incorporates a "hub" to which other devices can be connected. This feature lets you use more than one USB-compatible device at a time.

Connecting to another computer by serial, parallel, or USB cable

When you start LapLink on two computers connected by cable, they will automatically connect. Autoconnect, the default setting for cable connections, causes the computers to connect automatically. If you change this setting, you can connect to the other computer manually.

TIP If the connection does not open automatically, click Port Setup on the Options menu and verify that the appropriate port (COM, LPT, or USB) is enabled for cable.

To manually connect to another computer by serial, parallel, or USB cable:

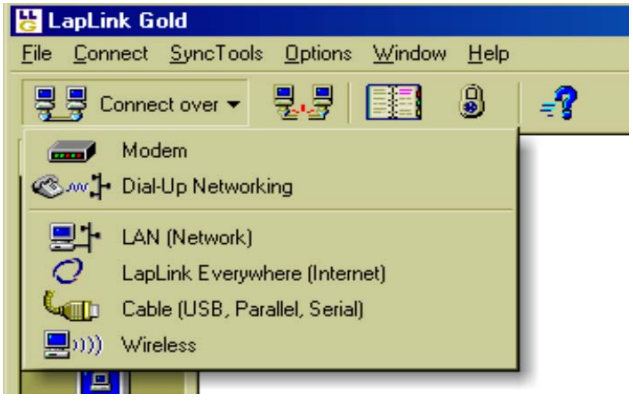
1. Click the Connect Over button on the LinkBar, and then click Cable.
2. In the Connection list, click the name of the computer you want to connect to.
3. Under Services, check the services you want to use, such as File Transfer and Remote Control.
4. Click OK.

TIP To turn Autoconnect off, click Connect Options on the Options menu. On the Connect tab, clear the Enable Autoconnect box.

1 Not all connection types are supported in all Windows operating systems. See the table on page 15 for more information.

Connecting by wireless

To connect to another computer using wireless devices, simply start LapLink, and the connection opens automatically. Autoconnect, the default setting for wireless connections, lets computers connect automatically when you run LapLink. To connect manually, click the Connect Over button on the LinkBar, and then click Wireless.



Connect over Wireless works automatically, connecting two computers when their infrared or other wireless devices are within range of each other.

Using LapLink, you can open short-range connections between computers equipped with infrared and other wireless devices.[1]

You can also connect using other wireless devices: With a cellular modem, use Connect over Modem. With a wireless LAN adapter, use Connect over LAN (Network).

Before you connect by wireless

- Prepare your infrared or other wireless devices to communicate with each other.
- Ensure that the wireless port on each computer is enabled in LapLink. See page 141.
- Run LapLink on both computers.

Connecting to another computer by wireless

When you start LapLink on both computers, a connection opens automatically over their wireless devices. Autoconnect, the default setting for wireless connections, forces the computers to connect to each other. If you change this setting, you can connect to the other computer manually.

TIP If the connection does not open automatically, click Port Setup on the Options menu and verify that the appropriate COM port is enabled for wireless communications.

To manually connect to another computer by wireless:

1 Click the Connect Over button on the LinkBar and then click Wireless.

1 Wireless connections are not available in Windows NT or Windows 2000.

2 In the Connection list, click the name of the computer you want to connect to.

3 Under Services, check the services you want to use, such as File Transfer and Remote Control.

4 Click OK.

TIP To turn Autoconnect off, click Connect Options on the Options menu. On the Connect tab, clear the Enable Autoconnect box.

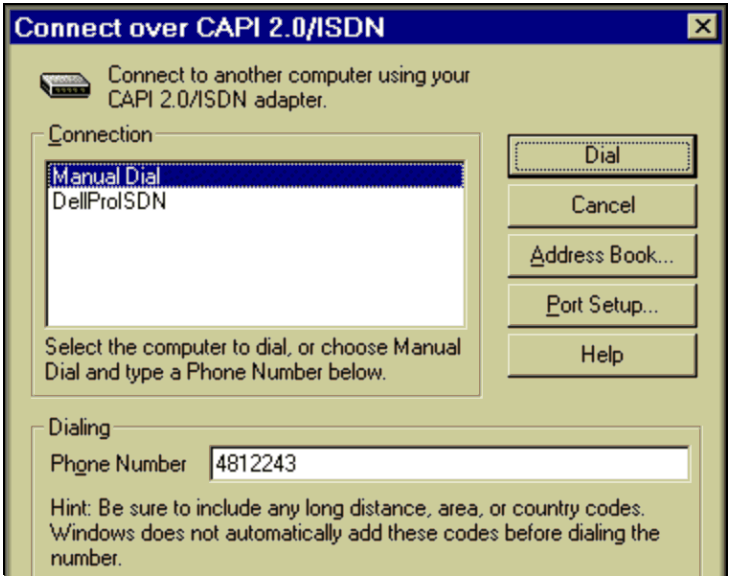
Using infrared devices

The infrared devices you use in LapLink must first be set up in Windows 95 or Windows 98. The Windows infrared driver supports a variety of built-in devices, including fast infrared devices, as well as adapters connected to serial ports. If the driver is not installed on your computer, you can download it from the Microsoft site on the Internet.

TIP When you install the infrared driver, specify any COM port from COM1 to COM9 as the redirected port. In LapLink, click Port Setup (Options menu) and enable the same redirected port for wireless communications.

Connecting over CAPI 2.0/ISDN

If CAPI 2.0/ISDN lines are available to your computer and the computer you are connecting to—and both computers are set up for CAPI 2.0/ISDN communications—you can open a high-speed connection and use Remote Control, File Transfer, and other LapLink services. To connect, click the Connect Over button on the LinkBar, and then click CAPI 2.0/ISDN.



Use Connect over CAPI 2.0/ISDN to link computers wherever the CAPI 2.0 version of ISDN is available.

Entries you have created for CAPI 2.0/ISDN connections in Address Book appear in the connection list to make connecting easier.

CAPI 2.0/ISDN is an implementation of ISDN, an international communications standard for sending voice, video, and data over digital telephone lines, at faster rates than those possible using modems.

NOTE LapLink does not offer CAPI 2.0/ISDN as a means of connecting unless CAPI 2.0/ISDN is installed on your computer.

CAPI 2.0/ISDN is widely used in Europe, particularly in Germany. In North America ISDN seldom is implemented as CAPI 2.0, but you can still use your ISDN device for high-speed LapLink connections. If you use your ISDN device as a modem, use Connect over Modem in LapLink. If you use it to dial in to, and log on to, a network, use Connect over LAN (Network) in LapLink.

Before using Connect over CAPI 2.0/ISDN

- A CAPI 2.0/ISDN adapter and driver must be installed on both computers.
- Both computers must be running a version of LapLink that supports CAPI 2.0/ISDN.
- The security setup of the remote computer (the one you are connecting to) must be configured to allow incoming connections. See page 46.
- CAPI 2.0/ISDN ports must be enabled in LapLink on both computers.
- LapLink must be running on both computers.

Connecting to a computer over CAPI 2.0/ISDN

To connect to a computer over CAPI 2.0/ISDN:

1 Click the Connect Over button on the LinkBar, and then click CAPI 2.0/ISDN.

2 Click the name of the computer you want to connect to in the Connection list or type a phone number under Dialing.

The connections listed under Manual Dial are your Address Book entries for CAPI connections. To create a new entry, click Address Book.

3 Under Services, check the services you want, such as File Transfer and Remote Control. You can choose any combination of these services.

4 Click the Dial button.

Dialing from an Address Book entry

Before dialing a computer, it's a good idea to create an entry for that connection in Address Book. Though you do not dial directly from Address Book, you can choose among its entries when you connect to a remote computer.

To create an entry in Address Book for a CAPI 2.0/ISDN connection:

1 Click the Address Book button on the LinkBar and click the Add button.

2 In the Description box, type a brief description of the remote computer as a reference.

3 In the Computer Name box, type the exact name assigned to the remote computer in LapLink.

4 In the Connection Type list, click CAPI 2.0/ISDN.

5 Under Phone Number, type the phone number.

6 Under Services, check the services you want to use when you connect to the remote computer (such as File Transfer and Remote Control).

TIP Requests for services in Address Book will be honored only if the security setup of the remote computer permits.

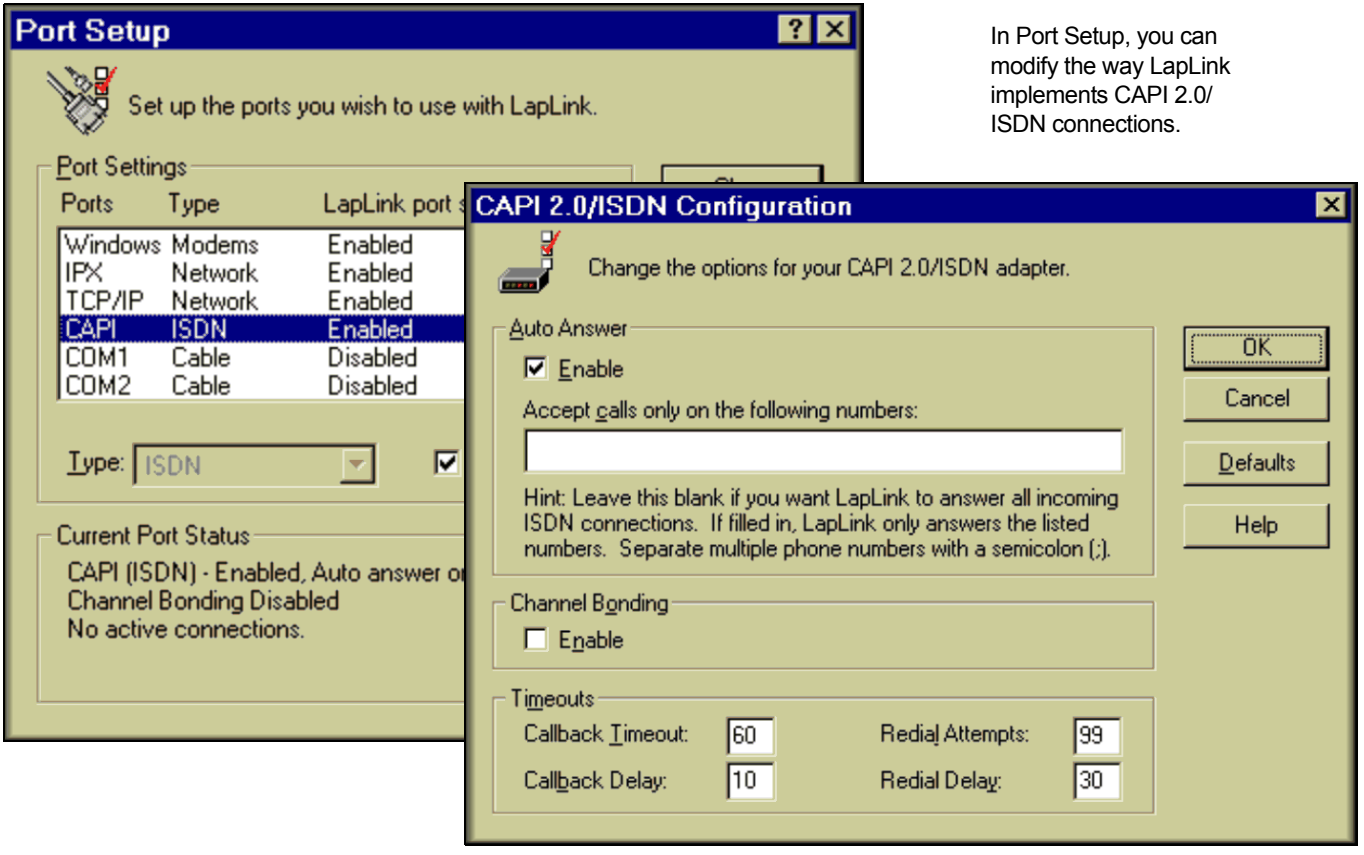
7 Under Security Information to Send, type the log-in name and the password you must provide in order to gain access to the remote computer. Reenter the password to confirm.

For connections to other computers running LapLink Gold, type passwords exactly as they were typed on the other computers; that is, use capital letters and lowercase letters as necessary.

TIP For passwords to computers running earlier versions of LapLink, type passwords in ALL CAPITAL LETTERS. If you have old Address Book entries for such connections, retype their passwords in all capital letters.

Changing CAPI 2.0/ISDN performance in LapLink

Before using CAPI 2.0/ISDN in LapLink, you may want to customize the way that LapLink responds to CAPI 2.0/ISDN calls and uses the two channels available for LapLink communications. For example, you can specify that LapLink not respond to any incoming calls to a particular channel, or you can double the rate at which data is transmitted over your CAPI 2.0/ISDN connections.



In Port Setup, you can modify the way LapLink implements CAPI 2.0/ISDN connections.

To change CAPI 2.0/ISDN performance in LapLink:

1 On the Options menu, click Port Setup.

2 Under Port Settings, click CAPI.

3 Click the Configure button.

4 If you do not want LapLink to answer any incoming CAPI 2.0/ISDN calls, clear the Enable box under Auto Answer.

To answer calls to only one number, type the number in this box: Accept Calls Only on the Following Numbers.

5 If you want to combine the two CAPI 2.0/ISDN channels for faster connections, check the Enable box under Channel Bonding.

Be sure that channel bonding is also enabled on the computer you will connect to.

6 Customize the Timeout options as necessary.

The Callback Timeout, Callback Delay, and Redial Delay settings are specified in seconds.

7 Click OK.

Answering calls

At the outset, LapLink is set up to answer all incoming CAPI 2.0/ISDN calls on both channels. You can modify this so that it does not answer any of these calls or it answers calls to just one of the channels.

TIP If you don't want LapLink to answer any incoming calls, clear the Enable box under Auto Answer; then make sure that the Accept Calls Only on the Following Numbers box is blank.

TIP When typing the number to accept calls to, use only numerals; avoid characters like dashes, parentheses, slants, and periods. When typing more than one number, use a semicolon to separate them.

Channel bonding

CAPI 2.0/ISDN provides two channels that can be used for LapLink communications. Each channel has a transmission speed of 64 Kbps. By combining ("bonding") these channels, the transmission rate can double to 128 Kbps.

At the outset, LapLink does not use channel bonding, even when both channels are available. This setting keeps transmission costs to a minimum for users who pay additional fees for each channel connection.

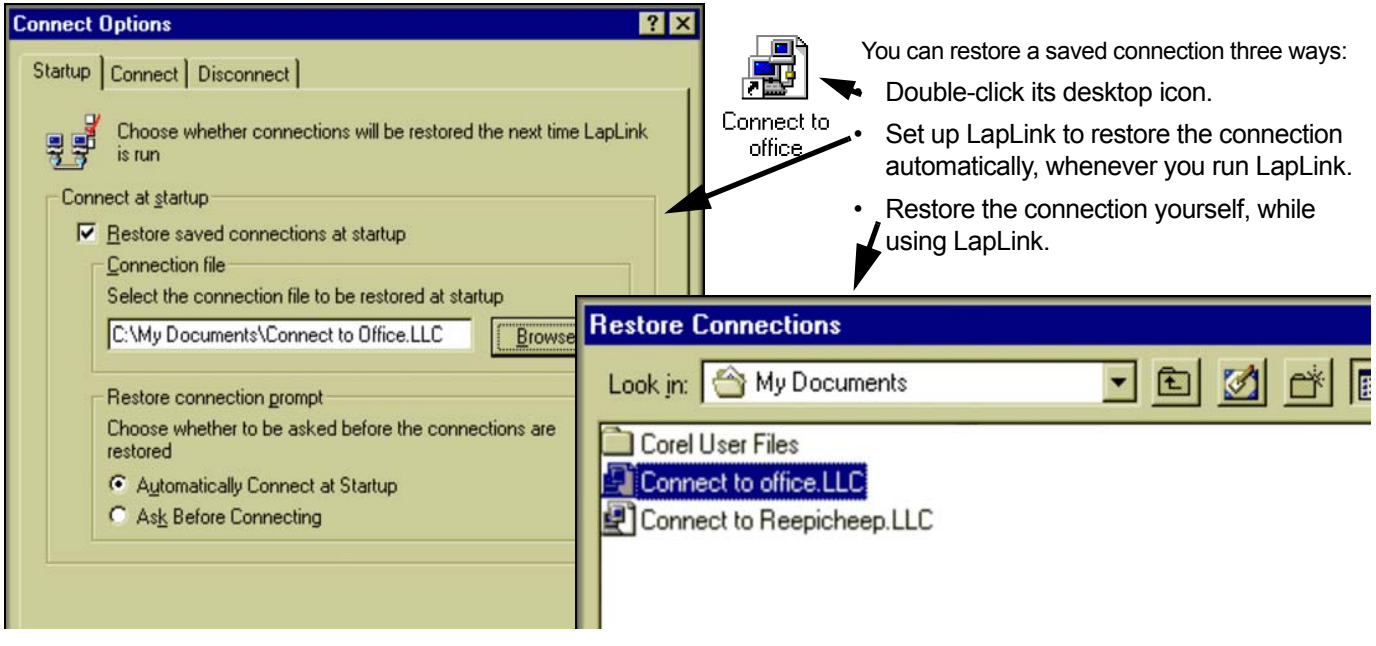
For faster transmissions, enable channel bonding. When both channels are available, LapLink can then transmit at speeds up to 128 Kbps.

TIP Be sure to enable channel bonding on both computers. LapLink may not be able to make a connection between them otherwise.

TIP When one channel is already in use, LapLink uses the available channel to transmit at 64 Kbps, even when channel bonding is enabled.

Connecting automatically

Once you have established a connection, you can save it for easy restoration later. You can restore a saved connection by double-clicking a shortcut icon, setting up LapLink to restore the connection automatically when you start LapLink, or restoring the connection while running LapLink. When LapLink restores a connection, it connects to the same computer or computers and opens the same services.



Instead of spending time connecting to the same computer and opening the same services time after time, you can save the connection and use the saved connection as a convenient way to reconnect later.

NOTE To connect to several computers at once, open connections to those computers before saving connections.

When you save a connection, you record such details as the number and types of connections (modem, network, Internet, cable), the names of computers, and the kinds of services in use. Each connection is saved as a file. Opening the file reopens the connections and services and arranges windows to appear much as they did before.

Saving a connection

To save a connection:

1 Open one or more connections as usual.

2 On the Connect menu, click Save Connections.

3 In the File Name box, type a name to identify the connection file.

4 Click Save.

5 When asked whether you want a shortcut icon for this connection on your Windows desktop, click Yes or No.

Restoring a saved connection

Once you have saved a connection, you can restore it three ways:

- If you created a shortcut icon on your Windows desktop, double-click the icon.
- Set up LapLink to restore the connection when you run LapLink again.
- Open the connection file while running LapLink.

NOTE To completely automate the connection process, create entries in Address Book for saved connections. Include the log-in name and password required to open each connection.

To set up LapLink to restore a saved connection when you start the program:

1 On the Options menu, click Connect Options.

2 On the Startup tab, check this box: Restore Saved Connections at Startup.

3 Click the name of the connection file you want to open, or type it in the Connection File box.

If the file does not appear in the list of files, click the Browse button and locate the drive and folder containing the file.

TIP Connection files have the .LLC extension. In Windows 95 and Windows 98, they are stored in the My Documents folder. In Windows NT, they are stored in the \Profiles*yourname*\Personal folder within the Windows folder (where *yourname* is your Windows NT logon name).

4 If you want the connection restored without confirmation, click Automatically Connect at Startup. Otherwise, click Ask Before Connecting.

5 Click OK.

To open a saved connection while running LapLink:

1 On the Connect menu, click Restore Connections.

2 Click the name of the connection file you want to open, or type it in the File Name box.

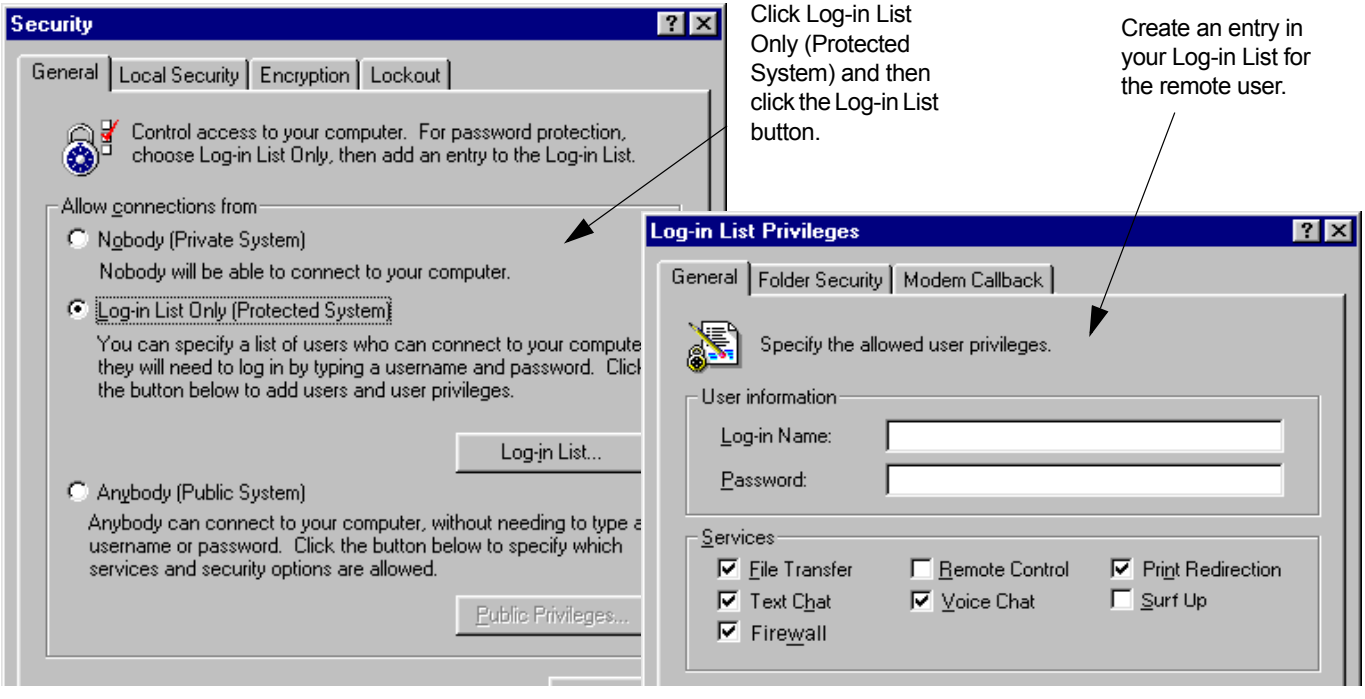
If the file does not appear in the list of files, locate the appropriate drive in the Look In box; then double-click the folder containing the file.

3 Click Open.

3 Setting up security for incoming connections

Allowing incoming connections

After you install LapLink, you can make outgoing connections to other computers, but other computers cannot open incoming connections to yours except by cable or wireless. To allow incoming connections, change the security setup to Protected System and create one or more entries in the Log-in List. In each entry, specify the password and the log-in name the user must provide to open an incoming connection, and grant the user permission to use services and other features.



Click Log-in List Only (Protected System) and then click the Log-in List button.

Create an entry in your Log-in List for the remote user.

The safest way to allow incoming connections is to set up password-protection by creating entries in the Log-in List. If you will be the only person to connect to this computer, make a single Log-in List entry and grant yourself whatever privileges you want. For other users, create separate entries for each user or group of users according to privileges granted.

To set up password-protected access to your computer:

1 Click the Security button on the LinkBar.

2 On the General tab, click Log-in List Only (Protected System).

3 Click the Log-in List button, and then click the Add button.

4 On the General tab, type the log-in name and the password the user must provide to make a connection to your computer.

Reenter the password and click OK to confirm.

5 Under Services, check File Transfer, Remote Control, or any of the other services you want to make available to the user.

6 Under Locking Permissions, check options to determine whether the user can blank the screen of your computer and disable its mouse and keyboard.

TIP You can grant locking permissions only if you select Remote Control as an available service.

7 To deny access to particular drives and folders, click the Folder Security tab. For more information see page 48.

8 To specify whether or how a user opening a connection by modem is to be called back, click the Modem Callback tab. For more information, see page 52.

Specifying passwords

LapLink Gold passwords are case-sensitive (*i* and *I*, for example, are treated differently). For incoming connections from computers running LapLink Gold, you can specify more secure passwords by mixing capital letters and lowercase letters. The introduction of case sensitivity has these important consequences:

CAUTION For incoming connections from computers running versions earlier than LapLink 2000,[1] type passwords using ALL CAPITALS. If your Log-in List has passwords for such connections, retype them as all capitals, or assign new passwords.

CAUTION If your Log-in List contains passwords assigned in an earlier LapLink version, other computers that have also upgraded may not be able to connect to your computer until you assign new passwords.

Setting up a public system

If security is not an concern, you can open your computer to *any* LapLink users. Though you do not require that they type a password, you can limit the services, drives, and folders they can access.

To allow access to your computer *without password protection:*

1 Click the Security button on the LinkBar.

2 On the General tab, click Anybody (Public System). Then click the Public Privileges button.

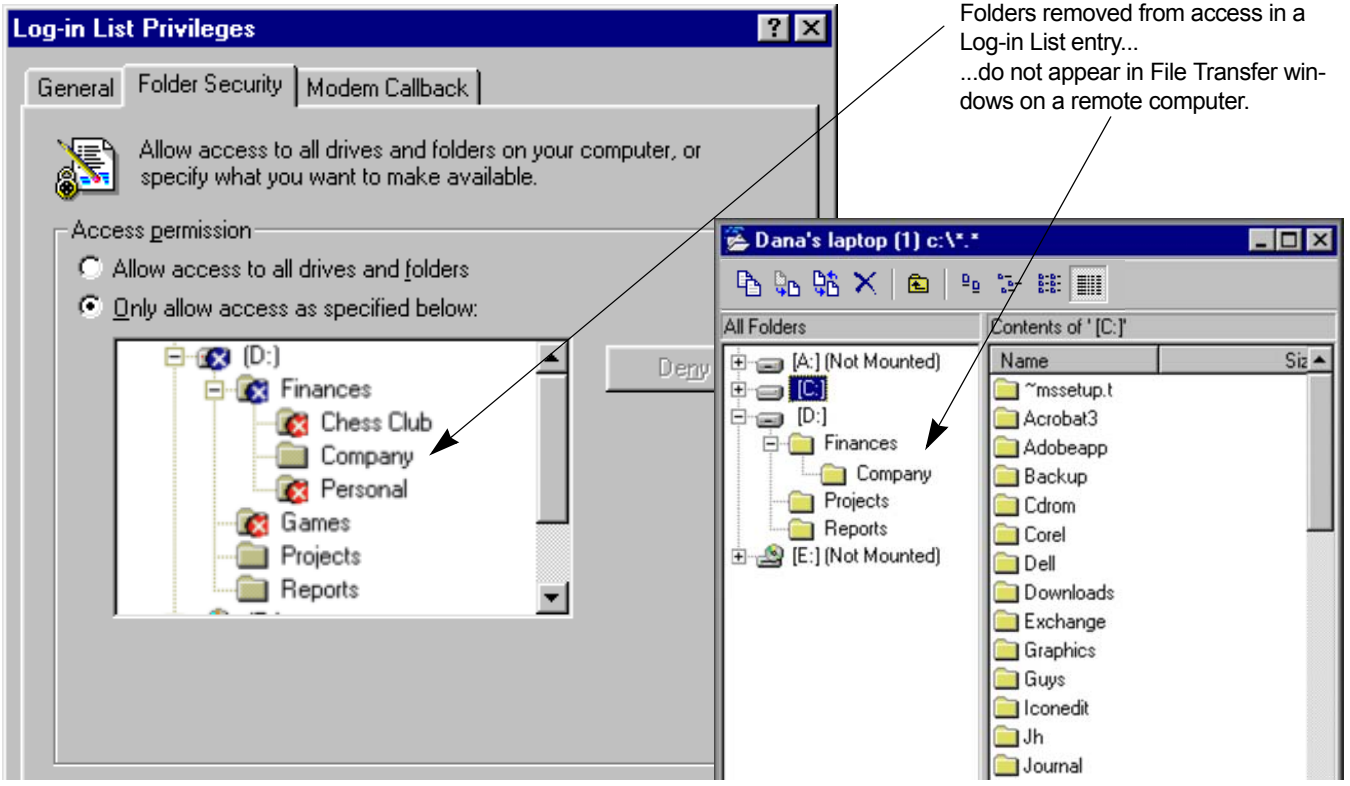
3 On the General tab, check the services and locking privileges you want to grant.

4 On the Folder Security tab, deny access to drives and folders as you wish. For more information see page 48.

1 Versions before LapLink 2000 include LapLink Pro, LapLink Tech, and LapLink 7.5 or earlier.

Denying access to certain drives and folders

When you open your computer to incoming connections, you specify whether all drives and folders—or only certain ones—are accessible to users who connect to your computer for File Transfer. You can deny access to an entire drive or to any parts of one, and you can grant different privileges to different users.



Opening your computer to incoming connections does not mean that files on all your drives and folders must be accessible to other users. You can “hide” certain drives and folders so that other users will not see them in their File Transfer windows and cannot copy files to or from them.

CAUTION Denying access to a drive or folder makes it invisible to anyone who connects for File Transfer but has no effect in Remote Control. Anyone who connects for Remote Control can still access all of your files.

You can set up drive and folder security when you secure your computer using the Log-in List. Specify a different setup for each entry in the list if you like.

Until you specify otherwise, every user in your Log-in List has access to all of your drives and folders.

To limit access to certain drives and folders:

1 Click the Security button on the LinkBar.

2 Ensure that Log-in List (Protected System) is selected, and click the Log-in List button.

3 Click the Add button to create an entry in the Log-in List.

TIP If you want to change an existing entry, highlight it in the list of current users and click the Edit button.

4 Click the Folder Security tab and then click Only Allow Access as Specified Below.

Access is now denied to all drives and folders.

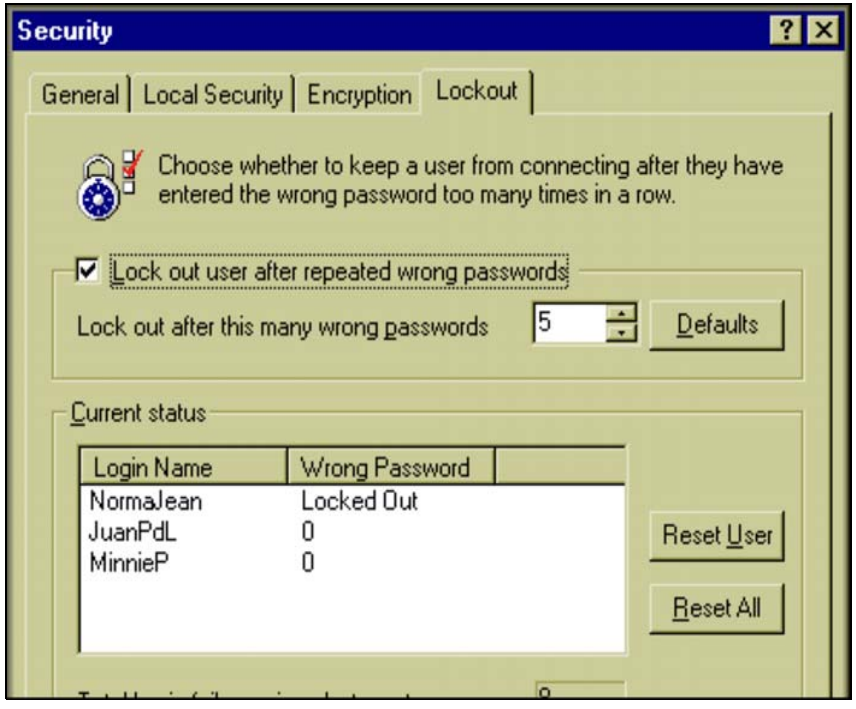
TIP You can navigate through the drives and folders on the Folder Security tab much as you do in a File Transfer window. For fastest navigation, double-click a drive or folder or click the plus sign beside it.

5 In the list of drives and folders, highlight each one you want to make accessible and click the Allow button.

TIP You can also specify drive and folder security for a computer designated as a public system (no password required). Click the Security button on the LinkBar and click the Public Privileges button. Then click the Folder Security tab.

Locking out password crackers

When you open your computer to incoming connections, it's a good idea to include Lockout protection so that anyone who supplies an incorrect password more than a particular number of times is denied access to your computer. You enable Lockout and set the number of allowable tries as part of Security setup.



Use Lockout to protect against someone who attempts to guess your passwords.

As set up here, Lockout will take effect after five failed attempts for any log-in name.

Someone supplying the log-in name NormaJean has been locked out and won't be able to connect even if he or she supplies the correct password.

Like combination safes, security passwords can be cracked. Password crackers use a variety of techniques; some techniques are more sophisticated than others, but almost all require guessing.

To guard against unauthorized access, use Lockout to bar anyone who makes repeated attempts at guessing a password for entry to your computer.

Suppose you are setting up your office computer for access from home. In the Log-in List of LapLink security, you assign yourself both a log-in name and a password.

Though you are careful to specify as secure a password as possible, you still want to have Lockout as additional protection. So you instruct LapLink to refuse entry after a certain number of incorrect passwords.

To lock out anyone who repeatedly tries to connect using incorrect passwords:

1 Click the Security button on the LinkBar.

2 On the Lockout tab, check this box: Lock Out User after Repeated Wrong Passwords.

3 In the Lock Out After This Many Wrong Passwords box, click the number you want to allow before Lockout takes effect.

TIP The lower the number, the less the security risk.

4 Click OK.

Monitoring failed log-in attempts

Lockout is designed to monitor and control access according to the log-in names in your Log-in List. A separate count of failed attempts is kept for each log-in name; when a count reaches your maximum (step 3 above), users can no longer connect using that log-in name.

Beside the log-in names listed on the Lockout tab appear numbers for the number of incorrect passwords. When a count reaches the maximum, the log-in name is labeled *Locked Out*.

You can reset to zero the count for any or all of the log-in names. This action also makes a locked out name usable once again.

TIP Unless a log-in name has been labeled *Locked Out,* its count is reset to zero automatically whenever a user connects using that log-in name and the correct password.

To reset to zero the count for a single log-in name:

- Click the log-in name and click the Reset User button.

To reset to zero the count for all log-in names:

- Click the Reset All button.

Tips for more secure passwords

- Use at least six characters.
- Include letters (both lowercase[1] and capitals), numbers, punctuation, and symbols.
- Avoid any words found in dictionaries. (Some password-cracking programs rely on dictionaries to guess passwords.)
- Don't make your passwords so complex or long that you can't remember them.
- Change your passwords every 45 days.

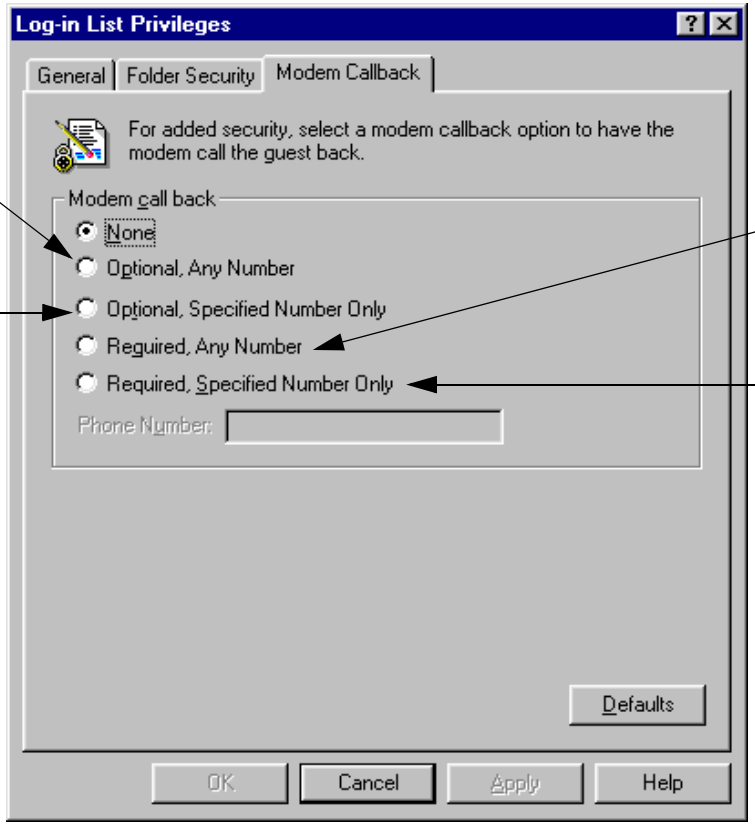
1 Passwords for incoming connections from versions earlier than LapLink 2000 are the exception. They must be all capital letters.

Allowing or requiring callbacks

When you allow incoming modem connections, you can require that the remote computer be called back before a connection is opened. Or you can let the remote computer determine whether to be called back. In both cases you can supply the phone number ahead of time or leave the number to the other computer. You set callback options in the Log-in List.

Hello. I'll call you back if you give me your current phone number.
Otherwise, I'll connect you without reversing the call.

Hello. Do you want me to call you back at 555-1111?
Otherwise, I'll connect you without reversing the call.



Hello. I'll call you back if you give me your current phone number.
Otherwise, I'll have to disconnect.

Hello. Do you want me to call you back at 555-2222?
Otherwise, I'll have to disconnect.

A callback occurs when a remote computer attempts to connect to your computer by modem; instead of completing the connection, LapLink reverses the call by hanging up and then dialing the remote computer. The connection to your computer is completed when the remote computer answers.

. . . Allowing or requiring callbacks

You can use callbacks as a security measure: require a callback to a phone number you specify. Or you can use callbacks to save money, as when you are connecting to your office from a hotel room.

You can set callback options when you secure your computer using the Log-in List. Specify a different option for each entry in the list if you like.

To set callback options:

1 Click the Security button on the LinkBar.

2 Ensure that Log-in List (Protected System) is selected and click the Log-in List button.

3 Click the Add button to create an entry in the Log-in List.

TIP If you want to change an existing entry, highlight it in the list of current users and click the Edit button.

4 Click the Modem Callback tab.

5 Click one of these options:

- **None** Prevents callbacks.
- **Optional, Any Number** Lets the remote user decide whether to be called back; users who choose to be called back can specify the number to dial. This is the most flexible of all the options.
- **Optional, Specified Number Only** Lets the remote user decide whether to be called back to the number you specify or to open the connection without any callback. Only the number you specify in the Phone Number box can be dialed for the callback.
- **Required, Any Number** Requires remote users to be called back but allows them to specify the number to be dialed. The number can vary from session to session.
- **Required, Specified Number Only** Requires the remote user to be called back to the number you specify in the Phone Number box.

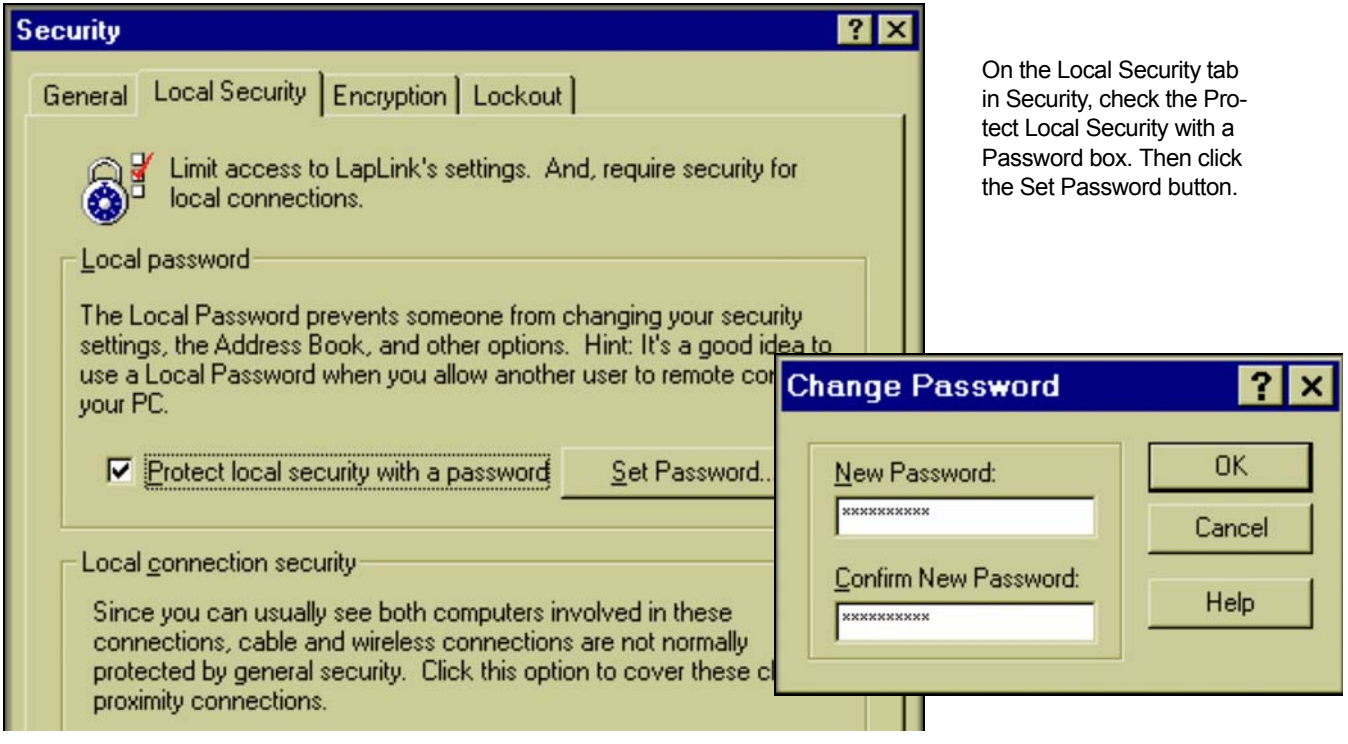
6 If you clicked either of the options for which you must specify a phone number, type that number in the Phone Number box.

Type the entire number, including any prefixes or suffixes necessary to dial the remote computer from this one. (Your Dialing Properties settings do not apply here.)

TIP Do not require callbacks from computers that connect by running Xchange Agents. The agents will not finish because they cannot perform callbacks.

Protecting your security settings with a password

Creating password protection for your LapLink security settings prevents unauthorized users from compromising your security system; it also keeps them from viewing your Address Book entries and using them to open connections to other computers. Protecting your security settings is a particularly good idea if you allow others to control your computer remotely.



On the Local Security tab in Security, check the Protect Local Security with a Password box. Then click the Set Password button.

Setting up password protection for your LapLink security settings ensures that the protections you set up for your computer cannot be compromised—either by someone using your computer in your absence or by remote users.

Without knowledge of your password, users cannot view or change any of this information:

- Log-in names, passwords, and other security settings
- Phone numbers, passwords, and other information stored in your Address Book entries
- Privileges you have granted to guest computers and other settings in Remote Control Options

In addition, the same password is required for access to Connect over Modem and certain Logging features.

To protect your LapLink security settings:

1 Click the Security button on the LinkBar.

2 On the Local Security tab, check this box: Protect Local Security with a Password.

3 In the Change Password dialog box, type the password in the New Password box. In the Confirm New Password box, type it again.

TIP Passwords are case-sensitive: capital letters and lowercase letters are treated differently. For more secure passwords, mix the two cases.

4 Click OK.

TIP To remove password protection, clear this box: Protect Local Security with a Password. To change the password currently in effect, click the Set Password button.

TIP By default, security is not imposed on incoming connections over a cable or by wireless. If you set up password protection for modem and network connections, however, you can extend that protection to cable and wireless connections as well. On the Local Security tab, check this box: Enforce Security for Local Connections.

Did you upgrade?

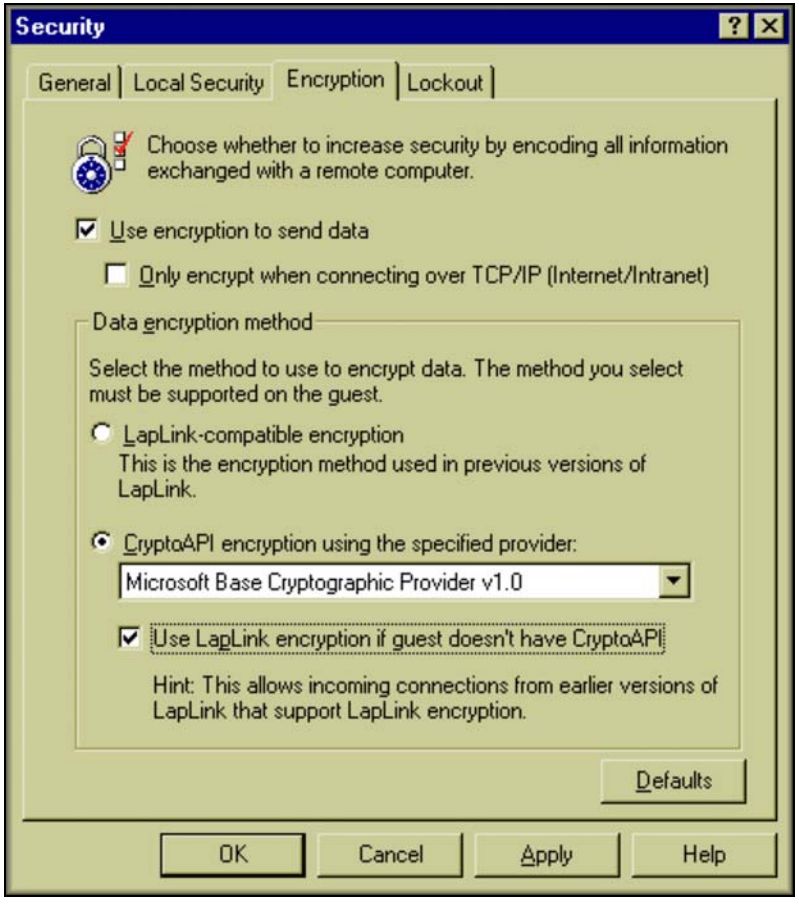
In versions earlier than LapLink 2000,[1] passwords were not case-sensitive. If you specified *azefgin* as your password, for example, you could gain access to your security system by typing *Azefgin*, *AZEFGIN*, or any number of other combinations.

Beginning with LapLink 2000 and the introduction of case sensitivity, however, there is only one way to type a password: just as it was typed in the first place. If you inherited a password from an earlier version of LapLink, try different combinations of capital letters and lowercase letters: initial capital letter, all capital letters, and so on.

1 Versions before LapLink 2000 include LapLink Pro, LapLink Tech, and LapLink 7.5 or earlier.

Encrypting information over incoming connections

Encryption is a good idea over Internet connections and other connections where your information can be intercepted and compromised. You can choose between two encryption methods: the one available on earlier versions of LapLink and more secure methods installed on your computer. The settings you make on a computer determine encryption for incoming connections.



By default, LapLink encrypts log-in names and passwords, but nothing else. This setting is usually fine for transmitting data over office networks or other secure connections.

On the Internet, intranets, or wide area networks, however, it is usually a good idea to encrypt your data, including files, text from chat sessions, and instructions sent to the remote computer during Remote Control.

While opening your computer to incoming connections, you determine whether and how data transmitted over those connections will be encrypted. (The settings on the other computers are irrelevant.) When you connect to another computer, however, it is the settings on that computer that determine encryption.[1]

To encrypt data over incoming connections:

1 Click the Security button on the LinkBar.

2 On the Encryption tab, check this box: Use Encryption to Send Data.

3 If you want to limit encryption to connections over a TCP/IP network or to dial-up connections to a TCP/IP network, including the Internet, check this box: Only Encrypt When Connecting over TCP/IP (Internet/Intranet).

4 Click a method of encryption:

- **LapLink-compatible Encryption** Provides compatibility with versions earlier than LapLink 2000.
- **CryptoAPI Encryption Using the Specified Provider**[2] Sets a higher degree of security, using an algorithm installed on your computer. Cannot be used in connections with versions earlier than LapLink 2000.

5 If you clicked the CryptoAPI Encryption option, click a CryptoAPI provider in the box below the option.

Be sure to specify a provider that is installed on the remote computer too. That computer cannot connect to your computer otherwise.

6 If you clicked the CryptoAPI Encryption option—but still want to accept calls from earlier versions of LapLink (which lack CryptoAPI)—check this box: Use LapLink Encryption If Guest Doesn't have CryptoAPI.

CAUTION This option opens your computer to a lower level of security than you specified in the previous step.

TIP Be sure to enable encryption *before* a connection is opened. Changing the setting during a connection won't have any effect until the next connection.

1 The only exception occurs when you use LapLink 2000 to connect to a computer running a version older than LapLink 2000. In this case only, the settings on your LapLink 2000 computer determine encryption.

2 CryptoAPI encryption is available only if your computer is equipped with software written to the Microsoft CryptoAPI.

4 Using Remote Control

Using Remote Control—Overview

When you open a Remote Control window on your computer, the computer in front of you becomes the guest, and the remote computer displayed on your screen becomes the host. From the guest, you can view and operate the host as if you were sitting in front of it. Images from the host appear on your screen in a Remote Control window within the LapLink workplace.

Remote Control provides a way to operate another computer at a distance. You begin Remote Control as soon as you open a Remote Control window. While you are working in this window, your mouse moves the mouse pointer on the remote computer, your keyboard types characters on the remote computer, and your Remote Control window shows the remote computer's screen.

Remote Control terminology

A LapLink Remote Control session creates two kinds of computers:

Guest The Remote Control window and the mouse and keyboard on the guest are your links to the remote computer. Working in the Remote Control window, you use your mouse and keyboard to operate the host. Your work, meanwhile, is being processed on the host computer.

Host There is no special procedure associated with setting up a host. The computer need only be running LapLink and configured to allow incoming connections. You do not need to be at the computer. On the other hand, you may want to join the guest as an observer or an active participant.

Opening a Remote Control window

On a guest, you can open a Remote Control window at the time you connect to the host. Or you can open one sometime after the connection is made. Because LapLink supports multiple connections, you can maintain several Remote Control windows, one for each host computer.

To open a Remote Control window while connecting:

- Click the Connect Over button on the LinkBar and then click Modem, Network, or some other means of connecting. Under Services, check the Remote Control box. (For more information about connecting to other computers, see chapter 2.)

To open a Remote Control window after opening a connection:

- Click the Open Remote Control button on the Shortcut bar. Or click Open Remote Control on the Window menu.
- If you have more than one connection, select a window for the desired connection *before* clicking the Open Remote Control button.

What you see

The host screen appears on your screen as a window within LapLink. The name of the host computer appears in the window's title bar. You can move, resize, minimize, or maximize the window as you would any other window. Use the scroll bars to view other parts of the host screen.

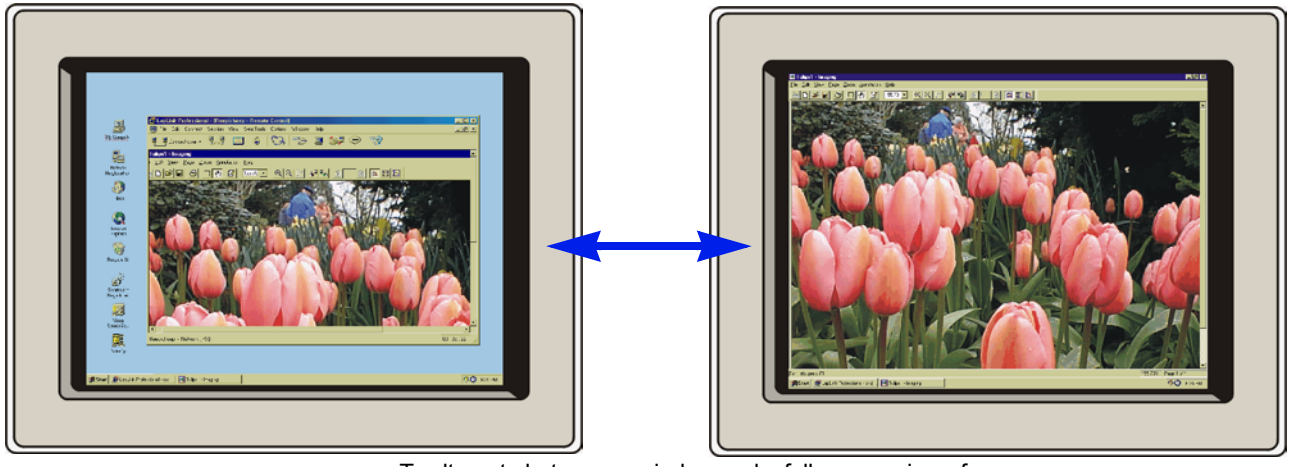
If you prefer to display the host screen across your entire screen instead of a window, press CTRL+SHIFT+F. Press CTRL+SHIFT+F again to return to the window view. For more information about changing your view of the host, see page 62.

TIP A host screen can be made to display full screen by default. To make this change, click Remote Control Options on the Options menu. On the Guest tab, check the Always Use Full-Screen box. The Remote Control window then alternates between full screen and icon; the window view is no longer available.

TIP There are several ways to customize Remote Control performance—whether you want to enhance your view of the host or speed up performance. For instance, you can use solid rather than dithered colors or prevent the display of large bitmaps. For more information see page 73.

Viewing the host

As a guest, you can alternate between two views of the host screen. Your first view appears in a window within LapLink. Inside the window, you control the host; outside the window, you perform other tasks, in LapLink or in other applications on your computer. Switch to a full-screen view when you want to maximize your view of the host and use Remote Control exclusively. When you cannot see the entire host screen even in full screen, you can change the resolution of the host screen or scale its image to fit within your view.



To alternate between a window and a full-screen view of the host, press CTRL+SHIFT+F.

Devoting your entire screen to a view of the host

You can view the host screen in two ways:

- In a window within LapLink (the default)
- As a full-screen display, hiding LapLink and the rest of your Windows workspace

In a window view, you have quick access to File Transfer, Text Chat, and other LapLink features. You can also switch to other applications on your computer.

To maximize the area in which you view and control the host, switch to a full-screen view. Your entire screen is now devoted to controlling the host; you do not have access to your own applications. When you want to do something other than control the host, switch back to the window view.

To switch between window and full-screen view:

- Press CTRL+SHIFT+F.

TIP In full screen, you can also switch to a window from the copy of LapLink running on the host: If LapLink is an icon, click it to restore it to a window. Then click the icon representing your Remote Control window, and click Guest Full Screen to clear the check mark.

TIP To make Remote Control alternate between full screen and icon, bypassing the window view, click Remote Control Options on the Options menu. On the Guest tab, check the Always Use Full-Screen box.

Viewing the entire host screen at once

There are two ways to fit the host screen into your view:

- From your computer, lower the resolution of a higher-resolution host screen to match that of your screen.
- Scale the image of the host screen to fit within your view.

Temporarily changing the resolution of the host screen When using a laptop to control a desktop, you often can't view the entire host screen at once if the desktop operates at a higher screen resolution. From your laptop, you can lower the desktop's screen resolution to match your laptop's.[1]

You can then view all of the host screen in full-screen view. The original resolution is restored automatically on disconnect or at your direction.

To lower the resolution of the host screen to match that of your screen:

1 On the Options menu, click Remote Control Options.

2 On the Guest tab, check this box: Match Host to Guest.

Clearing the box restores the host to its original resolution.

3 Click OK.

Scaling the image of the host screen to fit You can also view the entire host screen at once by scaling the image to fit within the LapLink window. You always see all of the host's screen, whether you are working in full screen or window, though the image may be distorted.

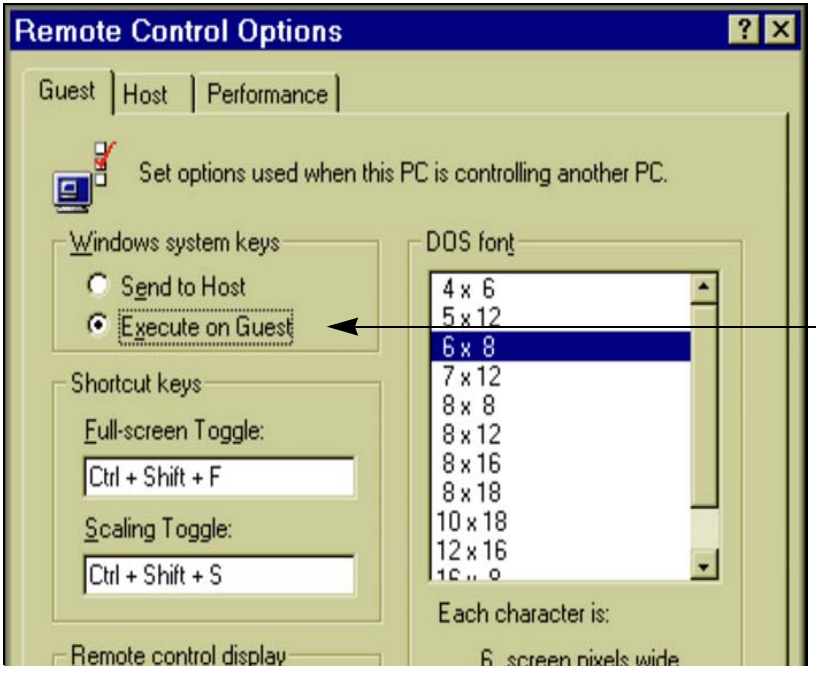
To scale the image of the host screen to fit within your view:

- Press CTRL+SHIFT+S.
- Pressing CTRL+SHIFT+S again restores the image to normal.

1 You cannot lower the resolution of a host computer unless its monitor and display adapter allow the change without restarting Windows. The host must also be running a version of LapLink that supports this feature.

Customizing keyboard control

By default, Windows system keys pressed on the guest computer take effect on the host. If you want the system keys to operate on the guest while working in a Remote Control window, click Remote Control Options on the Options menu. Then on the Guest tab, click Execute on Guest. Through Remote Control Options, you can also change the key combinations that control your view of the host.



When you are working in a Remote Control window, CTRL+TAB and other Windows system keys you press on your computer (the guest) take effect on the remote computer (the host).

To have system keys take effect on your computer instead of the remote computer, click Execute on Guest.

Windows system keys

Windows system keys are key combinations that perform a variety of tasks. Pressing ALT+TAB, for example, switches to the program you used last. By default, LapLink sends most system keys to the host during Remote Control: pressing ALT+TAB on the guest, therefore, switches to the program last used on the host.

You can make system keys work on your own computer (the guest) when you are working in a Remote Control window.

TIP Windows system keys (except CTRL+ALT+DELETE) always take effect on the host when you are using Remote Control in the full-screen view.

TIP If you intend to control a remote computer using the keyboard exclusively (without a mouse), set the Windows system keys to execute on your computer (the guest). When you want the keys to execute on the remote computer (the host), switch to the full-screen view.

To execute Windows system keys on the guest:

1 On the Options menu, click Remote Control Options, and then click the Guest tab.

2 Click Execute on Guest.

3 Click OK.

Remote Control shortcut keys

LapLink offers two shortcut keys to change your view of a host screen. Pressing CTRL+SHIFT+F switches between full-screen and window view of the host. Pressing CTRL+SHIFT+S switches between scaled-to-fit and normal view. (See page 62 for more information.)

You can change these default key combinations to certain other combinations. (To avoid interference with other LapLink and Windows shortcut keys, you are limited in your choice of replacements.)

To change the LapLink shortcut key combinations:

1 On the Options menu, click Remote Control Options.

2 On the Guest tab, click in one of these boxes:

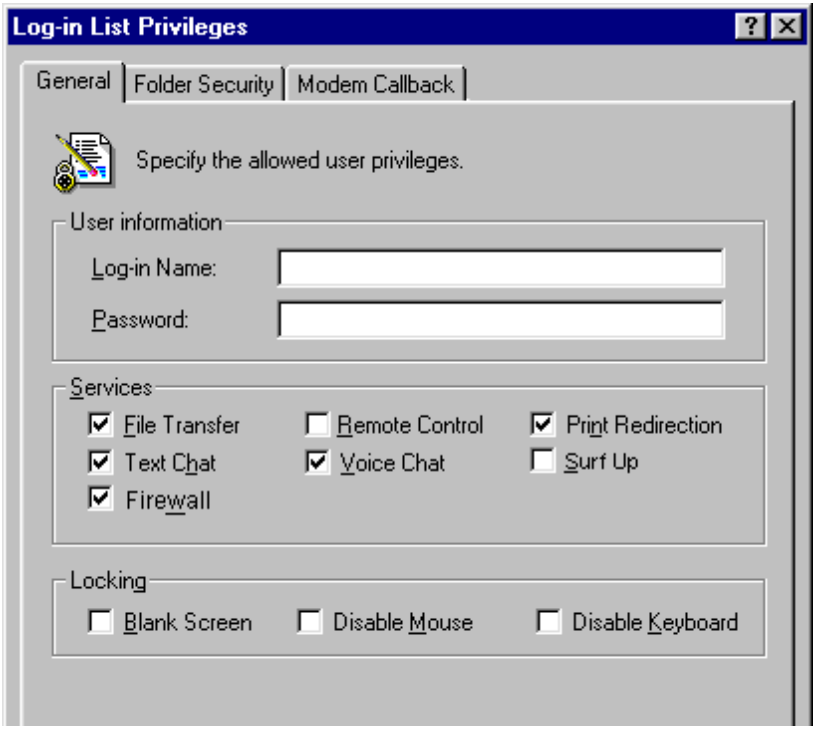
- **Full-screen Toggle** Changes the shortcut key that alternates between full-screen and window view.
- **Scaling Toggle** Changes the shortcut key that alternates between scaled-to-fit and normal view.

3 Press any of the following key combinations (where *n* is a number or a letter):

SHIFT+ALT+*n*
CTRL+SHIFT+*n*
CTRL+ALT+*n*
CTRL+SHIFT+ALT+*n*

Disabling the host keyboard and mouse and blanking its screen

From a guest computer, you can ensure privacy and prevent interruptions at the host by disabling its keyboard and mouse and blanking its screen. To perform any of these “locking” operations from the guest, click the appropriate command on the Session menu. On the host, you can allow locking by changing the default security setup.



On the host: Allow users to blank the screen and disable the keyboard and mouse when you grant them access through the Log-in List.

On the guest: Blank the host screen and disable its keyboard and mouse on the Session menu.

Locking the host from the guest

With the permission of the host computer, you can:

- **Blank the host screen** The host's screen is darkened, preventing your work from being viewed at the host.
- **Disable the host mouse** The host's mouse is locked, preventing anyone at the host from using the mouse to interrupt your work.
- **Disable the host keyboard** The host's keyboard is locked, preventing anyone at the host from using the keyboard to interrupt your work.

To lock the host during a Remote Control session:

- On the Session menu, click any of these commands to place a check mark beside the command: Blank Host Screen, Lock Host Mouse, or Lock Host Keyboard.
- To disable locking, click the command again to clear the check mark.

TIP If a command is dimmed, it is not available: either the host cannot perform the action, or the security setup of the host computer does not allow it.

TIP The Session menu is available only when you are connected to another computer.

TIP Through Address Book, you can request the kinds of locking you want to take effect as soon as you open a Remote Control session. Your requests will be honored as long as they are allowed by the host. For information on using Address Book to make connections, see chapter 2.

Configuring a host for locking

You can configure a host to determine who can lock it and how it will be locked. Guests cannot lock the host without your permission, and locking privileges you grant cannot be changed during a Remote Control session.

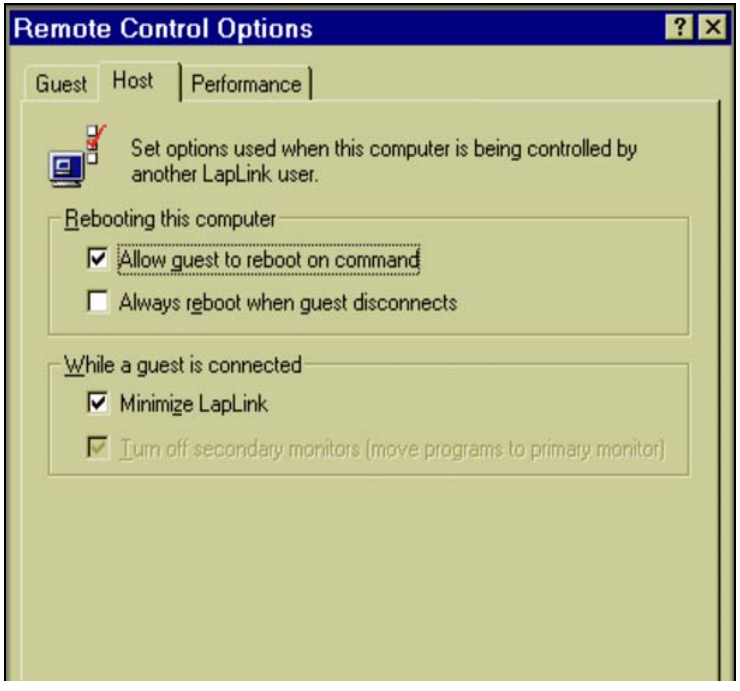
Whether you permit any kind of locking depends on how you intend to use LapLink. If you want to use Text Chat, for example, there should be no locking.

You grant locking permission by changing the security setup on the host computer: Click the Security button on the LinkBar. You then have a choice:

- Set up a Log-in List by specifying Log-in List (Protected System) and adding one or more entries. In each entry, check any of the three boxes under Locking Permissions. The permissions apply only to guests whom you provide with the appropriate log-in name and password. For more information about setting up a Log-in List, see page 46.
- If security is not an issue, open the system to any LapLink user by clicking Anybody (Public System). Click the Public Privileges button. On the General tab, check the Remote Control box, and then check any of the three boxes under Locking Permissions. The permissions apply to all guests.

Rebooting and logging on to the host

From a guest computer, you can reboot a host computer and restart Windows. To reboot a host from the guest during Remote Control, click the Reboot Host command on the Session menu. To configure a host for rebooting and restarting Windows, click Remote Control Options on the Options menu.



On the host: Allow users to reboot the computer in Remote Control Options.

On the guest: Reboot the host on the Session menu.

Rebooting the host from the guest

From a guest computer you may want to restart a host to put into effect changes you have made on that computer. Or you may want to restart a host computer to ensure that no one else can call in after you disconnect.

To reboot the host from the guest during Remote Control:

- On the Session menu, click Reboot Host.

  If Reboot Host is dimmed on the Session menu, the host has not set the option to allow rebooting by a guest.

Logging onto Windows NT from the guest

Depending on how a Windows 95 or Windows 98 computer is set up, you may or may not be prompted to log on to Windows. On every Windows NT computer, however, you must always press CTRL+ALT+DELETE before you can log on to Windows.

To send CTRL+ALT+DELETE to a Windows NT host, do one of these:

- Press the key combination specified for this purpose on the host.
- On the host's Session menu, click Send CTRL+ALT+DELETE to the Host.
- Click the Remote Control icon at the bottom of the host's LapLink workplace, and then click Feed CTRL+ALT+DELETE.

Configuring the host for rebooting

You must configure a host to allow any guest to restart it during a Remote Control session. You can also require that the host be restarted whenever a Remote Control connection is interrupted.

To configure a host computer for rebooting:

- On the Host tab of Remote Control Options (Options menu), check either or both of these boxes:
  - **Allow Guest to Reboot on Command** Check this box to allow guests to restart the host using the Reboot Host command on their computers.
  - **Always Reboot When Guest Disconnects** Check this box to require that the host be restarted whenever a guest breaks a connection or the connection is broken accidentally.

Ensuring access to the host after a reboot

At the same time you are configuring a host for rebooting, you can configure it so that a guest can resume a LapLink connection after the host is rebooted. You can do this by setting up LapLink to run whenever Windows is started.

To configure a host so that it automatically runs LapLink each time Windows is started:

- On the Advanced tab of Program Options (Options menu), check this box: Always Start LapLink before Windows Logon Prompt.

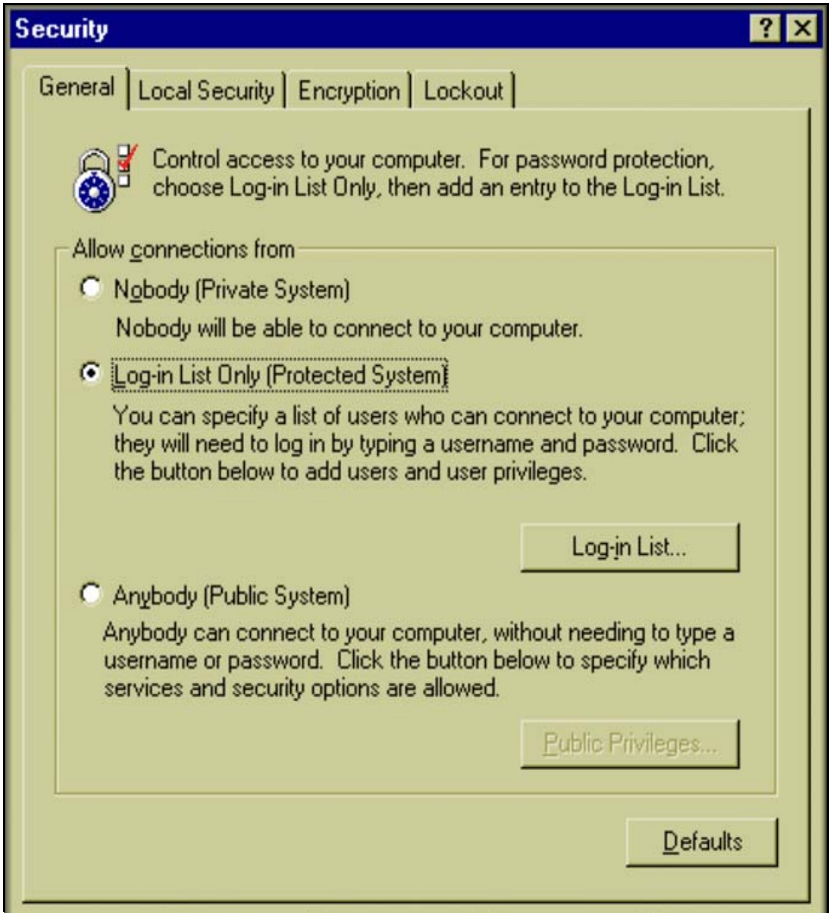
Logging on to Windows NT When a Windows NT host requires the user to press CTRL+ALT+DELETE at logon, a guest can press a special key combination specified on the host.

To specify the key combination for CTRL+ALT+DELETE:

1. On the Host tab of Remote Control Options (Options menu), click this box: Send CTRL+ALT+DELETE to This Computer When a Guest Presses This Key Combination.
2. Press one of these key combinations (where *n* is a number or letter): SHIFT+ALT+*n*, CTRL+SHIFT+*n,* CTRL+ALT+*n*, or CTRL+SHIFT+ALT+*n.*

Hosting a Remote Control session

When you allow your computer to be controlled from a remote computer, your computer becomes the host to a guest computer. For Remote Control to take place the host need only be running LapLink—you do not need to be at the computer. Sensitive information is protected by the conditions of the connection. You can grant greater access, or limit these conditions, through the LapLink security system.



After installation, change the default security setting to allow your computer to accept incoming connections and serve as a host.

To host a Remote Control session, leave LapLink running. (Minimize it if you wish.)

When you control a host, you control who can connect to that computer and the kinds of services they can use. For example, you can limit a guest to Remote Control only, or you can allow access to Text Chat and File Transfer as well. You can even allow a guest to blank your computer's screen or disable the mouse and keyboard. All of these options are set in the LapLink security system.

You can leave the host computer unattended, giving an authorized user exclusive control. Or you can stay at the computer and interact with the guest by trading off control. For example, the two of you could edit a document together, participate in a training session, or explore a new program.

TIP A host can be controlled by only one computer at a time. In the meantime, however, other computers can connect to the host using any other services than Remote Control.

What you see on a host

When a guest connects to your computer and begins Remote Control, your LapLink workplace is minimized. If you double-click the icon, the LapLink workplace is restored to a window.

At the bottom of the restored LapLink workplace, you see an icon for the Remote Control connection. The icon is identified by the name of the remote computer. Clicking this icon displays a Windows menu with standard commands. Clicking Close closes the Remote Control connection.

TIP You can make the LapLink workplace remain a window when a guest connects: Click Remote Control Options on the Options menu, and then click the Host tab. Clear this box: Minimize LapLink When This Computer Is a Host.

Reversing a Remote Control session

There may be times when the guest and you want to switch roles so that you become the guest controlling the remote computer.

To reverse the direction of Remote Control, the current Remote Control connection must be broken on either computer. Then, as the prospective guest, you open a Remote Control window and begin controlling the other computer.

TIP To avoid breaking the connection when a Remote Control connection is closed, make sure that there is at least one other service window open, such as File Transfer. If Remote Control is the only service in use, open another service window *before* closing Remote Control.

Sharing clipboard information with remote computers

Computers in a Remote Control connection share a common clipboard: you can copy or cut information to the clipboard on one computer and paste this information on another. Only information put in the clipboard during a Remote Control session is available to other computers.

When you cut or copy information for pasting in another document, the information is stored temporarily in the clipboard. Normally, clipboard information is transferred between documents on the same computer. When you use Remote Control, however, you can use the clipboard to transfer information from one computer to another. You can copy text or graphics on the host computer, for example, and paste it on the guest.

If you are controlling several computers at the same time, information you cut or copy on any of the linked computers can be made available for pasting on any of the others.

TIP Only information placed in the clipboard *during* Remote Control can be pasted on other computers. You cannot share any information copied or cut to a clipboard before a Remote Control connection is opened.

TIP When you clear the contents of the clipboard on one computer, you clear the clipboard contents of the other computer as well.

Pasting from the clipboard during Remote Control

When you copy or cut information to the clipboard during Remote Control, only a small part of the information is transferred to the other computer immediately. The rest of the information is transferred when you paste.

To prevent the loss of information added to the clipboard from the remote computer during Remote Control, paste the information before disconnecting.

If you are controlling several remote computers, information in the clipboard on your computer is available to any of the remote computers. If you want to transfer clipboard information from one remote computer to another, however, you must first paste the information into a document on your computer; then paste it into a document on another remote computer.

Disabling clipboard sharing

Clipboard sharing is available during Remote Control sessions unless you disable it.

To disable clipboard sharing:

1 Open a Remote Control connection to another computer.

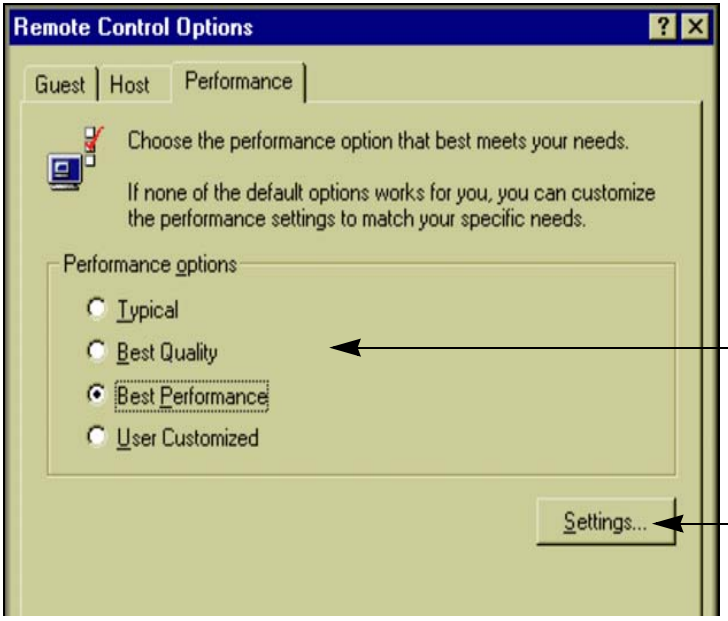
2 On the Edit menu, click Link Clipboards to clear the check mark.

If there is data in the common clipboard that hasn't been transferred completely, you are asked whether to complete the transfer.

TIP To enable clipboard sharing again, repeat the procedure to restore the check mark to Link Clipboards. Only data placed in the clipboard *after* you enable this option can be shared with other computers.

Customizing Remote Control performance

As a guest, you can change several Remote Control settings either to speed up performance or to enhance your view of the host screen. When speed is your priority, change the settings to enhance performance. When you want the best view of the host screen, turn off the performance enhancements. To change performance settings, click Remote Control Options on the Options menu, and then click the Performance tab.



Choose between enhancing your view of the host screen and speeding up Remote Control performance.

Click one of the preset options.

Or click the Settings button and specify your own settings.

To improve Remote Control performance, LapLink temporarily alters the host screen by removing its wallpaper, screen saver, and other visual enhancements. You can restore any of these enhancements. Or you can improve performance even more by minimizing the number of bitmaps and bitmap colors transferred over a connection.

To change Remote Control performance settings:

1 On the Options menu, click Remote Control Options.

2 On the Performance tab, click either of these options:

- **Best Quality** Improves the appearance of fonts and does not change the appearance of the host screen except to disable its screen saver.

- **Best Performance** Displays smaller bitmaps in black and white and does not show larger bitmaps at all; also changes the appearance of the host screen to maximize performance.

3 To customize the settings for any of these options, click the Settings button.[1]

Changing your view of the host screen

Click the Settings button in Remote Control Options to change the quality of your view of the host screen without affecting the host screen itself.

On the Guest Display tab, adjust these options:

Send Font Information Displays text and symbols on the guest computer. Checking this box speeds display performance but may not present the most accurate representation of text and symbols.

Prevent Display of Large Bitmaps Determines the size of the largest bitmap to be displayed in your view, ranging from 32 by 32 to 512 by 512 pixels. Choosing a smaller size improves performance but may cause bitmaps not to appear in some dialog boxes, wizards, and buttons. (Experiment with the setting, increasing it as necessary to display larger bitmaps.)

On the Guest Colors tab, adjust these options:

Use Solid Colors Displays solid colors instead of dithered, or patterned, colors. Performance is not affected, but your view of the host may improve.

Bitmap Color Selects the palette used to display bitmaps. The values range from Monochrome to True Color (24 bit). Choose a palette with fewer colors to improve performance.

Temporarily changing the host screen

Click the Settings button in Remote Control Options to alter your view of the host by changing the appearance of the host screen itself. When you disconnect, the host screen is restored to its original appearance.

On the Host Display tab, change these settings:

Disable Screen Saver Keeps the host's screen saver from running.

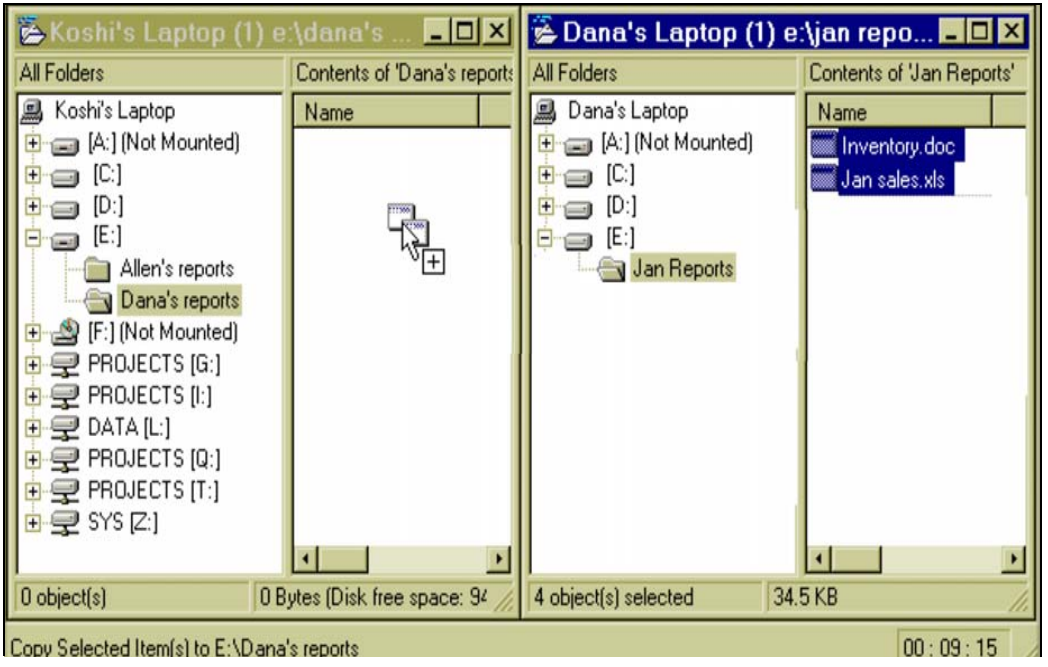
Disable Special Windows Effects Disables several Windows features, including desktop wallpaper or patterns, animated windows, and Web Page view.

1 Performance options are set at Typical during installation. They are reset to User Customized whenever you click the Settings button and make changes.

5 Using File Transfer

Using File Transfer—Overview

Once you have connected to another computer and opened File Transfer windows, you are ready to transfer files between the computers. First, display your target, and then select the files you want to transfer. If you want the files on both computers, copy them. If you want to transfer the files to one computer and delete them from the other, move the files.



You can open File Transfer windows at the time you connect to a remote computer. Or you can open File Transfer windows sometime after the connection is made.

NOTE In Windows, *folder* and *subfolder* are used in place of *directory* and *subdirectory*.

To open File Transfer windows:

- Click the Open File Transfer button on the Shortcut bar. Or click Open File Transfer on the Window menu.

  Two File Transfer windows appear: one for the remote computer, one for your computer. Using these windows, you can view all the files on any drive on both computers.

Step one: display the target

Since you will be using the drag-and-drop method of copying and moving files, first find your target and make it visible on your screen. A target is the drive or folder you want to transfer the files to.

To display the target:

1 Identify the target window: it may be the window for your computer or the remote computer—whichever you want to receive the files.

2 On the left side of the target window, double-click the target drive.

3 Click the target folder. Its contents now appear on the right.

4 If you are looking for a subfolder, click the plus sign (+) beside the folder containing the subfolder. Then click the subfolder itself.

NOTE To determine which File Transfer window is which, look for the computer name in the title bar, at the top of each window.

Step two: select the files

In the opposite File Transfer window, select the files you'll be transferring to the target you just displayed.

To select the folders and files you want to transfer:

- On the right side of the window, click the folder or file you want to transfer.
- To select more than one item, do either of the following:
  - Hold down CTRL as you click each item.
  - To select two or more items listed next to each other, click the first item and press SHIFT while you click the last item.

NOTE If you prefer, select a group of files or folders by clicking at a right corner of the group and dragging to the opposite corner to form a selection box.

Step three: drag and drop

Using the drag-and-drop method simplifies file transfers. Keep in mind the difference between copying and moving: Copying puts a copy of the files on the other computer, leaving the originals where they were. Moving puts the files on the other computer, deleting the originals.

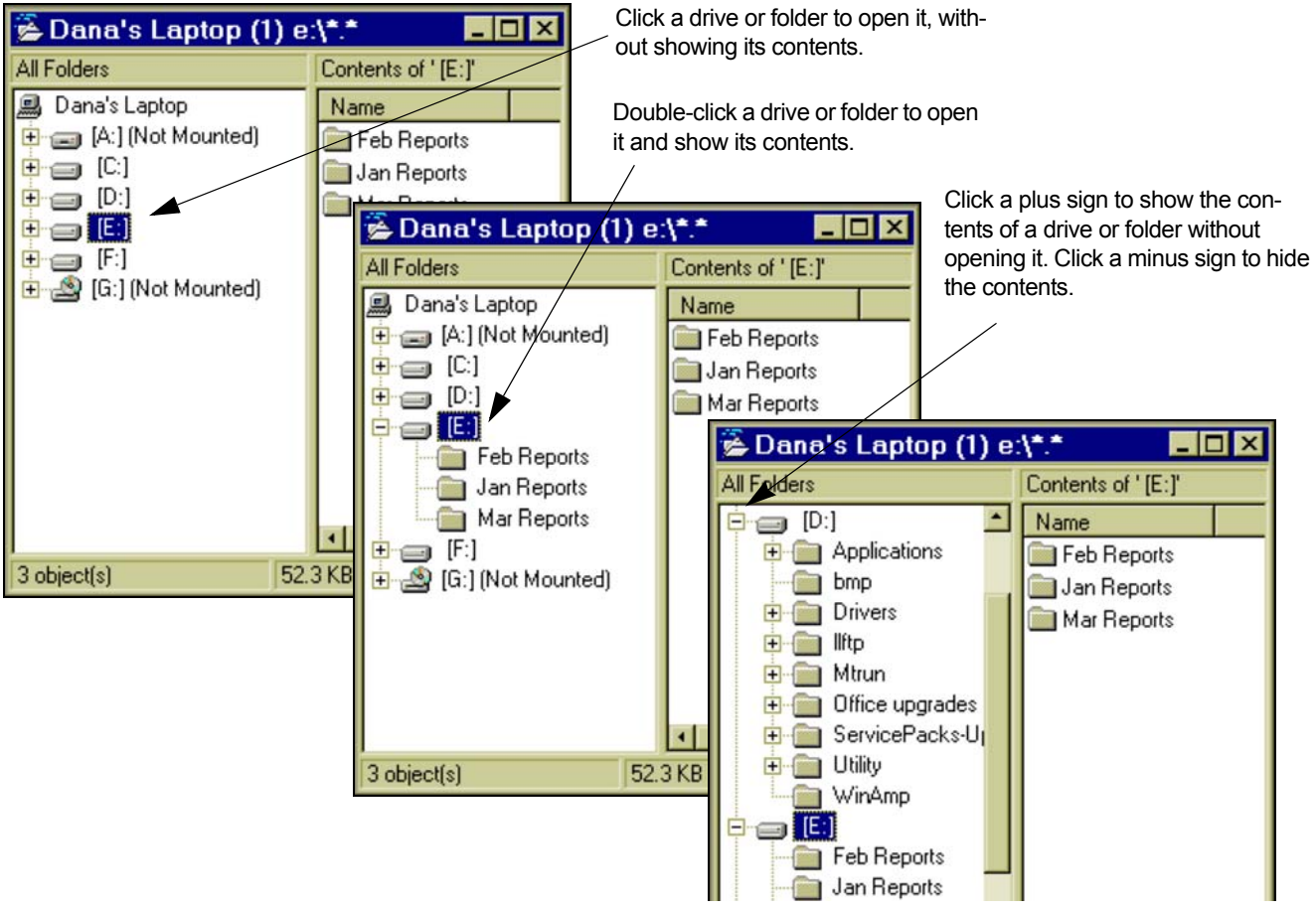
To drag and drop the selected files:

- To copy the files, hold down CTRL and your left mouse button as you drag them to the target folder.
- To move the files, hold down SHIFT and your left mouse button as you drag them to the target folder.

TIP If you drag without using CTRL or SHIFT, files are *copied* when you drag to a different drive or computer and *moved* when you drag to another location on the same drive.

Navigating through drives and folders

Each File Transfer window is split into a left and a right side. The left side is designed for navigating through drives and folders: click or double-click a drive or folder to open it and display its contents. On the right side, you see the contents of the open drive and folder. Commands on the View menu let you change the appearance and the order of the contents.



Follow these guidelines to navigate through the left side of a File Transfer window:

- **Double-click a drive or folder** Opens and expands the drive or folder, displaying its subfolders immediately below. (Double-clicking is the fastest way to navigate downward in a hierarchy of folders.)
- **Click a drive or folder** Opens the drive or folder without expanding it.
- **Click a plus sign (+)** Expands the drive or folder, displaying its subfolders immediately below. The drive or folder is not opened.
- **Click a minus sign (-)** Collapses the drive or folder, hiding its subfolders.

NOTE Want to locate a particular folder or file? Type the first letter of its name. The highlight moves to the next item beginning with that letter. Typing the letter again finds the next occurrence.

Changing the view

When you open a drive or folder, you see its contents—subfolders and files—on the right side of the File Transfer window.

By default, the contents appear in Detail view: file name, size, type (based on the MS-DOS name extension), modification date, and attributes.

To change the appearance of the items displayed on the right side of a File Transfer window:

- On the View menu, click one of these commands: Large Icons, Small Icons, or List.

Try the different views to find your preference. To return to the original view, click Detail.

Sorting files and folders

Regardless of the view, you can rearrange the folders and files on the right side of a File Transfer window according to name, size, date, and so on.

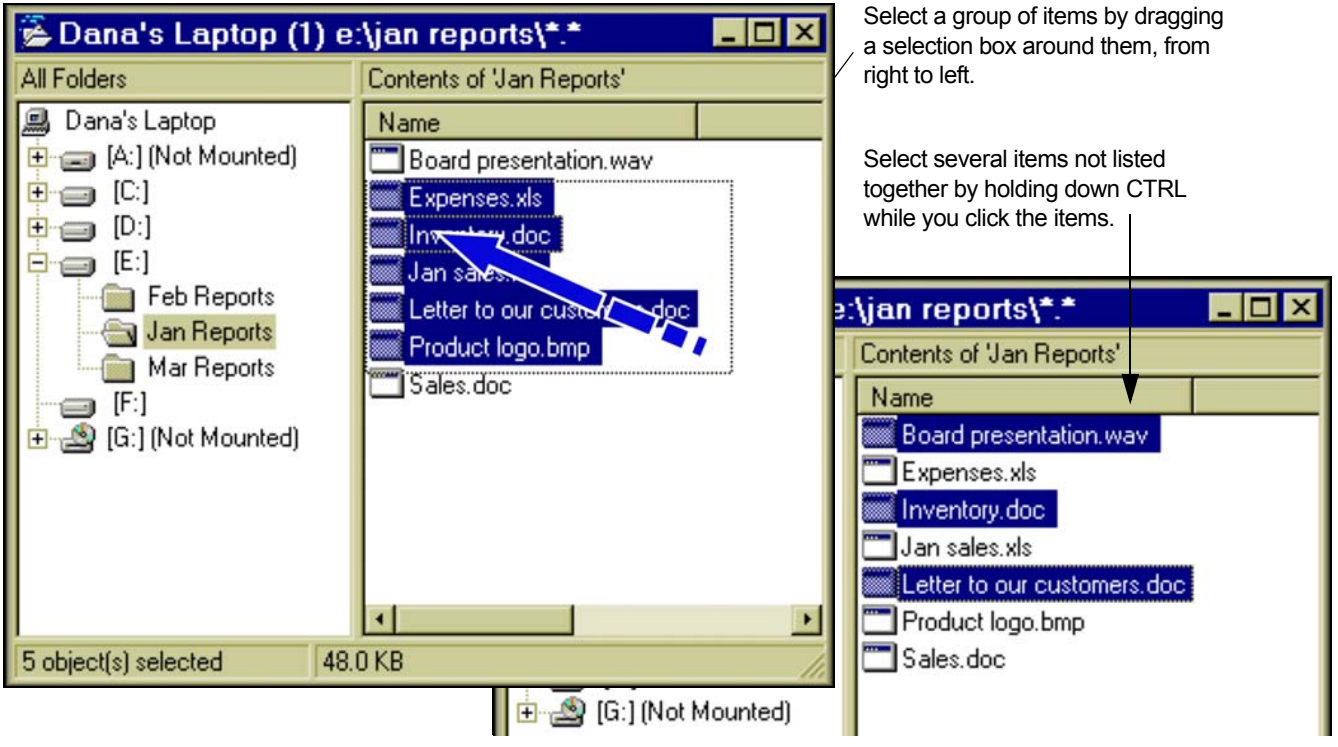
To change the order of files and folders:

- On the View menu, point to Arrange Icons; then click one of these commands: By Name, By Type, By Size, By Date, or By Attributes.

TIP If you are displaying files in Detail view, you can sort them by name, size, type (file name extension), modification date, or attribute: click the corresponding button at the top of a column. Clicking the same button again reverses the order.

Selecting files and folders

On the left side of a File Transfer window, you can select only one folder at a time. On the right side, you can select multiple folders and files. To select a single item, point to it and click the left mouse button. To select several items in sequence, click the first item; then hold down SHIFT while you click the last item. To select items out of sequence, hold down CTRL while you click each one. You can also click Select All or Select By on the File menu. To cancel an individual selection, hold down CTRL, and click the item.



You must select a folder or file before you can copy or move it. When you select an item, its name and icon are highlighted.

You can select a single folder on *either* side of a File Transfer window. You can select files and multiple folders only on the *right* side.

NOTE By default, selecting a folder selects all of its files and its subfolders. To change the default, click File Transfer Options (Options menu). On the Filter tab, clear this box: Include Subfolders in Copies. (You can always override this setting when you are asked to confirm a copy or move operation.)

To select a single file or folder:

- Place the mouse pointer on its name or icon, and click the left mouse button.

To select a group of items, do either of the following:

- Click the first item, and press SHIFT while you click the last item.
- Click at a right corner of the group and drag to the opposite corner to form a selection box.

To select two or more items out of sequence:

- Press CTRL while you click the items.

To select all folders and files in the current folder:

- On the File menu, click Select All.

TIP To select everything on a drive, click the drive and then click Select All.

To select folders and files using the Select By command:

1 On the File menu, click Select By.

2 In the Filter box, type the name of a file or folder. Or use wildcards to specify items with similar names.

For example, typing `*.DOC` selects all files with the .DOC extension. The default (`*.*`) selects all files and folders.

You can specify several criteria at once by typing them one after another and inserting a space or a comma between them. For example, typing `*.DOC,*.TXT` displays all files with those extensions.

3 If you want to select according to date, check the Enable Date/Time Range box. Then type the dates and times under Oldest File and Newest File.

4 Click OK.

Clearing selections

To clear an individual selection:

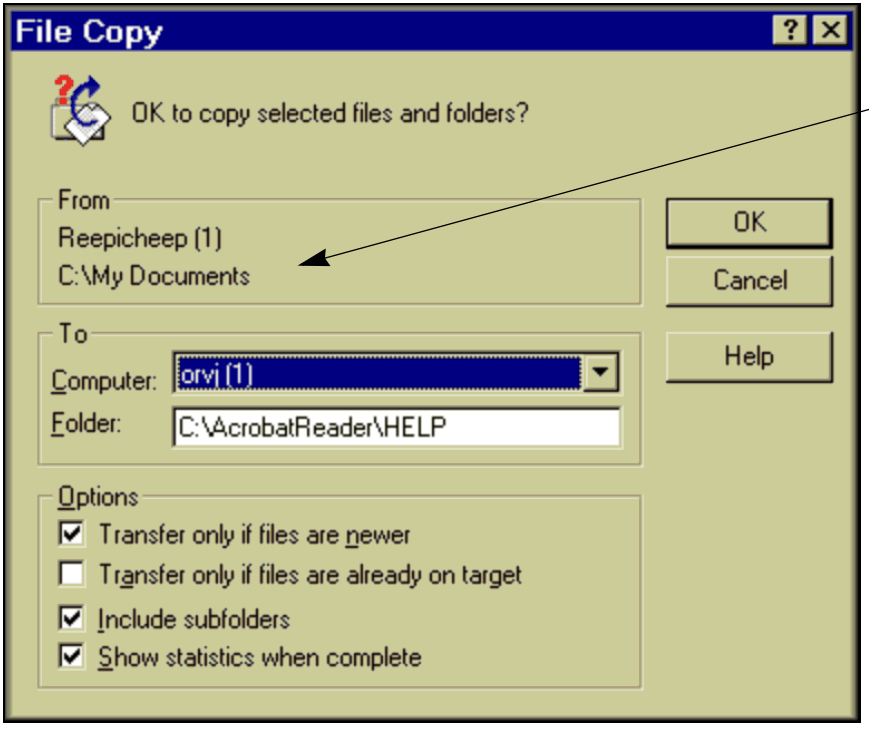
- Hold down CTRL while you click the item.

To clear all selections:

- On the File menu, click Clear Selection.

Copying or moving files and folders

Once you have displayed the target and selected the items to be transferred, you are ready to use the Copy or Move command. Or you can use the mouse to drag the items and drop them onto the target. Before the transfer is completed in either case, you see a confirmation dialog box showing details of the operation you are about to perform. You can then proceed immediately, change certain conditions, or cancel the operation entirely.



Before copying or moving, you can confirm that you have selected the source and target as you intended.

When you copy or move, you transfer items from one location—the *source*—to another—the *target.* You can transfer items using the Copy or Move commands or by dragging them with the mouse.

To prepare for a copy or move operation:

1 Navigate through the left side of the target window to display the folder where you want to put the selections. Click the folder. (For more information, see page 78.)

2 In the source window, select the items you intend to transfer. Make sure that the source and the target are still showing. (For more information, see page 80.)

NOTE Before attempting to transfer between computers, open a File Transfer window for each of them.

To copy or move using drag and drop:

1 Place the mouse pointer over a single item or one of several items you have selected on the source.

2 Do either of the following:

- To copy, press CTRL and your left mouse button as you move the pointer over to the target folder.
- To move, press SHIFT and your left mouse button as you move the pointer over to the target folder.

3 Once the target is highlighted, release the mouse button and the CTRL or SHIFT key.

You now see the File Copy or File Move dialog box, as shown on the previous page.

To copy or move using a command:

- With the source window still active, click Copy or Move on the File menu.

You now see the File Copy or File Move dialog box, as described next.

NOTE Copy and Move also appear as buttons on the toolbar near the top of each File Transfer window.

To complete the copy or move:

1 In the File Copy or File Move dialog box, you can verify the source and the target, change the target, and set options. Do any of the following:

- Under To, verify the target. You can choose a different computer from the Computer list; in the Folder box, you can type any drive and folder already on the target.
- Under Options, check or clear the boxes as you wish. For more information, see page 84.

2 Click OK to complete the operation or Cancel to halt it.

You now see a dialog box reporting on the operation as it proceeds. Click Cancel to halt the operation. If the Protected Files dialog box appears, select the files you want to transfer, and click OK.

TIP Dropping onto a drive puts the selections at the highest level of the hierarchy of folders.

TIP Dropping onto a folder puts the selections inside the folder.

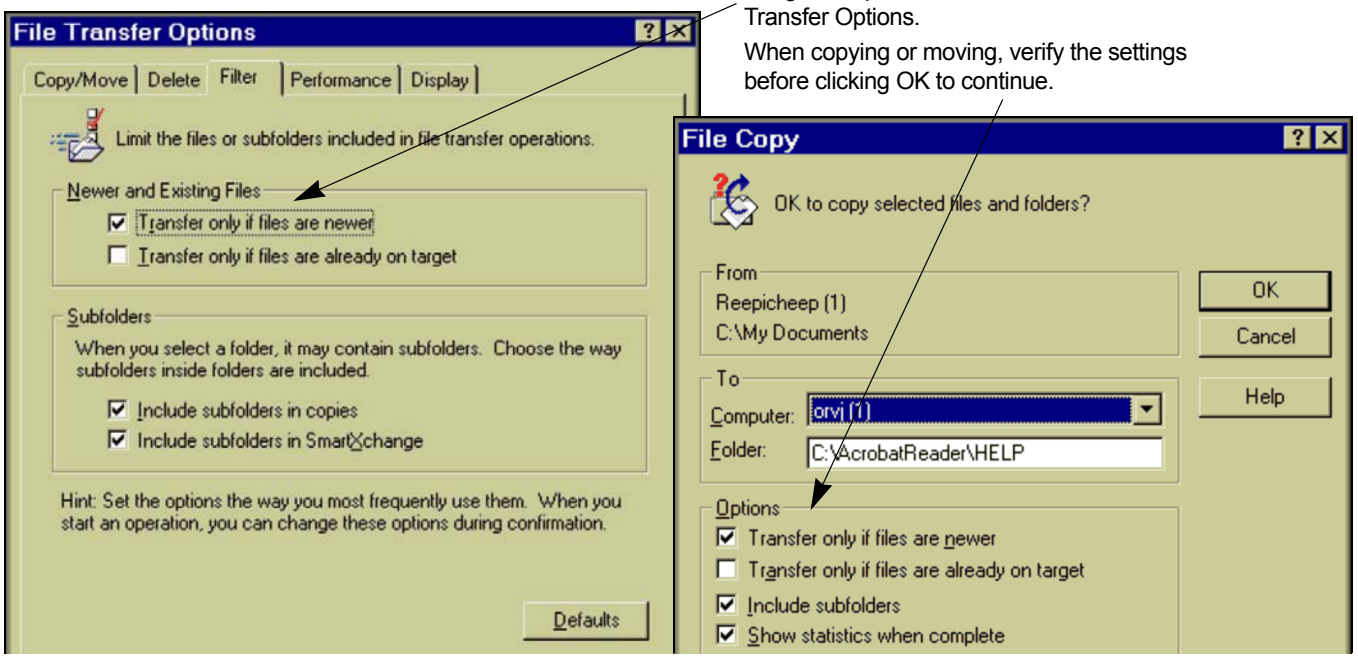
TIP Dropping onto a file puts the selections on the same level as the file.

Setting File Transfer options for the results you want

Certain File Transfer options play a crucial role when you are copying or moving files. Depending on how you set them, you can include or exclude subfolders, prevent the overwriting of files except by newer copies, or copy only files you have backed up before. To specify global preferences for these options, click File Transfer Options on the Options menu; then click the Filter tab. Whenever you confirm a copy or move operation, you can change the settings for that operation.

Set global options on the Filter tab of File Transfer Options.

When copying or moving, verify the settings before clicking OK to continue.



There are three File Transfer options that determine which files are transferred and which are overwritten:

- Transfer Only If Files Are Newer
- Include Subfolders in Copies
- Transfer Only If Files Are Already on Target

The first two options are in effect until you change them.

To change your global preferences for File Transfer options:

- On the Options menu, click File Transfer Options. Click the Filter tab, and then check the appropriate boxes.

When you transfer files, you can tailor these options for that operation before giving your confirmation.

NOTE Before transferring files between computers, ensure that their clocks are reasonably in sync. If they are not, files that appear to be older may actually be newer, and you could lose your most recent work.

Protecting newer copies of files

One of the options—Transfer Only If Files Are Newer—is designed to preserve files that represent your most recent work. It is also useful for speeding up file transfers; files that do not need to be updated are excluded from the operation.

When the box is checked, Transfer Only If Files Are Newer ensures that files are not overwritten by older copies of those files. (Files not already on the target will be copied anyway.) When the box is cleared, files are overwritten without regard to their dates and times.

Including or excluding subfolders

One of the options—Include Subfolders in Copies—is designed for copying a hierarchy of folders and subfolders and is potentially the most powerful of the File Transfer options. It can make the difference between copying hundreds of files or only a few.

When the box is checked, Include Subfolders in Copies extends your selection to include any subfolders within the folders you have selected. When the box is cleared, your selection is limited to the selected files and folders (including the files in those folders); subfolders within folders are excluded.

Updating older copies of files

One of the options—Transfer Only If Files Are Already on Target—simplifies the task of updating older copies of files without adding new ones. It is designed for anyone who regularly updates the same set of files. No matter how many files you select on the source, only those already on the target will be copied; the others will be ignored.

In preparation for using this option the first time, copy the files to the target with the box cleared. When you are ready to update the same files, check the box.

Deleting to the Recycle Bin

By default, any files you delete from a hard drive are “recycled,” that is, moved to the Windows Recycle Bin, where you can retrieve them later.

NOTE Whether files are recycled or permanently removed is determined solely by the setting on the computer that opens the connection.

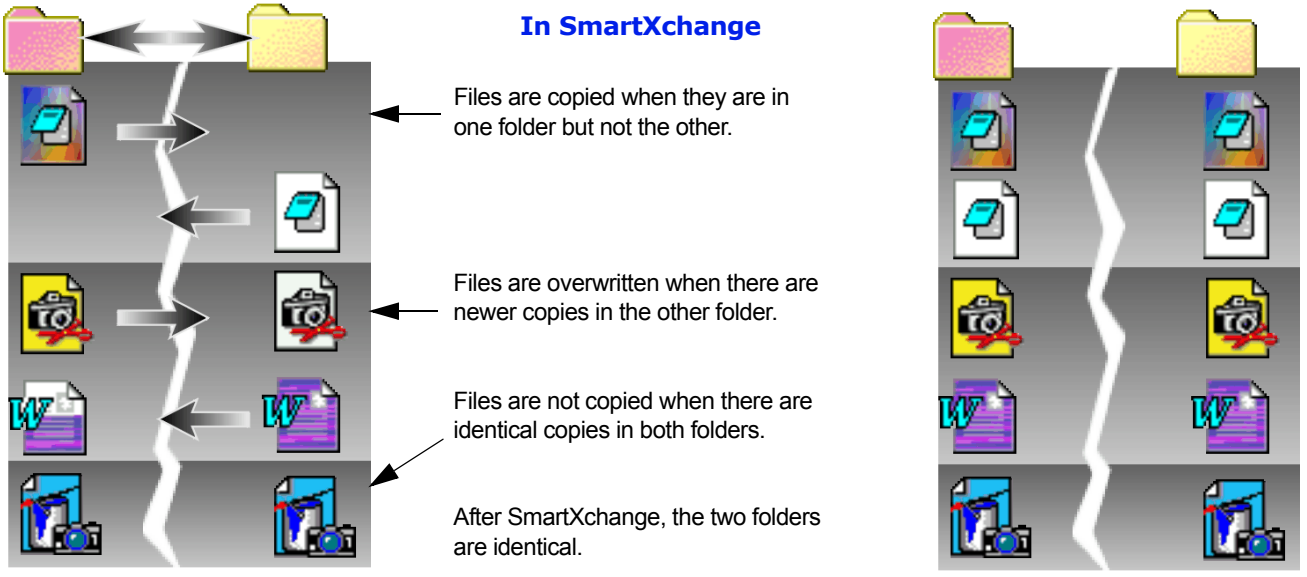
To permanently remove files when you delete them in LapLink:

1 On the Options menu, click File Transfer Options.

2 On the Delete tab, clear this box: Move Deleted Files and Folders to the Recycle Bin.

Synchronizing folders with SmartXchange

Use SmartXchange to synchronize two folders in a two-way exchange of files. You can limit the scope of the operation by including only the files already in both folders. You can also use SmartXchange to update a backup folder quickly. In either case, older files are overwritten, but no files are deleted.



Synchronizing folders

If you have ever copied files back and forth between computers so that they share the latest files, you have synchronized. Unlike the usual copy operation, synchronization works in two directions: from one folder to the other and back again.

NOTE With SmartXchange, you determine the items to be copied by selecting the folder containing the items, not by selecting the items themselves. Select the folder on the left side of a File Transfer window.

With SmartXchange, you can accomplish this in one operation, one folder at a time. You can increase the scope of the operation by including subfolders within the folder. You can limit its scope by exchanging only the files that are on both folders already.

CAUTION SmartXchange is a tool for exchanging files between folders. It does *not* merge the contents of files. If you need to merge databases, schedules, or other shared files, see the documentation for the program in which they were created.

TIP If you synchronize the same folders on a routine basis, consider using Xchange Agent instead of SmartXchange. Xchange Agent automates the process of opening connections, selecting the pairs of folders to be synchronized, setting the appropriate options, initiating the exchange, and disconnecting. For more information, see page 96.

To use SmartXchange to synchronize folders:

1 On the *left* side of each File Transfer window, click the folder (not an entire drive) containing the files you want to exchange.

NOTE To verify which folder is open, look at the title bar, at the top of the File Transfer window.

2 On the SyncTools menu, click SmartXchange. Or click the Sync button on the toolbar near the top of the File Transfer window.

3 Verify that the source and target are correct. If necessary, change the target.

- If you want to include subfolders in the exchange, check this box: Include Subfolders.
- If you merely want to update files—and not add new ones—check this box: Transfer Only If Files Are Already on Target. If you want the two folders to be identical, the box must be cleared.

4 Make sure that this box is cleared: One-way Transfer Only.

5 Click OK.

Updating backup folders

You can also use SmartXchange to simplify the process of updating a folder to which you have backed up a set of files.

To use SmartXchange to update a backup folder:

1 On the *left* side of the target (backup) window, click the folder you want to update.

2 On the *left* side of the source window, click the folder containing the files you want to back up again.

3 On the SyncTools menu, click SmartXchange.

4 Verify that the source and target are correct. Change the target if necessary.

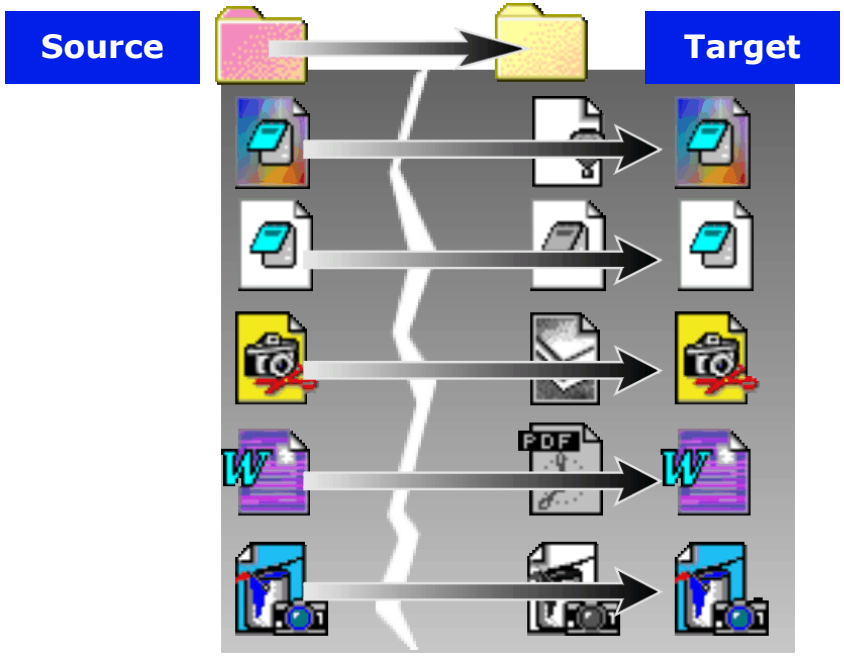
- If you want to include subfolders in the exchange, check this box: Include Subfolders.
- If you want to update files—and not add new ones—check this box: Transfer Only If Files Are Already on Target. If you want the folders to be identical, the box must be cleared.

5 Make sure that this box is checked: One-way Transfer Only.

6 Click OK.

Replacing one folder with another: Clone Folder

Clone Folder replicates one folder onto another by adding, deleting, and updating files on the target until they match those on the source. After opening the target and the source folders, click Clone Folder on the SyncTools menu. Then choose whether to include or exclude subfolders.



Use Clone Folder to replace the contents of one folder (the target) with the contents of another (the source).

Clone Folder has the effect of erasing the target and copying the entire source.

Clone Folder replaces one folder (the target) with another (the source). The effect is the same as deleting everything on the target and copying everything from the source.

Cloning a folder adds and updates target files until they are identical to those on the source. In addition, it deletes any target file that has no counterpart on the source.

NOTE With Clone Folder, you determine the items to be copied by selecting the folder containing the items, not by selecting the items themselves.

It's the deletion of files that makes Clone Folder useful, particularly when you are maintaining a backup folder. With the usual copy operation, the backup folder over time accumulates all the files you have deleted from the source. With Clone Folder, those unwanted files are removed with each backup.

CAUTION Use this command with caution. Any subfolder or file not on the source will be deleted from the target.

To replace one folder with another:

1 On the *left* side of the *target* window, click the folder whose contents you want to replace.

2 On the *left* side of the *source* window, click the folder whose contents you want to reproduce.

3 With the source window still active, click Clone Folder on the SyncTools menu.

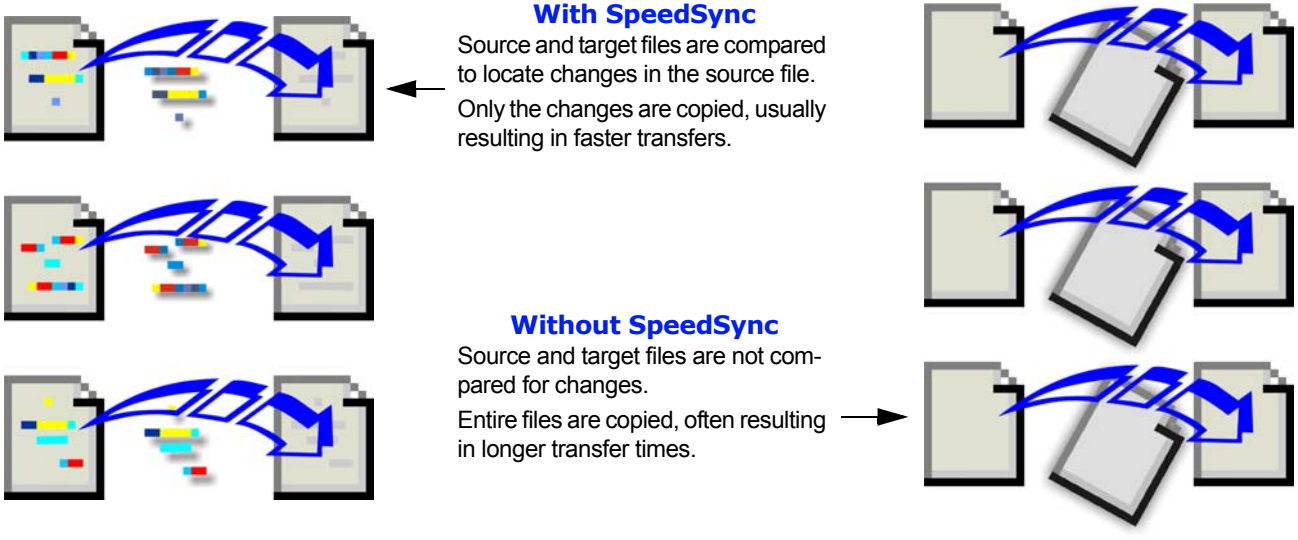
4 Verify that the source and target are correct. Change the target if necessary.

5 If you want to reproduce subfolders within the selected folder, check this box: Include Subfolders.

6 Click OK.

Speeding file transfers with SpeedSync and compression

When you are updating files, SpeedSync can shorten transfer times by sending only the parts of the files that have changed since the last update. SpeedSync is most effective when you update files that have not been changed extensively since the last update. Compression, on the other hand, speeds file transfers by "shrinking" files before they are sent and restoring them to their original sizes afterward. Compression is most effective with large files that have not been compressed already. Though both features are in effect by default, there may be circumstances in which you might improve transfer times by disabling them.



Using SpeedSync

SpeedSync is designed to cut transfer times when you are updating files. It has no effect when you are copying files that were not on the target before you started copying.

Before a file is copied, SpeedSync searches the target for a file with the same name. If none is found, the entire file is copied. Otherwise, the two files are compared to locate changes in the source file. Only the changes located in the source file are copied.

The time necessary to locate changes is usually more than offset by the smaller amount of data that has to be transferred. The reverse may be true in a few circumstances,

particularly when you are updating files over a fast network connection.

NOTE Whether SpeedSync and compression are used in file transfers depends entirely on the settings of the guest (the computer that opens the connection).

CAUTION SpeedSync is a tool for decreasing transfer times. It does *not* merge the contents of two files. The contents of one file will always replace the contents of the other. If you need to merge databases, schedules, or other shared files, see the documentation for the program in which they were created.

To disable SpeedSync:

1 On the Options menu, click File Transfer Options.

2 On the Performance tab, clear this box: Use SpeedSync on All File Transfers.

TIP To review the effect of SpeedSync on your past file transfers, open at least one File Transfer window. Then click SpeedSync Statistics on the SyncTools menu. You see the statistics for your most recent transfer as well as combined statistics for earlier transfers.

Using compression

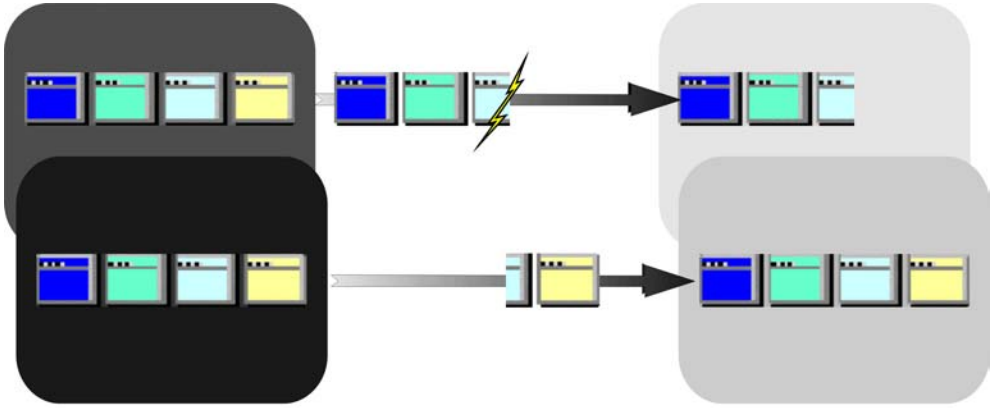
Because compression usually results in the transfer of less data, it is particularly useful when you transfer large files by modem: the larger the files, the greater the savings.

Since compression would actually slow the transfer of files that have already been compressed (by PKZIP or another file-compression program), LapLink automatically turns this feature off while it is transferring such files.

If you find a situation in which compression does not speed up file transfer, you can disable it: On the Options menu, click File Transfer Options. On the Performance tab, clear this box: Use Compression When Transferring Files.

Resuming an interrupted file transfer

If you lose your connection to another computer while transferring files, File Transfer Recovery lets you connect again and continue the transfer where it left off. Any file—or portion of a file—copied before the interruption is skipped; only the untransmitted data is copied.



If you lose a connection while transferring a file, the data transferred at the point of interruption is stored on the target computer.

When you reconnect and resume the transfer, the missing part of the file—not the entire file—is copied, along with the remaining files.

File Transfer Recovery lets you continue a file transfer even when you have lost a connection. Instead of starting the transfer at the beginning, File Transfer Recovery resumes at the point where the connection was lost:

- Only the missing part of the interrupted file is copied.
- Files successfully copied before the interruption are not copied again.

TIP File Transfer Recovery is particularly useful when you copy large files over an unreliable modem connection.

To resume an interrupted file transfer:

- If you were running an Xchange Agent when the interruption occurred, run the agent again.
- If you were transferring from File Transfer windows:
  1. Re-establish the connection.
  2. *Select the same files and folders.*
  3. Begin the transfer again.

File Transfer Recovery and other options

Three options must be enabled for File Transfer Recovery to work effectively. All three appear in File Transfer Options (Options menu) and are enabled by default.

Enable File Transfer Recovery Located on the Copy/Move tab, this box must be checked for File Transfer Recovery to occur at all.

Use SpeedSync on All File Transfers Located on the Performance tab, this box must be checked to allow the transfer to resume with the missing part of a file. When it is cleared, the entire file must be sent again.

Transfer Only If Files Are Newer Located on the Filter tab, this box must be checked so that files successfully copied before the interruption are not copied again.

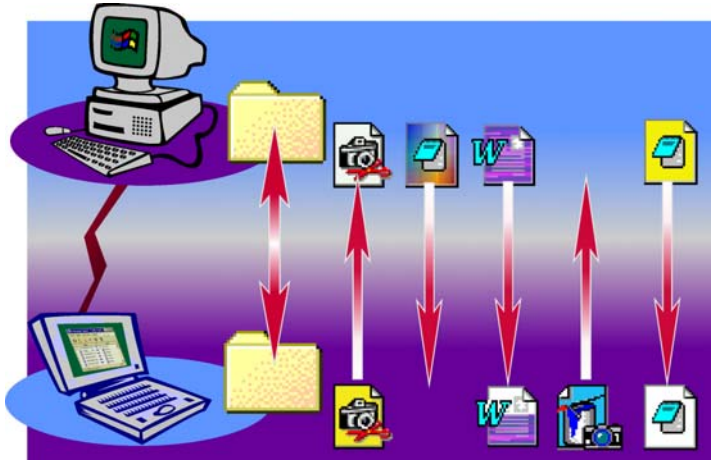
When a transfer is interrupted, File Transfer Recovery creates a file in the target folder containing whatever part of the file has been transferred successfully. The file is named !LAPLINK.TSI.

When File Transfer Recovery resumes a transfer, this file is compared with the source file to determine what's missing. Once the file is complete, !LAPLINK.TSI is given its original name. (If you do not use File Transfer Recovery to resume the transfer, the file remains in the folder and can be deleted.)

6 Automating file synchronization with Xchange Agent

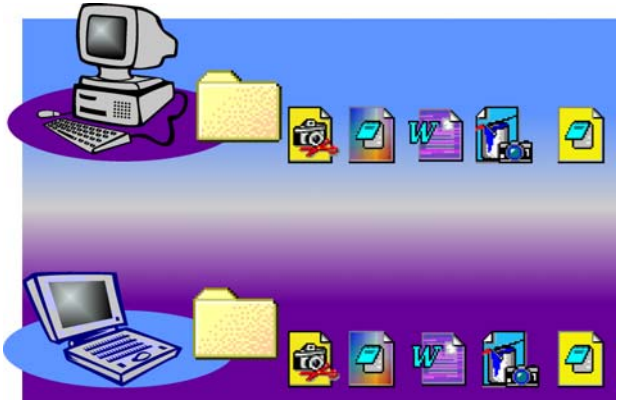
Using Xchange Agent—Overview

Xchange Agent automates synchronization—the process of keeping your files updated when you use two computers. To set up an Xchange Agent, open a connection to another computer, choose the pairs of folders to be synchronized; then preview and perform the synchronization. After working on the files on either or both of the computers, run the agent to reconnect and update the older copies of the files automatically. You can run an agent by double-clicking its shortcut icon or by scheduling it to run unattended.



Xchange Agent automatically copies the newer versions of all files regardless of which computer they are on. Files that have no match are copied onto the computer that lacks them.

In the end, files in the synchronized folders are identical.



Xchange Agent simplifies the repetitive process of keeping two computers—often a laptop and a desktop—in sync. Whether your most recent work appears on one or both of the computers, Xchange Agent transfers files so that both have only the newer copies of your files.

Xchange Agent automates the process of opening connections, selecting the pairs of folders to be synchronized, setting the appropriate options, initiating the exchange, and disconnecting. To prevent unwanted results, you can preview beforehand.

NOTE Xchange Agent is also useful for local synchronizations, as when you keep files on your desktop in sync with files on a local network.

Creating an Xchange Agent

Open a LapLink connection—by modem, network, or any other means—to the computer with which you want to exchange files.

Then use the Xchange Agent wizard to create your own Xchange Agent:

- From the hierarchy of folders displayed for each computer, choose the pair of folders—one folder on each computer—you want to synchronize. Choose as many pairs as you want.
- Name your Xchange Agent file and save it.
- Preview the agent you just created, making sure that you set it up as intended.

Then run the agent to make the files in each pair of folders identical.

NOTE Xchange Agent automatically copies the newer versions of all the files regardless of which computer they are on. Files that have no match are copied onto the computer that lacks them.

Previewing an Xchange Agent

To prevent unintended consequences, you can preview an agent before synchronizing. The preview screen shows pairs of folders and files, with arrows to indicate the direction in which files will be copied when the agent is run.

In a preview, you can customize the agent by excluding pairs of files (and entire folders) from the current synchronization, leaving the files as they are on each computer.

TIP By default, agents are previewed before being run. To bypass preview, click Properties on the File menu and click an option on the Run Options tab. For more information see page 105.

Running an Xchange Agent

There are several ways to run an Xchange Agent:

- Double-click its shortcut icon on the desktop.
- Schedule the agent to run unattended.
- Start LapLink and run the agent.
- Double-click the agent file in Windows Explorer.

CAUTION Xchange Agent exchanges files between folders. It does ***not*** merge the contents of files. To merge databases and other shared files, use the program in which the files were created.

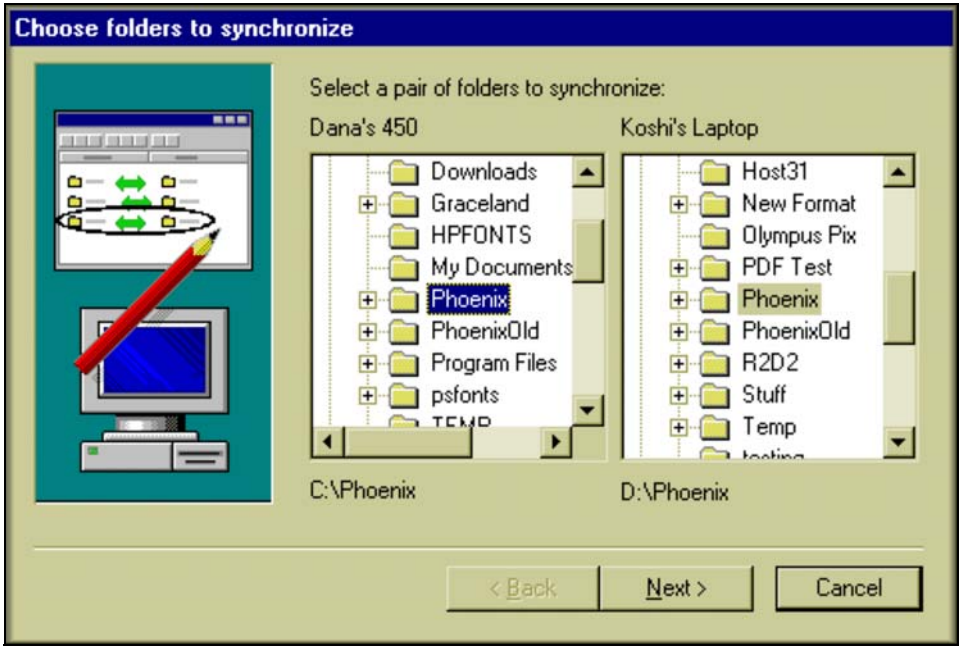
Beyond the basics

Xchange Agent offers various options for customizing each synchronization. For example, you can:

- Change the direction of copy: instead of a two-way exchange of files, copy files in one direction only, from one computer to the other.
- Include or exclude (filter) files according to type or name.
- Include or exclude subfolders within synchronized folders.

Creating an Xchange Agent

Once you connect to another computer, you create an Xchange Agent by selecting the pairs of folders—one folder on each computer—which you want to keep synchronized. You can select the pairs from a window displaying the folders on both computers, or you can drag folders from File Transfer windows onto the Xchange Agent window. In either case, you can preview the agent to ensure that you have set up the synchronizations as intended.



To create an Xchange Agent:

1 Start LapLink and open a connection with the computer with which you want to synchronize files.

For a local synchronization, simply start LapLink.

2 On the SyncTools menu, click either of these:

- Xchange Agent wizard
- New Xchange Agent

Using the Xchange Agent wizard

The wizard guides you through the process of selecting pairs of folders to be synchronized. After naming and saving the agent file, you can preview the agent and change its settings.

To make the files in each folder pair identical, click the Run button on the toolbar.

NOTE There are two “modes” in Xchange Agent: edit and preview. Certain operations are available in one mode and not the other. To save an agent, for example, you must be in edit mode. To change to edit mode from preview mode, click the Close Preview button on the toolbar.

Using New Xchange Agent

After choosing New Xchange Agent from the SyncTools menu, you can select the pairs of folders to be synchronized in two ways:

- On the Edit menu, click Add Folder Pair. After specifying whether the synchronization is Local-Local or Local-Remote, click a folder on each side of the window. Repeat the procedure to add other folder pairs.
- Drag folders from File Transfer windows onto the Xchange Agent window. Drag a folder first from one File Transfer window, then from the other one. Repeat the procedure to add other folder pairs.

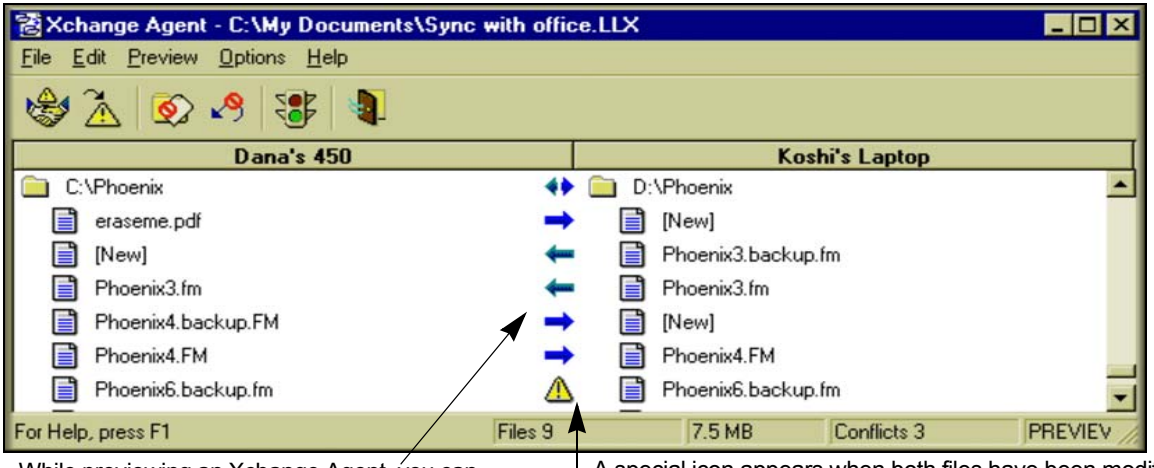
Once you have selected the pairs to be synchronized, you can do any of the following:

- Preview the agent: click the Preview button on the toolbar.
- Name and save the agent file: On the File menu, click Save. In the File Name box, type a name, and click OK.
- Run the agent to make the files in each folder pair identical: click the Run button on the toolbar.

TIP Xchange Agent files are given the .LLX extension. In Windows 95 and Windows 98, they are stored in the My Documents folder. In Windows NT, they are stored in the \Profiles*yourname*\Personal folder within the Windows folder (where *yourname* is your Windows NT logon name).

Previewing and running an Xchange Agent

Previewing an Xchange Agent lets you see exactly which folders will be synchronized and which files will be overwritten. It also lets you skip pairs of folders and files and resolve conflicts. Unless you specify otherwise, you preview each agent before you run it. You can run an agent from the Windows desktop, from within LapLink, or you can schedule it to run in your absence.



While previewing an Xchange Agent, you can tell the direction of copy from the arrows.

A special icon appears when both files have been modified since a previous synchronization. You can specify how these "conflicts" are handled.

Previewing

By default, a preview appears whenever you run Xchange Agents. You can also open an agent and preview it.

NOTE By default, only agents that you schedule to run unattended will proceed without a preview. To set up other agents to run without a preview, see page 105.

To open and preview an Xchange Agent:

1 In LapLink, click Open Xchange Agent on the Sync-Tools menu. (In Xchange Agent, click Open Xchange Agent on the File menu.) Then click the agent file and click Open.

2 Click the Preview button on the toolbar.

While previewing an agent you can do any of the following:

- **Select files or folders to be omitted from the current synchronization only** Click a pair and click the Skip Pair button on the toolbar. Skipping a folder skips all the files and subfolders it contains.

- **Put skipped pairs back into a synchronization** Click a skipped pair and then click the Undo Skip button on the toolbar.
- **Resolve conflicts** Click a pair showing a conflict icon, click the Resolve Conflict button on the toolbar, and specify how you want the conflict resolved. For more information about resolving conflicts, see page 102.

NOTE In a preview, arrows indicate the direction in which files will be copied, and thus which files will be overwritten. Special icons indicate conflicts between files.

CAUTION Once you have resolved conflicts or marked pairs to be skipped, run the agent *before closing the preview.* Your modifications will be lost otherwise.

TIP To select every pair of folders and files in the agent, click Select All on the Edit menu.

TIP To locate a pair with a conflict, click the Next Conflict button on the toolbar.

To close a preview:

- Click the Close Preview button on the toolbar. You are now in edit mode.

TIP While in edit mode you can customize an agent in several ways. For more information see page 104.

Running an Xchange Agent

There are several ways to run an Xchange Agent:

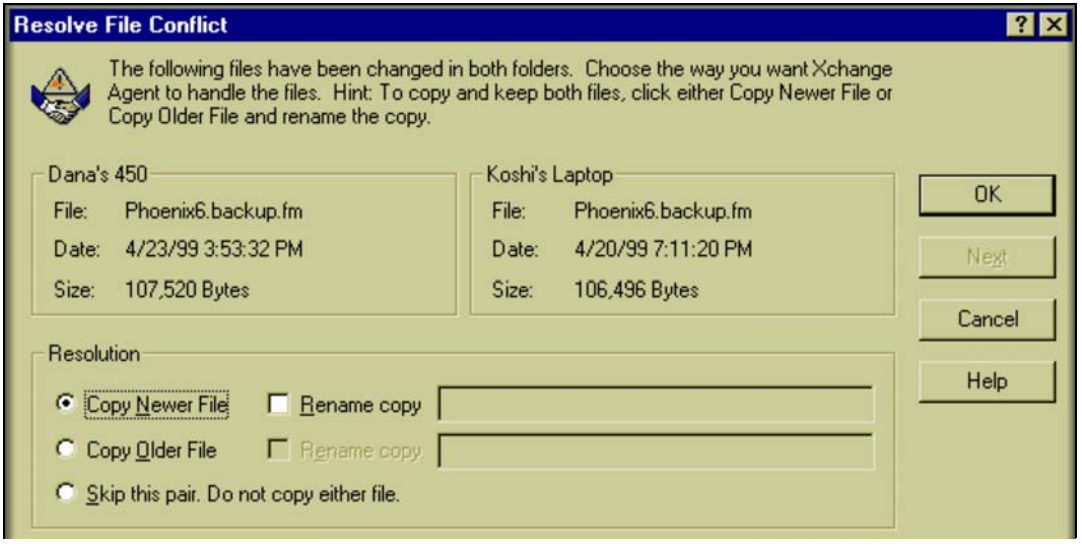
- Double-click the agent's shortcut icon on the desktop. To create a shortcut icon for an open agent, click Create Desktop Shortcut on the File menu.
- Schedule the agent to run at an appointed time. For more information see page 108.
- Run the agent from within LapLink: Click Run Xchange Agent on the SyncTools menu. Then click the name of the agent file and click Open.
- Run an agent you have opened in Xchange Agent: click the Run button on the toolbar.
- In Windows Explorer, double-click the agent file.

Once an agent finishes synchronizing files, the connection with the remote computer is closed. If LapLink was not running to begin with, it is shut down automatically.

NOTE For a record of your latest synchronizations, refer to the LapLink log file: on the Options menu, click Logging.

Dealing with conflicts

When you are keeping folders on two computers in sync, the most common kind of conflict occurs when a file has been modified on both computers since the last time you synchronized. You can handle these conflicts when you preview or run the agent. Or you can set options to handle them automatically.



Conflicts between files

Conflicts occur when you modify a file on both of your computers. Since both files are new, you need to decide how to handle them. These are the choices you can make while previewing or running an Xchange Agent:

- Copy either the older or the newer file to the other folder, replacing the file already in that folder.
- Copy either the older or the newer file to the other folder and give the file a new name. Nothing is replaced.
- Skip the conflict, without copying either file.

When you skip a conflict, you carry it over to future synchronizations. There are now two categories of conflicts:

- **New conflicts** Files have been changed on both computers since the previous synchronization.
- **Old conflicts** Conflicts were left unresolved in earlier synchronizations. The two computers now have different versions of the same file, and both are dated prior to the latest synchronization. You can treat these conflicts like new conflicts, or ignore them and let both versions remain.

Changing how all conflicts are handled By default, each conflict is presented for resolution when you run an Xchange Agent. You can change this so that conflicts are handled automatically.

To change how conflicts are handled by an Xchange Agent:

1 Open the Xchange Agent.

2 On the File menu, click Properties.

3 On the Run Options tab, click this option: Run Unattended, without Preview or Confirmations. Then click either of these options:

- Do Not Copy Either; Keep Both Files
- Copy the Newer File over the Older

Ignoring old conflicts By default, old and new conflicts are treated alike, according to the settings on the Run Options tab in Properties. For example, if you specify that conflicts are to be displayed every time you run an agent, old conflicts will appear every time you run the agent. The alternative is to exclude old conflicts, regardless of how other conflicts are handled.

NOTE To retain both versions of files in old conflicts, click this option on the Advanced tab in Properties: Exclude Previously Skipped Files.

To exclude old conflicts from synchronizations:

1 Open the Xchange Agent.

2 On the File menu, click Properties.

3 On the Advanced tab, click this option: Exclude Previously Skipped Files.

Other conflicts

You may encounter other kinds of conflicts in these situations:

- When you attempt to copy a file or folder with a long name to a drive that does not accept long names.
- When you attempt to synchronize a file with a folder; this happens only when a file and a folder have exactly the same name.

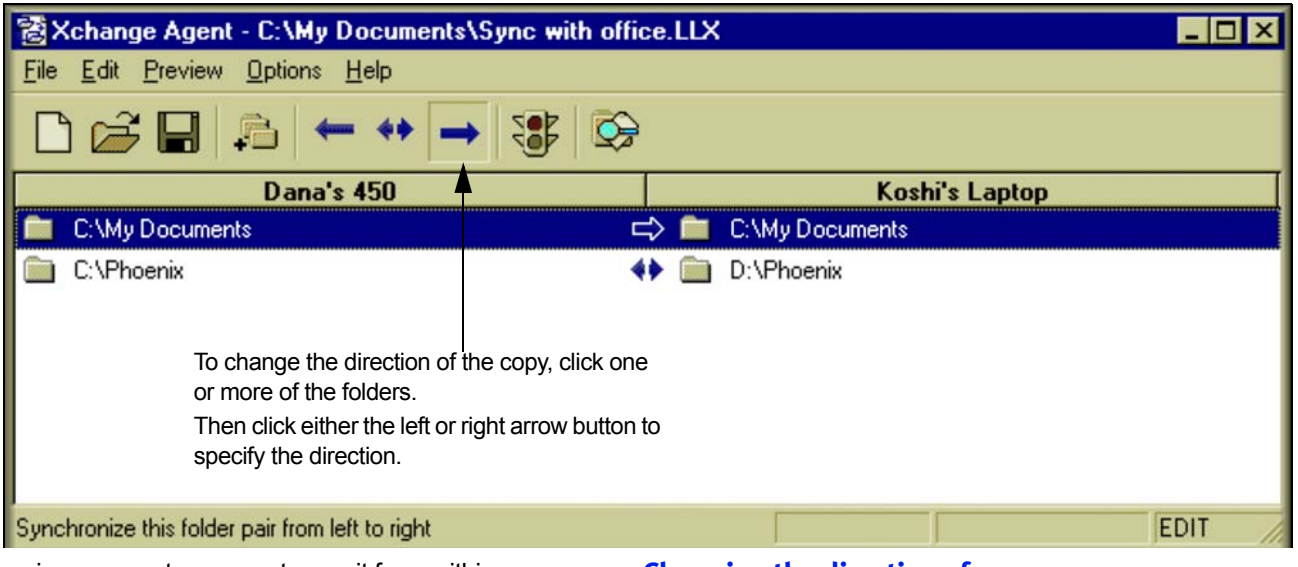
Long name conflicts If you do not shorten long names, you are given this choice when you run an agent: copy the file and give the copy a short name, or skip the conflict without copying the file.

Conflicts between files and folders If you do not rename the file to avoid the conflict, you are given this choice when you run an agent: copy both the file and folder and give the copies new names, or skip the conflict without copying either.

The best way to handle either of these conflicts is to rename files: shorten the long names or rename the file so that it does not conflict with the name of the folder. True synchronization cannot occur otherwise. If you set an agent to run unattended, for example, neither file in a conflict is copied.

Customizing an Xchange Agent

Instead of a two-way synchronization, you can customize an agent so that files within folder pairs are copied in one direction only, from one computer to the other. Among other modifications, you can create a shortcut icon to run an agent directly from the desktop, run an agent without a preview, and limit synchronizations just to the files that already appear on both computers.



To customize an agent, you must open it from within LapLink or Xchange Agent.

To open an agent:

- In LapLink, click Open Xchange Agent on the Sync-Tools menu. Click the agent file and then click Open.
- In Xchange Agent, click Open Xchange Agent on the File menu. Click the agent file and then click Open.

Changing the direction of copy

When you create an Xchange Agent, all folder pairs are set for a two-way exchange of files. Files are copied in both directions, until the folders on both computers are identical.

You can modify this by specifying that files in a folder pair be copied in one direction only, so that only one folder updates the other.

NOTE To customize an agent, you must be in edit mode. If you are previewing, click the Close Preview button on the toolbar.

To change the direction in which files are copied in a folder pair:

1 Click the folder pair.

To change the direction of copy for all folder pairs, click Select All on the Edit menu.

2 Click an arrow button on the toolbar to change the direction of the copy.

Adding folder pairs

To add a pair of folders to an Xchange Agent:

1 Open a connection with the computer with which you are synchronizing.

2 On the Edit menu, click Add Folder Pair.

3 Click one folder for each computer and then click OK.

NOTE To delete a pair of folders, click the pair and click Delete Pair(s) on the Edit menu. Then click Yes. The folders are deleted from the agent, not from the computers.

Changing how an Xchange Agent is run

There are several ways to customize how an agent is run:

- Create a shortcut icon for running an agent from the desktop: on the File menu, click Create Desktop Shortcut.
- Schedule the agent to run at the time you want: on the File menu, click Schedule. For more information see page 108.
- Set up the agent to run unattended: On the File menu, click Properties. On the Run Options tab, click this option: Run Unattended, without Preview or Confirmations. Then determine how conflicts will be handled by clicking either of these options: Copy the Newer File over the Older or Do Not Copy Either; Keep Both Files.

Changing which files are included in synchronizations

By default, subfolders within folder pairs are included in synchronizations. Read-only files are also included, but hidden files and system files are not. To change these settings, click Properties on the File menu. Then click the File Options tab and change the settings as necessary.

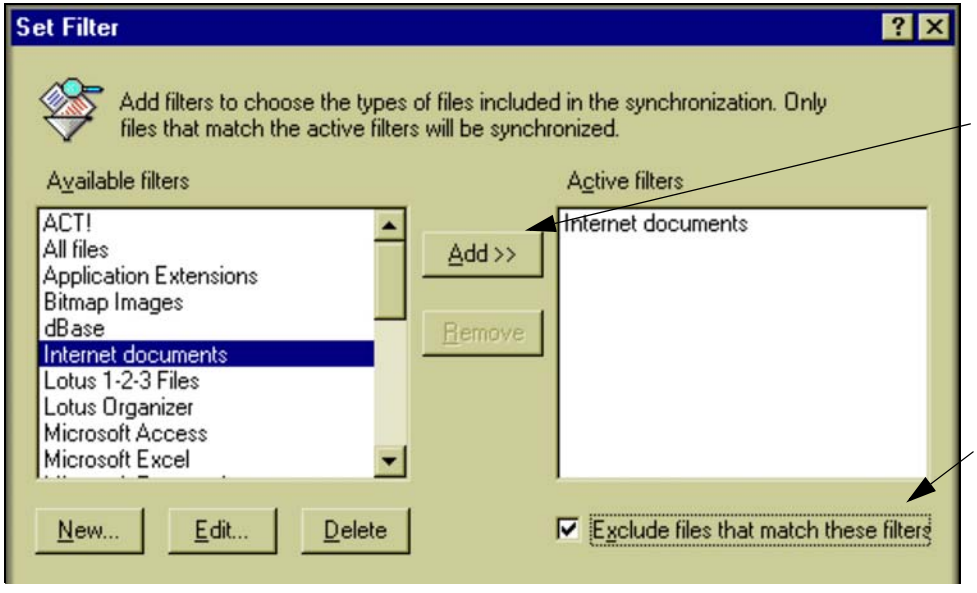
Also on the File Options tab, you can set an option to limit synchronizations by exchanging only files that already appear on both computers. To exclude files that have been added to one computer and not the other, check this box: Include Files Only If They Are Present in Both Folders.

NOTE Filters offer another way of determining which files are included in synchronizations. For more information, see page 106.

TIP Instead of changing the various options every time you create a new agent, you can set default options to apply to any agents you create in the future. These defaults will take effect in new agents unless you specify otherwise in Properties. To change the defaults, click Properties for New Agents on the Options menu.

Using filters to include or exclude files

Using preset filters or filters you create yourself, you can limit synchronizations by including only certain files or types of files. Or you can use the same filters to exclude files and file types.



Click a filter in the list of available filters. Then click the Add button.

By default, filters limit synchronization to files that match the filters.

If you prefer, you can use filters to *exclude* matching files—and synchronize the rest.

Xchange Agent is shipped with filters for some of the most common types of files, including Microsoft Word, Lotus 1-2-3, and dBase. File types are defined by one or more extensions. Word files, for example, are defined by the extensions .DOC and .DOT.

You can also create your own filters for different file types—or for specific files.

You can use filters to synchronize only the files matching the filters. Or you can exclude the files matching the filters and synchronize the rest of the files.

To filter files by type using the preset filters:

1 Click a folder pair, and then click Set Filter on the Edit menu.

To filter all folder pairs, click Select All on the Edit menu.

2 In the list of available filters, click a filter and then click the Add button. Repeat the process to add other filters.

3 To use the filters to exclude—not include—file types, check this box: Exclude Files That Match These Filters.

4 Click OK.

To create and apply your own filter:

1 Click a folder pair and then click Set Filter on the Edit menu.

2 Under the list of available filters, click the New button.

3 In the Filter Name box, type a description for the filter.

4 In the Pattern(s) box, type one or more file extensions or file names, using a semicolon (;) to separate them.

To specify file types, use extensions preceded by asterisks: `*.chp;*.sty` and so on. To specify certain files, type their entire names: `annual.xls;march.xls;april.xls` and so on.

5 Click OK.

Your filter now appears in the list of available filters.

6 Click the filter and then click the Add button.

7 To use the filters to exclude—not include—file types, check this box: Exclude Files That Match These Filters.

To remove the effects of a filter:

1 Click the filter in the list of active filters.

2 Click the Remove button.

Modifying a filter

You can modify any of the filters appearing in the list of available filters. To apply the modifications, you must add the filter to the list of active filters, even if the filter already appears in that list.

To edit and apply a filter:

1 Click the filter in the list of available filters.

2 Click the Edit button.

3 Change the Filter Name or Pattern(s) as necessary and then click OK.

4 In the list of available filters, click the filter then click the Add button.

TIP To delete an available filter, click it and then click the Delete button.

Scheduling an Xchange Agent to run automatically

You can schedule an Xchange Agent to run at a certain time on the days you specify. Scheduled agents run unattended: there is no preview, and conflicts are handled automatically. To schedule an agent, open it from within LapLink or Xchange Agent. To run the agent on schedule, simply leave your scheduler running.

You can schedule an Xchange Agent to run unattended.

When the scheduled time comes, LapLink starts, the connection is opened, files are synchronized, the connection is closed, and LapLink shuts down.

You can set up an Xchange Agent to run at a particular time on one of these schedules:

- Just once, on a particular date (such as June 27, 2000)
- Every day
- On certain days of the week (such as Monday and Friday)
- Once a month on a particular day (such as the first day of each month)

LapLink does not have to be running for an agent to run as scheduled. When the scheduled time comes, LapLink starts, the connection is opened, files are synchronized, the connection is closed, and LapLink shuts down.

LapLink prepares an Xchange Agent to run on schedule by setting it up in a scheduler program running in Windows. If you have either of the following scheduler programs, it is used to run scheduled Xchange Agents:

- The System Agent program included in the Microsoft Plus! Companion for Windows 95
- The Task Scheduler program included in Windows 98 and Microsoft Internet Explorer 4.0

Otherwise, the LapLink Scheduler program (installed with LapLink) is used. The LapLink Scheduler icon appears at the right end of the Windows taskbar.

NOTE Xchange Agents can't be scheduled using the Task Scheduler in Windows NT 4.0.

To schedule an Xchange Agent:

1 From within LapLink or Xchange Agent, open the agent.

2 On the File menu, click Schedule.

The Schedule wizard begins.

3 Give a name to the schedule file.

4 Fill out the schedule by specifying the time and frequency.

TIP Once you have scheduled an Xchange Agent in LapLink, you should modify it in your scheduler program, **not** in LapLink.

TIP To create another schedule for the same agent repeat the above procedure and assign a different name to the schedule file.

To run a scheduled agent:

- Leave your Windows operating system and your scheduler running.

Running an agent unattended

A scheduled agent runs without preview, even if you have specified preview on the Run Options tab of Properties.

When conflicts are encountered, they are ignored; neither file is copied. If you prefer to have the newer file in each conflict copied over the older one, click Properties on the File menu. On the Run Options tab, click this option: Run Unattended, without Preview or Confirmations. Then click this option: Copy the Newer File over the Older.[1]

TIP To ensure that an agent runs and synchronizes as scheduled, create an entry in Address Book. Include the log-in name and password required by the remote computer to open the connection.

1 For more information about resolving conflicts, see page 102.

7 Using Print Redirection

Using Print Redirection—Overview

There are two ways to print over a LapLink connection. While controlling a remote computer, print from that computer directly to your local printer. Or reverse direction and print directly from your local computer to a remote printer. Either way, you use Print Redirection to send a document over LapLink to be printed at the opposite end of the connection.

Once you have opened a LapLink connection, you can use Print Redirection to send a document from the computer at either end of the connection to a printer at the other end.

There are two ways to use Print Redirection over a LapLink connection:

- **Print from remote to local** While using Remote Control to view and operate another computer, you can send a document from that computer to a printer at your location. For example, you can prepare a document on your office computer from home and print the document on your home printer.
- **Print from local to remote** When connected to another LapLink computer, you can print a document from your computer to a printer at the remote location. For example, after working on a report at home or on the road, you can connect to your office computer and print the report to a high-quality laser printer in your office.

  Without Print Redirection, you'd have to transfer the document to the other computer and then use Remote Control to run a program on the remote computer and print the document.

Printing a document over a LapLink connection is much like printing it on a local printer: In the program in which you have prepared the document, choose the standard Print command. Normally you would then choose a printer close at hand. In Print Redirection, however, you choose a printer at the opposite end of the connection from the document.[1]

When printing from remote to local, use Remote Control to choose Print on the remote computer; then choose a printer attached to your local computer.

When printing from local to remote, choose Print on your local computer; then choose a printer attached to the computer at the other end of the LapLink connection.

Preparing for Print Redirection

To print documents from a computer to a printer at the other end of a LapLink connection, you need to set up the destination printer on that computer. If you want to print reports on the office printer while at home, for example, set up the office printer on your home computer.[2]

1 For detailed instructions on printing over a LapLink connection, see page 114.

2 For detailed instructions on setting up a printer for Print Redirection, see page 116.

You can set up a printer for Print Redirection during LapLink Setup or afterward, using Print Redirection options in LapLink.

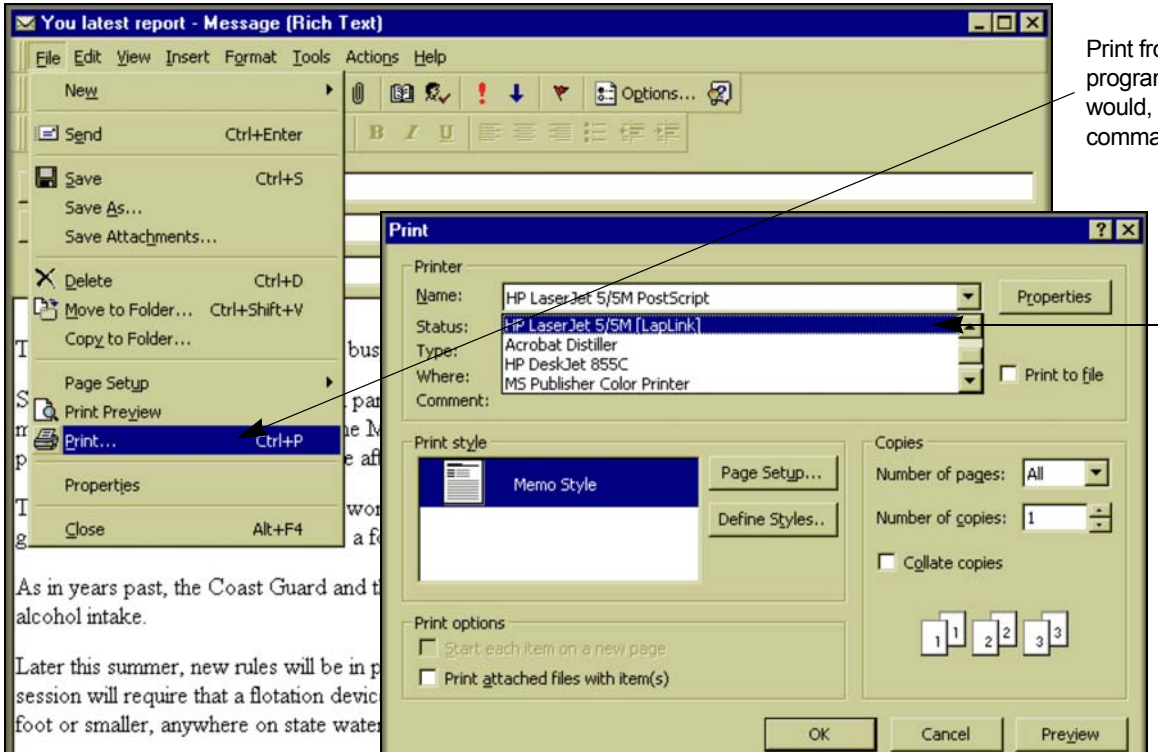
Requirements for Print Redirection

There are two requirements for using Print Redirection:

- You must connect to another version of LapLink that supports Print Redirection.
- The default security setup on the other computer must be changed to allow Print Redirection.

Printing over a LapLink connection

To print over a LapLink connection, choose the standard Print command in any Windows program and then choose a printer set up especially to receive print jobs from remote computers. The document then travels over the LapLink connection to a printer at the other end.



Print from a Windows program as you normally would, using the Print command.

Then choose the printer you set up for Print Redirection.

Printing over a LapLink connection is much like printing to a local printer. You simply choose a different printer—one that has been installed especially to print over LapLink.

When printing from remote to local, choose a local printer from the remote computer using Remote Control. When printing from local to remote, choose a remote printer from the local computer.

To print a document over a LapLink connection:

1 Open a LapLink connection to the remote computer.
   - To print from remote to local, include Remote Control in the services you open.
   - To print from local to remote, open Print Redirection or any of the other services.
2 Open a word processor, spreadsheet, or other program and prepare the document for printing.
3 Use the standard Print command for your program and choose the printer you set up just for Print Redirection. (It is typically a printer with [LapLink] at the end of its name.)

The Print Redirection icon on the LapLink status bar animates as the document is sent over a LapLink connection to the destination printer.

When the animation stops, the document has arrived at the other computer. You can then close LapLink if you want.

TIP You can monitor the status of the printing document after it's been sent over a LapLink connection. On the computer to which the printer is attached, click the Windows Start button, point to Settings, and click Printers. Then double-click the printer icon.

NOTE You can use Print Redirection over a LapLink connection even when it is not one of the services currently open. Print Redirection becomes available on demand.

Choosing among several printers

Normally, Print Redirection sends documents to the printer that has been set up as the default printer on the connected computer. If you send a print job from home to the office, for example, the printer designated as the default on the office computer automatically gets the job. (If there is only one printer set up on a computer, that printer is always used.)

If you want to use a printer other than the default, you need to set up LapLink to prompt you with a list of available printers whenever you print. Change this setting on the computer the printers are attached to, *not* the computer with the document.

TIP If you're not in front of that computer, you can still change this setting by remote controlling the computer.

To set up LapLink to prompt with a list of printers:

1 On the computer the printers are attached to, click Print Redirection Options on the Options menu.
2 Click Prompt with a List of Available Printers.

Whenever you send a document to that computer to be printed, you are prompted with a list of all the printers set up on that computer.

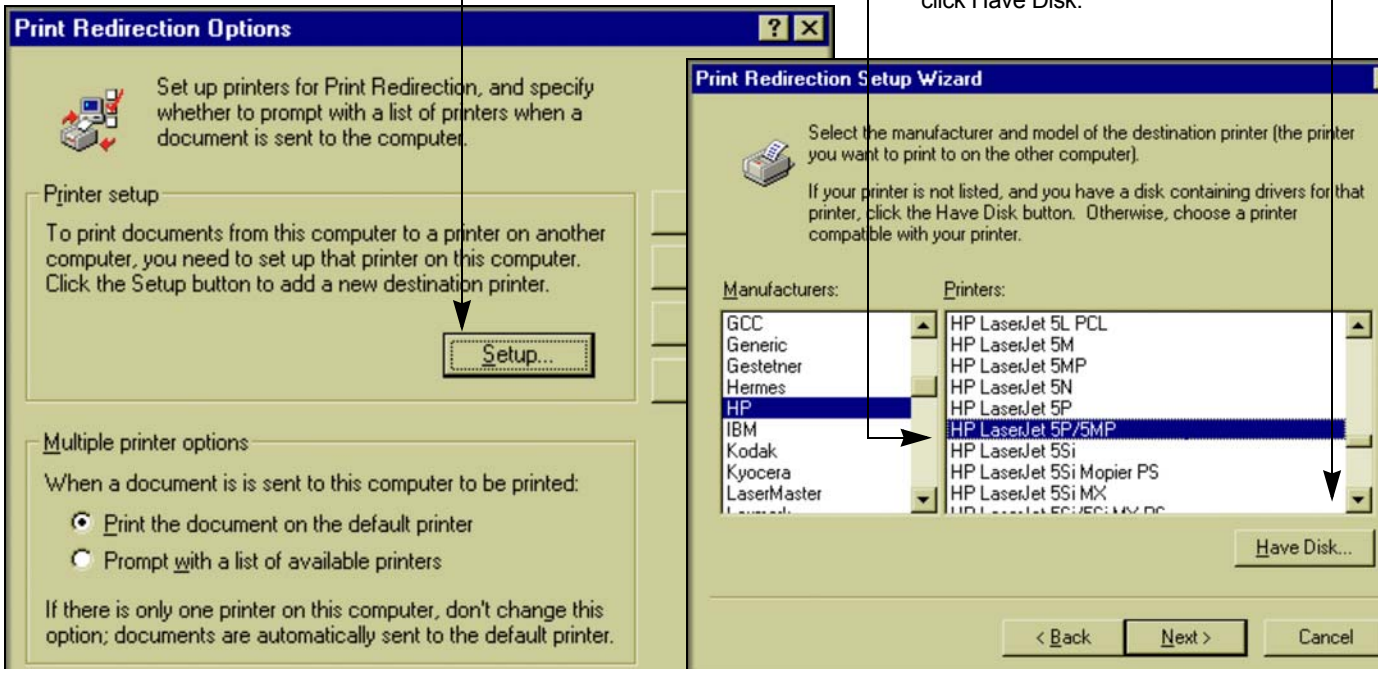
Setting up printers for Print Redirection

To print documents from a computer to a printer at the other end of a LapLink connection, you need to set up the destination printer on that computer. If you do not set it up while installing LapLink, you can set it up using the Print Redirection Options in LapLink. For best results set up a printer identical to the one you will be printing to, at the other end of the connection.

To set up a new printer, click the Setup button in the Print Redirection Options dialog box.

Choose the printer from the list.

If your printer arrived with a setup disk, click Have Disk.



Before you can use Print Redirection, you need to add a printer for Print Redirection to the computer you'll be printing from (the location where your documents are kept).

For example, if you're remote controlling your office computer and want to print a document on that computer to your printer at home, you need to set up your home printer on the office computer.

If you want to print a document on your home computer to a high-quality printer at your office, you need to set up that printer on your home computer.

The printer you set up for Print Redirection should match the printer you'll be printing to at the other end of the connection. Although it is possible to use a compatible printer, the results you get when printing might not be as good.

Setting up a printer

You can set up a printer during LapLink Setup or from within LapLink after installation. You will probably need your Windows CD-ROM or the disk that accompanied your printer.

To set up a printer from within LapLink:

1 On the Options menu, click Print Redirection Options.

2 Click the Setup button to start the Print Redirection Setup wizard.

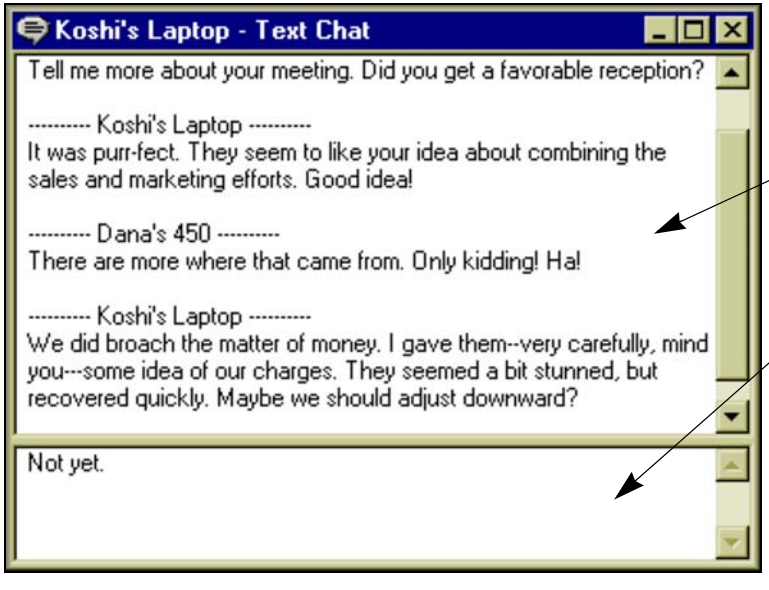
3 Follow the instructions in the wizard.

Once the printer is set up, you can print to it, and your document is sent over your LapLink connection. In order to print, LapLink must be running and connected to the computer you want to print to.

8 Using Text Chat and Voice Chat

Exchanging typed messages using Text Chat

Text Chat lets you exchange typed messages with a person sitting at a remote computer. Used with a service like Remote Control or File Transfer or by itself, Text Chat is useful for exchanging brief messages and sending instructions. However, if you have a microphone, sound card, and speakers, you can use Voice Chat instead.



Opening a Text Chat window

When you connected to the remote computer, you may have opened a Text Chat window. If not, you can open one after you open the connection.

To open a Text Chat window:

- Click the Open Text Chat button on the Shortcut bar. Or click Open Text Chat on the Window menu.

TIP If you have opened more than one connection, click a window for the desired connection *before* opening Text Chat.

Sending messages

A Text Chat window is divided into two parts:

- The upper part displays the messages you have sent to the remote user as well as those the remote user has

sent to you. Each message is identified by the name of the computer from which it was sent.

- The lower part serves as a note pad on which you write your messages. It clears each time you send a message.

NOTE A Text Chat window pops to the foreground on your screen whenever the remote user sends a message. To keep the Text Chat window from activating automatically, click Text Chat Options on the Options menu. Then clear this option: Restore Text Chat Window Automatically.

To send a message to the remote user:

1 Click the Text Chat window.

2 Type your message.

Avoid pressing ENTER until your message is complete. To start a new paragraph, press CTRL+ENTER.

3 Press ENTER to send the message.

Pasting text into your Text Chat window

Instead of typing messages while connected, you can prepare them ahead of time and paste them into the Text Chat window as necessary.

To paste text into a Text Chat window:

1 In Notepad or another Windows text editor, select the text and copy it.

2 In LapLink, click the lower part of the Text Chat window.

3 On the Edit menu, click Paste.

NOTE To reverse your latest editing action in the lower part of a Text Chat window, click Undo on the Edit menu.

Copying text from your Text Chat window

You can copy part or all of a Text Chat conversation and paste it into another Windows program.

To copy your Text Chat conversation:

1 In the upper part of the Text Chat window, highlight part of the text, or select the entire conversation by clicking Select All on the Edit menu.

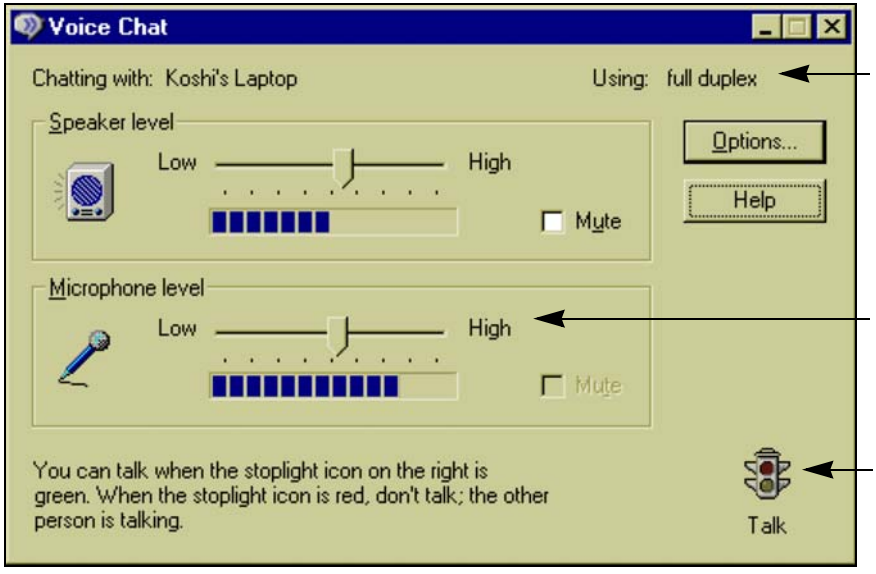
2 On the Edit menu, click Copy.

3 Switch to another Windows program, and paste the text into that program.

TIP As a guest during Remote Control, you can carry on a Text Chat conversation with the host only by viewing the host screen in a window. (In full-screen view, you cannot see your own Text Chat window.) To arrange the Text Chat window beside the Remote Control window, click Tile Side by Side on the Window menu.

Talking to someone using Voice Chat

Voice Chat lets you speak with a person at the other end of a LapLink connection, using the same line that transfers data between the two computers. Both computers must be configured for full duplex if you are to talk as you would on the telephone. If either computer is configured for half duplex, you must wait for the other person to stop talking before you begin.



How you talk to the other person in Voice Chat depends on whether the current conversation is using half duplex or full duplex.

You can adjust the volume of the speaker and microphone or mute them entirely.

When you're using half duplex, watch the icon to determine when to talk and when to listen.

Use Voice Chat to talk to someone you're connected to over LapLink while using other LapLink services like File Transfer and Remote Control. To use Voice Chat, you must have a computer that is capable of recording and playing sound.

You may have started Voice Chat when you connected to the remote computer. If not, you can start it *after* you open the connection.

Starting Voice Chat

To start Voice Chat:

1 Click the Open Voice Chat button on the Shortcut bar. Or click Open Voice Chat on the Window menu.

2 The person on the other end of the connection is "called" and asked whether he or she wants to talk with you.

If the Voice Chat connection is accepted, a Voice Chat window opens, and you can begin talking to the other person.

TIP If you have opened more than one connection, click a window for the desired connection *before* starting Voice Chat.

Talking in Voice Chat

To use Voice Chat, you speak into the microphone and listen through headphones or speakers. If the other person can't hear you very well, increase the microphone level in the Voice Chat window. If the other person's voice is too loud or too soft, change the speaker level.

NOTE Although there are other volume/level controls in Windows, it is recommended that you use the ones in LapLink for best results.

Depending on the configuration of the sound card in both computers, you may be able to talk as you would on a telephone; that is, your voice and the voice of the other user can be transmitted simultaneously. This is known as full duplex.

If you and the other user are not using full duplex, you must talk as you would on a walkie-talkie; that is, you must wait for the other person to finish before you begin. The transmission of just one voice at a time is known as half duplex.

Voice Chat conversations are always half duplex unless both sound cards are configured for full duplex. The indicator at the top of the Voice Chat window shows whether your current conversation is half duplex or full duplex.

Voice Chat provides an alternate method you can use to talk using Voice Chat, known as Manual mode; see page 126.

Talking using half duplex

When you are having a half-duplex conversation, refer to the stoplight icon in the lower right corner of the Voice Chat window to know when you can talk. When the light is green or the text says "Talk," you can talk. When the light is red or the text says "Don't Talk," you should wait until the other person has finished talking.

TIP Saying "over" when you are finished talking may help facilitate conversation.

Notice that the stoplight icon is also available on the LapLink status bar, so you can minimize the Voice Chat window and continue talking.

Configuring your sound card for full duplex

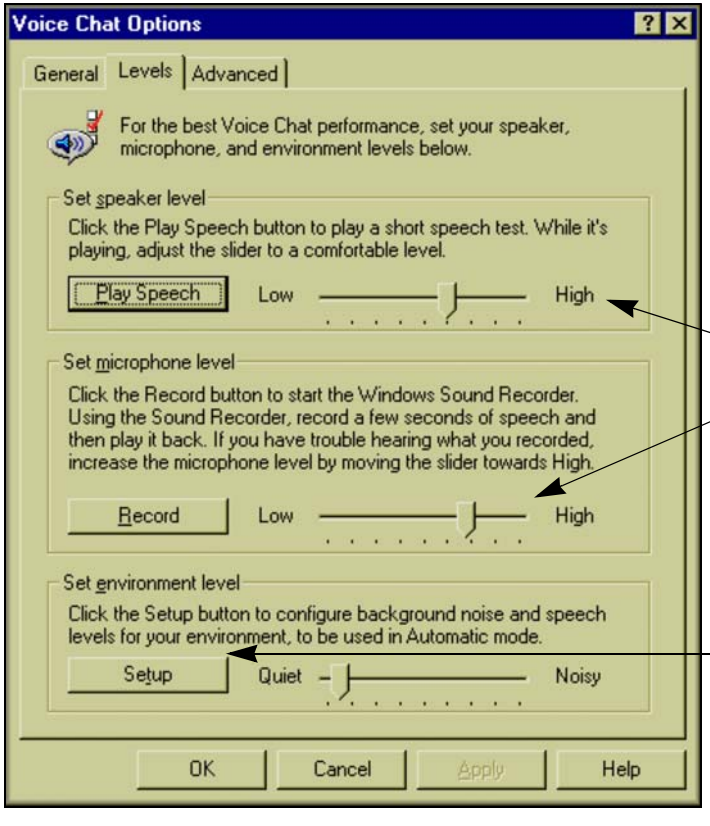
Some sound cards can be reconfigured for full duplex merely by adding new sound card driver software to your computer. Contact your sound card manufacturer to find out whether your sound card is capable of full duplex and to obtain sound card driver software. Sound card drivers can often be found on the manufacturer's Web site.

Remember that the sound card of the person you're talking to also has to be configured as full duplex in order for you to talk in full duplex.

NOTE Over slower connections, you may not be able to use full duplex, because of the lower bandwidth of the connection.

Improving Voice Chat performance

To improve Voice Chat performance, click the Levels tab in the Voice Chat Options dialog box, and then configure the microphone and speaker levels and specify information about your environment.



Use the Levels tab of the Voice Chat Options dialog box to configure your speaker, microphone, and environment levels.

For the speaker and microphone levels, click the button, and then adjust the sliders to the desired level.

For the environment level, click the Setup button and follow the instructions.

If you have already used a program that records and plays sound in Windows, you probably do not have to change settings for your speakers and microphone before using Voice Chat. (For exceptions, see online help.)

However, Voice Chat lets you change settings for your speaker, microphone, and environment to improve performance in Voice Chat. It is recommended that you do this once, preferably before you start using Voice Chat.

Setting levels in Voice Chat

The Levels tab on the Voice Chat Options dialog box lets you perform recording and playback tests and measure other speech qualities. Use the Levels tab when you're *not* using Voice Chat.

To configure levels in Voice Chat:

1 On the Options menu, click Voice Chat Options.

2 Click the Levels tab.

3 Under Set Speaker Level, click the Play Speech button.

TIP Some sound cards do not allow these settings to be changed using software; in this case, the sliders won't be available.

4 While listening to the speech, move the Speaker Level slider to a comfortable level.

If you cannot hear the speech, move the slider towards High. If the speech is too loud, move the slider towards Low.

5 Under Set Microphone Level, click the Record button. The Windows Sound Recorder opens.

TIP If the Sound Recorder is not available, adjust this option while you are using Voice Chat, instead.

6 Use the Sound Recorder to record and play back a few seconds of speech.

7 If you could not hear what you recorded, move the Microphone Level slider towards High, and try using the Sound Recorder again.

8 Under Set Environment Level, click the Setup button. The Environment Setup wizard begins, and you're asked to record a few seconds of background noise and a few seconds of speech.

Setting the environment level helps avoid transmitting sound that is not speech. It is recommended that you use the Setup button, and not the slider, to adjust this level.

Improving quality over a fast connection

Voice Chat works best over a fast connection. If you use Voice Chat over a network or other fast connection, you might be able to improve the Voice Chat sound quality.

To improve Voice Chat performance over a fast connection:

1 On the Options menu, click Voice Chat Options.

2 On the Advanced tab, change Transmission Quality to Medium or High.

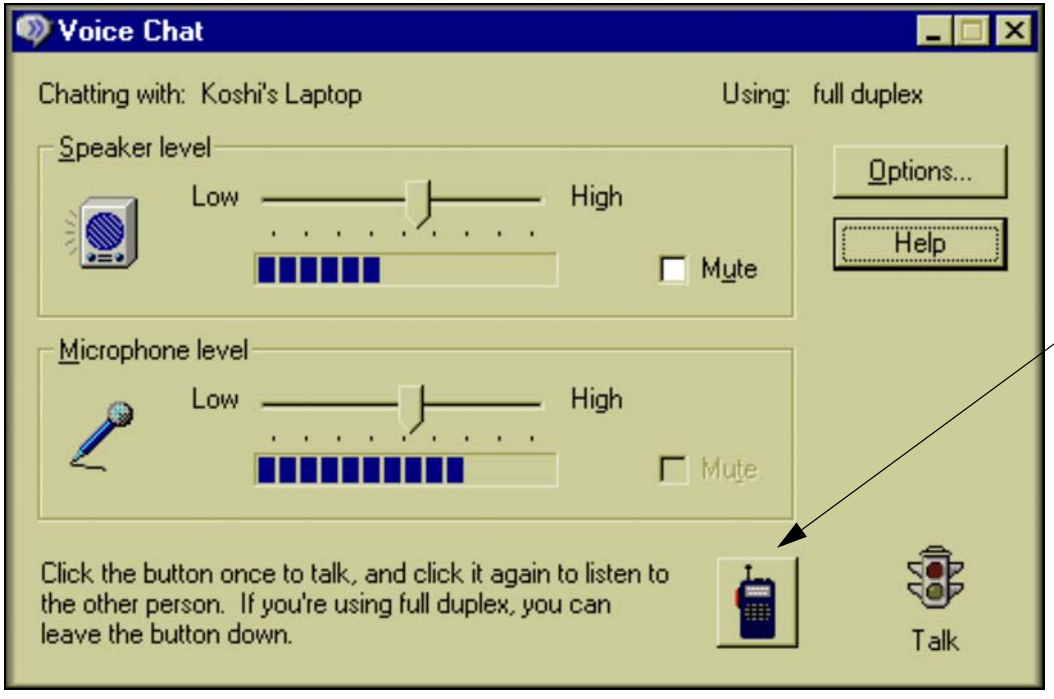
Be sure to reset this option to Low when you use a modem or other slow connection.

CAUTION When you have a slow connection, using Medium or High may cause problems with your connection.

It is recommended that you set up your environment level every time you change the transmission quality.

Using Manual conversation mode

Use Voice Chat's Manual conversation mode if you're having problems using Voice Chat or you want additional control over when speech is sent over the connection. Manual mode requires that you press a button in order to talk.



In Manual mode, click the walkie-talkie button in order to talk.

If you are using full duplex, you can leave the button down and still hear the other person. If you are using half duplex, you must release the button to hear the other person.

Voice Chat has two conversation modes: Automatic and Manual.

- Automatic is the normal conversation mode, and allows hands-free operation of Voice Chat. Automatic mode sends speech whenever you talk.
- Manual mode requires you to click a button in order to talk.

In most cases, Automatic mode is recommended.

Use Manual mode if you're having problems using Automatic mode, or if your sound card does not support Automatic mode. If your work environment is very noisy, you might have problems using Automatic mode. You can also use Manual mode to control exactly when speech is sent to the other person.

To change to Manual conversation mode:

1 On the Options menu, click Voice Chat Options.

2 On the Advanced tab, click Manual Mode.

3 Click OK.

The next time you use Voice Chat, the window includes a walkie-talkie button that you use to talk.

. . . Using Manual conversation mode

Talking in Manual mode

Manual mode works differently depending on whether your conversation is full duplex or half duplex.

- When using half duplex, you click the walkie-talkie button once in order to talk. While you're talking, the other person cannot talk to you (he or she sees a "Don't Talk" icon) until you click the button again to release it. The other person can then talk.
- When using full duplex, you also click the walkie-talkie button once in order to talk, but you don't need to release it to allow the other person to talk, since in full duplex, you can both talk at the same time.

  Therefore, you can just leave the button down until you and the other person are finished talking, since the other person can talk to you when your button is pressed.

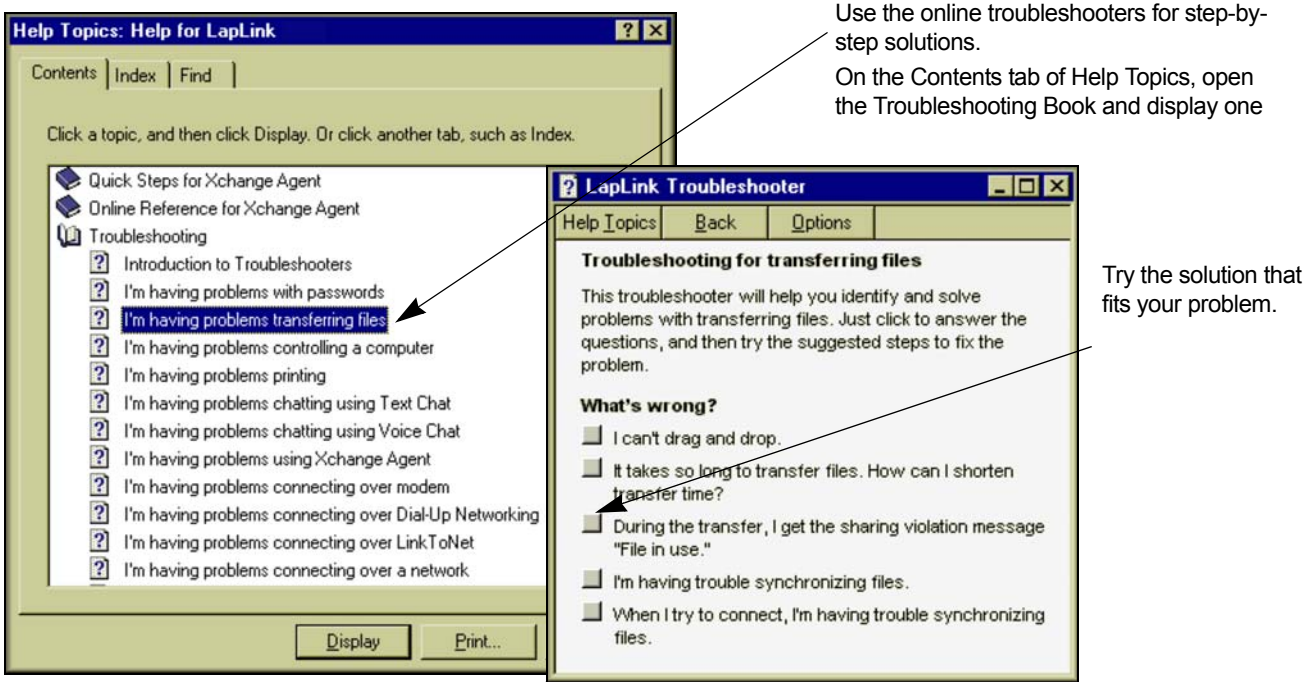
9 Troubleshooting

Introduction to troubleshooting

This chapter provides checklists for solving problems and improving performance. These checklists are designed as a quick overview of possible solutions, with enough information to guide experienced users to solutions.

For detailed, step-by-step information, consult the troubleshooters in online Help. The troubleshooters are designed to solve problems you may encounter in opening connections and using the services once you have opened connections.

To use an online troubleshooter, open the Troubleshooting book in Help Topics and display one of the topics. Then answer the questions about your problem and try the suggested remedies. In some cases you will find shortcut buttons to dialog boxes; use these buttons to resolve the problem faster.



Checklist for modem connections

Allow incoming connections by changing passwords in your Log-in List (upgrades only)

Passwords in LapLink Gold are case-sensitive; passwords in versions earlier than LapLink 2000[1] are not. If you have upgraded, you may have to change passwords in your Log-in List:

- To allow incoming connections from earlier LapLink versions, retype their passwords in ALL CAPITAL LETTERS.
- To allow incoming connections from other computers that have upgraded to LapLink Gold, assign them new passwords.

Enable connections to other computers by changing passwords in your Address Book (upgrades only)

Passwords in LapLink Gold are case-sensitive; passwords in versions earlier than LapLink 2000 are not. If you have upgraded, you may have to change passwords in your Address Book:

- If your Address Book has entries for computers running earlier LapLink versions, retype the passwords in ALL CAPITAL LETTERS.
- If your Address Book has entries for other computers that have upgraded, have new passwords assigned on those computers and change your Address Book.

Run LapLink on both computers

No connections are possible by modem or any other means unless LapLink is running on both computers. You can connect to a computer running LapLink Gold or another Windows-based version of LapLink.

In Windows 95 and Windows 98 use your Windows modem for LapLink connections and enable its port

In Windows 95 and Windows 98 it's a good idea to specify the modem you've already set up in Windows as the modem to use in LapLink, too. (In Windows NT, there is no alternative to using the Windows modem.) In LapLink, click Port Setup (Options menu), click Windows Modems, and then check the Enable Port box.

If you have trouble communicating using the Windows modem, use Port Setup to enable the COM port to which the modem is attached.

Ensure that the modem can answer a call

A modem cannot answer an incoming call unless the Auto Answer option is on. In Port Setup (Options menu), click Windows Modems. Click Configure, and then verify that Enabled under Auto Answer is checked.

Make sure the modem port is not already in use

LapLink cannot use a modem as long as the modem port is being used by another program. Either close the program or wait until it releases the port.

Check the settings for a Windows modem

If your modem does not answer calls or dial after you have enabled it as a Windows modem in LapLink, exit LapLink, and make sure the modem is turned on. In the Windows Control Panel, double-click Modems, click the Diagnostics tab, and click the appropriate port. Click More Info. If the test fails, click the General tab, and remove the modem. Shut

1 Versions before LapLink 2000 include LapLink Pro, LapLink Tech, and LapLink 7.5 or earlier.

down the computer and then restart it. Return to Modems in the Control Panel and reinstall the modem.

Disable error control and data compression on both computers

Some modems communicate better if error control and data compression are disabled on both computers. In Port Setup (Options menu), click Windows Modems, Configure, and then Properties. On the Connection tab, click Advanced. Then clear Use Error Control. Repeat this procedure on the other computer.

Set a longer timeout value

If the computer you are dialing takes a long time to answer and complete the connection, try increasing its modem timeout. In Port Setup (Options menu), click Windows Modems. Click Configure and then Properties. On the Connection tab, type a larger number in this box: Cancel the Call If Not Connected Within.

Lower the modem speed on the computer opening the connection

In Port Setup (Options menu), click Windows Modems. Click Configure and then Properties. On the General tab, click a lower speed in the Maximum Speed box.

Check the security setup on the remote computer

If you are denied the use of Remote Control or one of the other services while connected to another computer, check the security setup on that computer. You can gain access to services through Security (Options menu).

NOTE To let other computers connect to your computer by modem, you must change the security setup established during installation.

Disable call waiting

Ensure that the call waiting feature is disabled on the telephone systems at both ends of the connection. Call waiting interferes with modem connections when incoming calls are detected.

Try using Dialing Properties to simplify the dialing process

When you use a Windows modem, try using the Dialing Properties feature in connection with Address Book. It simplifies the process of accessing outside lines, making long-distance and international calls, and using a calling card.

With the proliferation of area codes, however, you may find that some numbers may not be dialed correctly, as when you make a local call to another area code or a long-distance call within the same area code. In this case, edit your Address Book entry for that number so that the Use Country Code and Area Code box is cleared. In the Telephone Number box, type the number exactly as it is to be dialed. Include the number for outside access, country code, area code, and “1” for long-distance, as required. (When you travel, you may have to edit this data to reflect your current location.)

Disable other programs that use COM ports while running LapLink

You may experience problems if you use LapLink to connect by modem while running any other programs that monitor serial (COM) ports; modem and fax programs typically monitor serial ports for incoming calls or faxes and may cause a modem to disconnect unexpectedly. Disable such programs while using LapLink.

Checklist for Dial-Up Networking connections

Allow incoming connections by changing passwords in your Log-in List (upgrades only)

Passwords in LapLink Gold are case-sensitive; passwords in versions earlier than LapLink 2000[1] are not. If you have upgraded, you may have to change passwords in your Log-in List:

- To allow incoming connections from earlier LapLink versions, retype their passwords in ALL CAPITAL LETTERS.
- To allow incoming connections from other computers that have upgraded to LapLink Gold, assign them new passwords.

Enable connections to other computers by changing passwords in your Address Book (upgrades only)

Passwords in LapLink Gold are case-sensitive; passwords in versions earlier than LapLink 2000* are not. If you have upgraded, you may have to change passwords in your Address Book:

- If your Address Book has entries for computers running earlier LapLink versions, retype the passwords in ALL CAPITAL LETTERS.
- If your Address Book has entries for other computers that have upgraded, have new passwords assigned on those computers and change your Address Book accordingly.

Ensure that Dial-Up Networking is installed

You can connect over Dial-Up Networking only if Microsoft Dial-Up Networking has been installed. Dial-Up Networking should already be installed in Windows NT. In Windows 95 or Windows 98, you can install this feature from your Windows CD-ROM as follows: In the Windows Control Panel, double-click Add/Remove Programs. Click the Windows Setup tab, and double-click Communications. If Dial-Up Networking is checked, it is installed. If it is not checked, click Dial-Up Networking, and then click OK to begin installation.

NOTE For more information about Microsoft Dial-Up Networking, consult Windows Help.

Once connected using Dial-Up Networking, connect to the network

When you connect over Dial-Up Networking in LapLink, you dial in to a remote access server and connect to a network. Then you make LapLink connections in the Connect over LAN (Network) dialog box. Unless you specify otherwise, the list of available LapLink connections appears automatically as soon as you are connected to the network. If the list of connections does not appear automatically, click the Connect Over button on the LinkBar and then click Network.

TIP To connect to another LapLink computer once a Dial-Up Networking connection is established, make sure that this box is checked in the Connect over Dial-Up Networking

1 Versions before LapLink 2000 include LapLink Pro, LapLink Tech, and LapLink 7.5 or earlier.

Ensure that your computer is set up for network connections

Making connections to other LapLink computers through Dial-Up Networking requires that your computer meet the requirements for network connections in LapLink: a network protocol must be installed, your network ports must be enabled in LapLink, and so on. For more information about network connections, see page 135.

NOTE To let other computers connect to your computer through Dial-Up Networking, you must change the security setup established during installation.

Run LapLink on both computers

No connections are possible by Dial-Up Networking or any other means unless LapLink is running on both computers. You can connect to a computer running LapLink Gold or another Windows-based version of LapLink. Verify that the computer has a network port enabled for the same kind of network connection as your network port.

Try using Dialing Properties to simplify the dialing process

When you use a Windows modem, try using the Dialing Properties feature in connection with Address Book. It simplifies the process of accessing outside lines, making long-distance and international calls, and using a calling card.

With the proliferation of area codes, however, you may find that some numbers may not be dialed correctly, as when you make a local call to another area code or a long-distance call within the same area code. In this case, edit your Address Book entry for that number so that the Use Country Code and Area Code box is cleared. In the Telephone Number box, type the number exactly as it is to be dialed. Include the number for outside access, country code, area code, and “1” for long-distance, as required. (When you travel, you may have to edit this data to reflect your current location.)

Disable other programs that use serial (COM) ports while running LapLink

You may experience problems if you use LapLink to connect by modem while running any other programs that monitor serial (COM) ports; modem and fax programs typically monitor serial ports for incoming calls or faxes and may cause a modem to disconnect unexpectedly. Disable such programs while using LapLink.

Disconnect a Dial-Up Networking connection manually

When connecting by modem, you can instruct LapLink to break a connection after a specified number of minutes in which there is no activity at either end of the connection: Click Connect Options (Options menu). On the Disconnect tab, check the Disconnect Inactive Connections box, and type the number of minutes below.

In most cases, the connection is completely broken after the specified period. With Dial-Up Networking connections, however, you must complete the process: click Disconnect (Connect menu) and then click Disconnect All.

Checklist for network connections

Allow incoming connections by changing passwords in your Log-in List (upgrades only)

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Passwords in LapLink Gold are case-sensitive; passwords in versions earlier than LapLink 2000* are not. If you have upgraded, you may have to change passwords in your Address Book:

- If your Address Book has entries for computers running earlier LapLink versions, retype the passwords in ALL CAPITAL LETTERS.
- If your Address Book has entries for other computers that have upgraded, have new passwords assigned on those computers and change your Address Book accordingly.

1 Versions before LapLink 2000 include LapLink Pro, LapLink Tech, and LapLink 7.5 or earlier.

Enable the network port for LapLink connections

Access to a network by e-mail and other programs does not automatically provide network access in LapLink. To connect by network in LapLink, your network port must be enabled—that is, made available for use in LapLink. To enable a network port in LapLink, click Port Setup (Options menu). Click the type of network—either IPX or TCP/IP—in the Ports list. Then check the Enable Port box. If the network is IPX, click Configure, and ensure that Internetwork Name Broadcast is checked.

Run LapLink on both computers

No connections are possible by network or any other means unless LapLink is running on both computers. You can connect to a computer running LapLink Gold or another Windows-based version of LapLink. Verify that the computer has a network port enabled for the same kind of network connection as your network port.

Refresh the list of connections

If LapLink was started on the other computer after you started connecting, you may need to refresh the list of available connections in order to include the computer in the list. Click the Refresh List button, and wait while the list of LapLink computers is updated.

Ensure that the network is installed

LapLink cannot connect by network unless a network protocol—either IPX or TCP/IP—is installed. Network protocols are installed using the Networks option in the Windows Control Panel. See your Windows Help and documentation for information on adding network protocols.

Type the TCP/IP name or address

If you do not see a computer listed as an available connection over a TCP/IP network, you may have to type the computer's IP name or address. Click the Connect Over button on the LinkBar, and then click Network. On the TCP/IP Addresses tab, type the IP address or the Windows computer name in the TCP/IP Name or Address box. (This name may differ from the name assigned to the computer in LapLink.)

TIP To determine the TCP/IP address for a Windows 95 or Windows 98 computer, click Port Setup (Options menu); click TCP/IP in the Ports list; and then click Configure. The computer's address appears in the IP Address box.

TIP To determine the TCP/IP address for a Windows NT computer, click the Start button, point to Programs, and click Command Prompt. Then type **IPCONFIG** and press ENTER. The address appears on the IP Address line.

TIP If you cannot connect after typing a TCP/IP address, click the Start button, point to Programs, and click MS-DOS Prompt. Then type **PING** followed by a space and the address you are trying to reach. Press ENTER. If you do not receive a positive reply, the address is not available, and you cannot connect.

Check the security setup of the remote computer

If you are denied the use of Remote Control or one of the other services while connected to another computer, check the security setup on that computer. You can gain access to services through Security (Options menu).

IPX connections: change the type of frame on both computers

Some IPX connections work better if the frame type for the IPX connection is preset rather than selected automatically; try setting the frame type to Ethernet 802.2 or Ethernet 802.3. This setting should be changed on both computers making a LapLink connection. Network protocols are installed using the Networks option in the Windows Control Panel. See Windows Help and documentation for information on changing the frame type.

Checklist for Internet connections

The computer you want to connect to must have its Internet address published by an ILS (Internet locator service), and you must know what the address is

Connect over ILS is designed for connecting to a computer whose Internet address is "published" by the LapLink ILS or another ILS. To set up a computer for this kind of connection, click Internet Directory Options (Options menu) and type an e-mail address or other unique identifier to be published as the computer's Internet address. Let other LapLink users connect by sharing the address with them.

TIP Set up Internet Directory Options to have the address published automatically. Or publish the address yourself, when you are online: on the Connect menu, click Publish My Internet Address.

TIP If you are connecting to a computer whose IP address you know, use Dial-Up Networking instead of Connect over LAN (Network). This kind of connection is usually feasible only when you connect to a computer that has a permanent IP address.

Both computers must be on the Internet and running LapLink

It doesn't matter how it's done—by dialing in to an ISP or connecting over a direct line—but both computers must be connected to the Internet before they can connect using Connect over ILS.

And LapLink must be running on both of them.

Enable a TCP/IP port in LapLink

To connect over the Internet in LapLink, a TCP/IP network port must be enabled—that is, made available for use in LapLink. To enable a TCP/IP port in LapLink, click Port Setup (Options menu). Click TCP/IP in the Ports list and then check the Enable Port box. Perform this operation on both computers.

Check the security setup on the remote computer

If you are denied the use of Remote Control or any of the other services while connected to another computer, check the security setup on that computer. You can gain access to services through Security (Options menu).

NOTE To let other computers connect to your computer by Internet, you must change the security setup established during installation.

Internet connections between computers on local TCP/IP networks may require special configuration

Without proper configuration, LapLink connections over the Internet may be prevented if either of the computers is on a private or corporate TCP/IP network.

NOTE If you have any questions about your corporate network, consult the network administrator.

LapLink requires the use of two TCP/IP ports: one for the host (the computer receiving the incoming connection) and another for the guest (the computer opening the connection). To facilitate LapLink connections over the Internet, LapLink has registered port 1547 with the Internet Assigned Numbers Authority. This port is used by the host computer. To allow LapLink connections through a firewall, a network administrator should open port 1547.

With most networks, this is the only configuration required. With other networks, however, it may be necessary to specify a port for use by the guest computer. In many cases, the TCP/IP stack assigns guest computers the next available

TCP port number above port 1024, and the firewall automatically allows the connection.

If the firewall does not allow automatic port assignment, however, LapLink must be configured on the guest computer to request a specific port. Consult your network administrator before making this change.

To request a specific port on a guest computer, add the following section to the computer's LLW.INI file (the file is located in the \TSI32\LLW folder within the Windows folder):

```
[TCPIP]
ClientPort=xxxxx
```

For **xxxxx** type any number between 1025 and 65535, except 1547. Using a large number—for example, a number above 30000—reduces the chance of conflicts with other TCP/IP applications.

Checklist for cable connections

Ensure that Autoconnect is turned on

Autoconnect opens cable connections for you automatically. To ensure that Autoconnect is in effect, click Connect Options (Options menu). On the Connect tab, verify that this box is checked: Enable Autoconnect. Below the option, verify that the services you want to use are also checked.

TIP If you have trouble maintaining a cable connection, try disabling Autoconnect on one or both of the computers.

Run LapLink on both computers

No connections are possible by cable or any other means unless LapLink is running on both computers. You can connect to a computer running LapLink Gold or another Windows-based version of LapLink.

Check the cable

Make sure that each end of the cable is securely attached to the proper port; check the port labels for proper identification. Check a parallel cable for damaged pins. Try reconnecting the cable to each port or even reversing the cable ends.

TIP Attach a yellow LapLink cable to parallel/LPT (printer) ports. Attach a blue LapLink cable to serial/COM (modem or mouse) ports; connect only one end to each computer. LapLink does not work over most other serial cables or any printer cables. Attach a LapLink USB cable to a USB port or a USB hub at each computer.

Consult the Windows Device Manager when in doubt about USB or other kinds of ports

If you are not certain whether you have a USB port or another kind of port, check the Windows Device Manager: Right-click My Computer; then click Properties. Look on the Device Manager tab. Note that USB connections are not available in Windows NT or in early versions of Windows 95.

Enable the port

You cannot connect by cable until a port is enabled—that is, made available specifically to LapLink. To enable a port for cable connections, click Port Setup (Options menu). Click the port you want to enable. Then check the Enable Port box.

TIP If a port is listed as unavailable, quit any program that may be using the port, or enable a different port. Make sure that the cable is attached to an available port.

Use a serial cable when connecting to a Windows NT or Windows 2000 computer

When you want to connect by cable to a computer running LapLink in Windows NT or Windows 2000, parallel connections are not available. Use a serial cable instead.

Serial cable connections: lower the speed of a serial port

In Port Setup (Options menu), click the COM port to which the cable is attached. Click Configure. In the Port Speed box, click 57600. Repeat this procedure on the other computer. If you still can't connect, repeat the procedure, lowering the speed one step at a time until you can connect.

Serial cable connections: check for an internal modem

In Port Setup (Options menu), look for an internal modem that is enabled for the serial port to which the cable is attached. Change the port setup so that the modem is enabled for a different serial port.

NOTE Parallel cable connections are not available in Windows NT or Windows 2000; use a serial cable instead.

Restart the computer

If all else fails, remove the cable from both computers, and restart the computers. Reattach the cable, and try the connection again.

Improving parallel cable performance in Windows 95 and Windows 98

There are three drivers you can use in LapLink for parallel ports: the LapLink Enhanced driver (the default), the LapLink Standard driver, and a Windows driver. The LapLink Enhanced driver is preferable when you alternate between parallel communications and other types of communications: you can leave the parallel port enabled without experiencing any degradation of performance. The Windows driver, on the other hand, generally provides better performance for parallel connections; use the Windows driver if you intend to use parallel connections exclusively. If you then want to switch to modem or some other type of communication, be sure to disable the parallel port beforehand.

NOTE For maximum performance from an ECP port, use the Windows driver for the parallel port to which the cable is attached.

To change the parallel port driver, click Port Setup (Options menu) and then click the appropriate LPT port. Ensure that the Enable Port box is checked. Click Configure and then click one of these options: Use the Windows Driver, Use the LapLink Enhanced Driver, or Use the LapLink Standard Driver.

Checklist for wireless connections

Make sure you're not trying to connect to a Windows NT or Windows 2000 computer

You cannot connect computers using wireless devices when either or both of the computers are running Windows NT or Windows 2000. Use a serial cable instead.

Set up the Windows infrared driver

The Windows infrared driver supports a variety of built-in ports and devices attached to serial ports. When you set up the driver, specify any serial port, from COM1 to COM9, as the redirected port. In LapLink Port Setup (Options menu), enable the redirected port for wireless communications.

NOTE In LapLink, *wireless* refers to short-range connections over infrared or radio devices. Other "wireless" connections are available over wireless LAN adapters (using Connect over LAN (Network)) and cellular modems (using Connect over Modem).

Edit the LapLink initialization file if you use AirShare Radio Modules

A setting in the LLW.INI file must be changed in order to connect computers using AirShare Radio Modules. Open LLW.INI in Notepad; the file is located in the \TSI32\LLW subfolder within your Windows folder. Locate the section of the file corresponding to your wireless port: [COM1], [COM2], and so on. Edit the section so that it includes this line: `UseIRDADriver=No.`

Restart LapLink. In Port Setup (Options menu), ensure that the port is enabled for wireless communications.

Enable the wireless port

You cannot connect by wireless until a serial port is enabled for wireless connections in LapLink. In Port Setup (Options menu), click the COM port to which the wireless device is attached. Click Wireless in the Type box, and then check the Enable Port box.

Ensure that Autoconnect is turned on

Autoconnect opens wireless connections for you automatically. To ensure that Autoconnect is in effect, click Connect Options (Options menu), and verify that this box is checked: Enable Autoconnect. Below the option, verify that the services you want to use are also checked.

Run LapLink on both computers

No connections are possible by wireless or any other means unless LapLink is running on both computers. You can connect to a computer running LapLink Gold or another Windows-based version of LapLink.

Check the cable, if any

If you have an external wireless device, make sure that its cable is securely attached to the proper port.

Lower the speed of the ports

If you are using wireless devices without the Windows infrared driver, try lowering the port speeds on both computers. In Port Setup (Options menu), click the COM port to which the wireless device is attached. Click Configure, and then click 57600 in the Port Speed box. Repeat this procedure on the other computer. If you still can't connect, repeat the procedure, lowering the speed one step at a time.

Checklist for CAPI 2.0/ISDN connections

Allow incoming connections by changing passwords in your Log-in List (upgrades only)

Passwords in LapLink Gold are case-sensitive; passwords in versions earlier than LapLink 2000[1] are not. If you have upgraded, you may have to change passwords in your Log-in List:

- To allow incoming connections from earlier LapLink versions, retype their passwords in ALL CAPITAL LETTERS.
- To allow incoming connections from other computers that have upgraded to LapLink Gold, assign them new passwords.

Enable connections to other computers by changing passwords in your Address Book (upgrades only)

Passwords in LapLink Gold are case-sensitive; passwords in versions earlier than LapLink 2000* are not. If you have upgraded, you may have to change passwords in your Address Book:

- If your Address Book has entries for computers running earlier LapLink versions, retype the passwords in ALL CAPITAL LETTERS.
- If your Address Book has entries for other computers that have upgraded, have new passwords assigned on those computers and change your Address Book accordingly.

1 Versions before LapLink 2000 include LapLink Pro, LapLink Tech, and LapLink 7.5 or earlier.

Run CAPI-compatible versions of LapLink on both computers

No connections are possible by CAPI 2.0/ISDN or any other means unless LapLink is running on both computers. Ensure that the version of LapLink running on that computer is compatible with
CAPI 2.0/ISDN.

Check the security setup on the remote computer

If you are denied the use of Remote Control or one of the other services while connected to another computer, check the security setup on that computer. You can gain access to services through Security (Options menu).

Ensure that LapLink is set up to answer calls over CAPI 2.0/ISDN

CAPI cannot answer an incoming call unless the Auto Answer option in LapLink is enabled. In Port Setup (Options menu), click CAPI 2.0/ISDN. Click Configure, and then verify that the Enable box under Auto Answer is checked.

If you are using ISDN in North America, avoid using the LapLink CAPI 2.0/ISDN

In North America, ISDN doesn't usually include CAPI 2.0 but you can still use your ISDN device in LapLink. If the device is set up as a Windows (TAPI) modem, you can open a LapLink connection using Connect over Modem or Connect over Dial-Up Networking. Simply ensure that the device is enabled in LapLink Port Setup (Options menu) as a Windows modem.

If your ISDN device is set with its own dialer, use the dialer to log on to a network. Then, in LapLink, use Connect over LAN (Network) to connect to other computers running LapLink on that network.

Close some LapLink services to allow connections over both channels

Normally CAPI 2.0/ISDN hosts on which channel bonding is not enabled can handle incoming connections on both channels. When only one connection is possible, try closing services on that connection.

Checklist for File Transfer

Drop files directly on target folder

The most common mistake in drag and drop is dropping files on the wrong target folder (the folder to receive the files). To help prevent this mistake, open the target folder first; the name of the folder now appears in the title bar. Then open the source folder and select and drag the files until the mouse pointer rests on the open folder and the folder is highlighted. As soon as you release the mouse button, you receive a confirmation dialog box showing, among other things, the target you just dropped on. Check the target, and change it if necessary.

TIP To ensure that files are copied, press CTRL while dragging. To ensure that files are moved, press SHIFT while dragging.

TIP If you are copying an entire folder (rather than files *within* a folder), drop the folder on the target one level higher than where you want the files to appear; this may be another folder or a drive letter. Assume that you want to update your Letters folder on your desktop computer with your Letters folder from your laptop, and the Letters folder appears at the highest level of folders on drive C. Drag the folder from the laptop to the desktop and drop it on drive letter C.

Use the Copy or Move command

Instead of using drag and drop, use the Copy or Move command. First, click the target folder. After selecting the files to be transferred, click Copy or Move (File menu). Then verify that the source and target are correct.

Make File Transfer available to other computers

If you are denied the use of File Transfer or one of the other services while connected to another computer, check the security setup on that computer. You can gain access to services through Security (Options menu).

Log on to Windows before trying to use File Transfer

As a security measure, LapLink does not allow users to connect to a computer and open File Transfer while the computer is waiting to be logged on to Windows. (When you attempt to open a File Transfer connection to a computer running LapLink and displaying the Windows logon dialog box, you see this message: “Creation of window failed.”)

The solution is to open a Remote Control connection first. Log the remote computer on to Windows and then open File Transfer.

NOTE To set up LapLink to run before the Windows logon dialog box appears, click Remote Control Options (Options menu). On the Startup tab, check this box: Always Start LapLink before Windows Logon Prompt.

General tips for faster transfers

Follow these suggestions to improve transfer speeds:

- Check the folders and files you have selected for transfer, making sure that you are not including more than necessary. For example, have you selected an entire folder when you want to transfer only a few files within the folder?
- Use SpeedSync to improve file transfer times when updating files, particularly over modems: on the Perfor-

mance tab of File Transfer Options, make sure that the Use SpeedSync on All File Transfers box is checked.

- Disable any ports that are not in use: in Port Setup (Options menu), click an unused port, and then clear the Enable Port box.
- Close other service windows and any connections to other computers you may have opened in LapLink.
- On laptop computers, disable power management functions. Attach the AC adapter to the computer to ensure steady voltage throughout the transfer.
- Disable screen savers, and close other programs.

Tips for transfers over a serial cable

- Ensure that the serial port is configured for maximum speed: in Port Setup (Options menu), click the appropriate COM port; click Configure; and ensure that Port Speed is set at 115200.
- Change the transfer mode to standard: in Port Setup (Options menu), click the appropriate COM port; click Configure; and click Standard under Transfer Mode.

Tips for transfers over modems

Consult the documentation for your modem and verify that the port speed is set for optimum performance: In Port Setup (Options menu), click Windows Modems. Click Configure, and click the modem you are using. Click Properties. In the Maximum Speed list on the General tab, click the maximum speed your modem can use.

Tips for transfers over a network

- Transfer your files when there is less traffic on the network.
- Ask your system administrator to verify that the network drivers are current.

Tips for SmartXchange

Use SmartXchange to update files in two folders so that the folders share the latest files. Since SmartXchange always overwrites older files, do not use it if you want to *merge* the contents of two files. Use SmartXchange by opening the two folders you want to update; do not select the individual files. After clicking SmartXchange (SyncTools menu), verify that you have opened the right folders. If you do not want to add new files to either folder, check this box: Transfer Only If Files Are Already on Target.

Ensure that you have read access rights to network files you want to copy

If you can locate the files you want to copy but then are denied access when you attempt to copy them, contact the network administrator. You can copy only files to which you have been assigned read access.

Checklist for Xchange Agent

Ensure that LapLink is running on the remote computer

LapLink must be running on the remote computer before an agent can connect to it and synchronize files. On the local computer merely keep Windows running. (LapLink will start automatically when the agent runs.)

Make sure that a scheduler program is running

To schedule Xchange Agents—and have them run on schedule—you must have a supported scheduler program running.

LapLink prepares an Xchange Agent to run on either of these scheduler programs: the System Agent program included in the Microsoft Plus! Companion for Windows 95; and the Task Scheduler program included in Windows 98 and Microsoft Internet Explorer 4.0 (not supported in Windows NT 4.0). If you don't have either of these programs, LapLink uses its own scheduler program, which it installs during Setup. (Its icon appears at the right end of the Windows taskbar.)

NOTE When LapLink Scheduler is running, its icon appears on the Windows taskbar.

Change an Xchange Agent schedule in your scheduler program

Once you've created an Xchange Agent schedule in LapLink, revise or delete the schedule in your scheduler program, not in LapLink.

You can disable LapLink Scheduler if you do not intend to use it

If you do not intend to use LapLink Scheduler to run Xchange Agents, you can keep it from starting automatically every time you start Windows.

To disable LapLink Scheduler, right-click the Windows Start button and click Open (in Windows NT, click Open All Users). Double-click Programs and then Startup. Click Scheduler and press DELETE.

Close an Xchange Agent before it is scheduled to run

An agent cannot run on schedule while it remains open in Xchange Agent.

Create an Address Book entry to meet the security requirements of the remote computer

If the remote computer requires a name and password, create an Address Book entry and include the name and password required by that computer. LapLink can then send this information and connect automatically.

Turn off the LapLink callback feature

If the remote computer requires or requests a callback before opening a modem connection, the agent cannot run. On the remote computer, turn off the callback feature: Click the Security button on the LinkBar. On the Log-in List tab, click the name of the guest computer and then click Edit. Under Modem Callback, click None.

Avoid moving or deleting agent files for which you have created shortcut icons

If you have moved or deleted the Xchange Agent file, the shortcut icon can no longer run the agent. Create the agent again. You can reuse the shortcut icon by saving the new file in the same location, with the same name, as the original file. Or you can create a shortcut icon for the new agent file.

Create a filter to synchronize a single file

Xchange Agent always synchronizes by folder pairs, but you can create a filter so that only one file within a folder pair is synchronized. Open the agent in Xchange Agent and click the folder pair. On the Edit menu, click Set Filter and then click New. After typing a description for the filter, type the complete name of the file, including its extension. (To add more than one file name, type a semicolon and then the next file name.) Click OK. Click the filter's name in the Available Filters list, and then click Add.

TIP Preview the agent to see if the correct files are included in the synchronization.

Use Preview to limit the files to be copied in the current synchronization

While previewing an agent, you can specify that certain pairs of files and folders will be omitted from the current synchronization: Click a pair of files or folders and then click the Skip Pair button on the toolbar. Repeat this procedure for any other pairs you do not want synchronized. Then—before closing Preview or quitting Xchange Agent—run the agent.

TIP You can omit file and folder pairs only from the current synchronization. To remove them from a future synchronization, you must use Preview again.

Use Xchange Agent to overwrite, not merge, files

Xchange Agent overwrites files. Unless you specify otherwise, it copies the newer file to the other computer. It does not merge files. To merge databases and other shared files, use the program in which the files were created.

Checklist for Remote Control

Improve performance from the guest

On the guest, you may be able to speed up Remote Control connections by changing settings in Remote Control Options (Options menu) on your computer. On the Performance tab, click the Best Performance option. (To further customize settings, click the Settings button.) Your view of the host should be updated faster, though you will now be viewing the host screen in black and white, and larger bitmaps will not be displayed.

Control the display properties of the host from the guest

By default, LapLink is configured to speed up Remote Control connections: any wallpaper or screen saver on the host is temporarily disabled, along with certain other visual enhancements. From the guest, you can restore these enhancements to the host screen through settings on your computer. On the Performance tab of Remote Control Options (Options menu), click Best Quality. (To further customize settings, click the Settings button.) Keep in mind that changing these settings may slow Remote Control connections.

Make Remote Control available to other computers

If you are denied the use of Remote Control or one of the other services while connected to another computer, check the security setup on that computer. You can gain access to services through Security (Options menu).

Use the keyboard to view the host screen

If the window in which you are viewing the host screen does not show all of the host screen, you can use your keyboard to view areas beyond the borders of the window: press CTRL+ALT+SHIFT and any of the arrow keys, PAGE UP, PAGE DOWN, HOME, or END.

Use the latest driver for your video adapter

Contact the manufacturer of your video adapter, on its Web site or elsewhere, to verify that you are using the latest driver.

Avoid changing the color depth or display properties of a host

From the guest, avoid changing the number of colors displayed on the host while you're connected to it using Remote Control. Also avoid changing the Refresh Frequency and other settings in the host's Display Properties while connected. To safely change these properties, you should be seated at the host and fully informed of the capabilities of its monitor. Incorrect settings can damage a monitor.

Use a special key combination to log on to a Windows NT host

When you restart a Windows NT host, you must press CTRL+ALT+DELETE to log on to Windows again. You can accomplish this from the guest by pressing a special key combination specified on the host. (Pressing CTRL+ALT+DELETE on the guest affects the guest, not the host.) To specify a key combination for use on the guest, start LapLink on the host and click Remote Control Options (Options menu). On the Host tab, type the key combination in this box: Send CTRL+ALT+DELETE to This Computer When a Guest Presses This Key Combination.

TIP Instead of pressing a special key combination for CTRL+ALT+DELETE, you can click the Remote Control icon at the bottom of the host's LapLink workplace, and then click Feed CTRL+ALT+DELETE.

Do not install other remote control products and LapLink on the same computer

Because of possible incompatibilities, avoid installing LapLink and another remote control product on the same computer.

Avoid pressing CTRL+ALT+DELETE when viewing a Windows NT host in full-screen Remote Control

Pressing CTRL+ALT+DELETE on a Windows NT computer always displays the Windows Security dialog box on that computer. When you are working in a full-screen Remote Control session, pressing CTRL+ALT+DELETE not only displays the Security dialog box locally but also causes the CTRL and ALT keys to be pressed—but not released—on the host computer. To release these keys and resume normal keyboard operation press CTRL and ALT again.

TIP To have CTRL+ALT+DELETE take effect on a host computer, click Send CTRL+ALT+DELETE to Host on the guest's Session menu.

Keep LapLink running before the Windows NT logon prompt

If you have set up LapLink on the host computer to run before the Windows NT logon dialog box appears, avoid closing LapLink on that computer unless you have administrator rights. If you close LapLink, you will have to restart the computer in order to reset LapLink so that other people can connect. (Restarting LapLink is not sufficient.)

Avoid running a Windows NT host in VGA mode

When a Windows NT computer is running in VGA mode you can make LapLink connections from it to other computers using Remote Control and File Transfer, but the computer cannot serve as a Remote Control host. That is, it cannot be remotely controlled by other computers.

Run DOS in a window on a Windows NT host

You cannot control full-screen DOS programs on a Windows NT host. When you attempt to do so, LapLink minimizes the program and displays a warning message. (To close the DOS program, right-click the icon, and click Close.)

Avoid this problem by setting up the Windows NT host to display DOS programs in a window. If you use a shortcut to a DOS program, for example, right-click the shortcut icon, click Properties, and then click the Options tab. Below Display Options, check Window.

Checklist for Print Redirection

Use the same printer driver on both ends of a connection

For best print results in Print Redirection, both computers should be set up with the same printer driver. To add a printer driver, you may need your Windows CD or a disk from the printer manufacturer.

Use the Windows Control Panel to get additional information

If the document you printed is sent over LapLink correctly but does not print, examine the printer in the Windows Control Panel to get additional information about why the document didn't print. Make sure the printer is connected correctly and has enough paper, and the printer cartridge is not empty.

When several printers are available, you can set up LapLink to prompt you for the printer to use

Normally, LapLink automatically directs print jobs to the printer currently set up as the default printer at the other end of the connection. When there are several printers available, however, you may want to use a printer other than the default.

To set up LapLink to allow you to choose among the available printers, click Print Redirection Options (Options menu) on the computer the printers are attached to. Then click Prompt with a List of Available Printers.

When printing from 16-bit programs, use the default printer

Before printing from 16-bit Windows programs (programs written for versions of Windows prior to Windows 95, Windows 98, and Windows NT 4.0), set up the destination printer as the default printer on the computer to which it is attached. When using Print Redirection from the 16-bit Windows program, print to the default printer instead of selecting a printer from the list of available ones.

Some printer drivers do not support Print Redirection

To use Print Redirection you must set up a printer to direct print jobs to a special port instead of the usual parallel port. You cannot use a printer driver that does not allow you to change the port in this way. You may want to contact the printer manufacturer to see if an updated driver is available.

Checklist for Text Chat

Press ENTER to send your message

Type your message in the lower part of the Text Chat window. (In some cases, you may have to click in the lower part of the window before you can begin typing.) To send your message to the remote computer, press ENTER.

TIP To begin a new paragraph, press CTRL+ENTER.

Open a Text Chat window after connecting

If you are connected to more than one computer, be sure to specify which computer you want to use Text Chat with: Click the name of the computer on the Window menu. Then click the Open Text Chat button on the Shortcut bar or Open Text Chat on the Window menu.

Make Text Chat available to other computers

If you are denied the use of Text Chat or one of the other services while connected to another computer, check the security setup on that computer. You can gain access to services through Security (Options menu).

Save your Text Chat conversation from time to time

As a Text Chat conversation grows in length, the most recent messages begin to replace the earliest. This starts to happen when the conversation exceeds 32,000 characters. If you intend to save a lengthy conversation, begin saving before this limit is reached. To save a conversation, click in the upper part of the Text Chat window. Click Select All (Edit menu), and then click Copy (Edit menu). You can then switch to another Windows program such as Notepad, paste the text, and save it as a file.

Shorten connection time by preparing messages beforehand

Instead of typing text while connected, you can prepare it ahead of time in Notepad or a similar Windows program and send it to a remote computer through Text Chat. In the other application, select the text, and press CTRL+C to copy. In the lower part of the Text Chat window, press CTRL+V to paste. Then press ENTER to send.

Use File Transfer for long messages

Text Chat can send as many as 2,048 characters at once. When you attempt to send a message that exceeds that limit, part of the message will not be transmitted to the other computer. Try sending the message in parts. Or save the message as a file, and send the file using File Transfer. You can still use the Text Chat window to let the remote user know what you're sending and to pass along additional notes.

Checklist for Voice Chat

Use full duplex sound card drivers on both ends of the connection

Voice Chat is easiest to use over a full duplex connection; you can hear and be heard at the same time, as on the telephone.

For full duplex, both ends of the connection must have sound cards with drivers that support full duplex. Contact your sound card manufacturer to determine whether your sound card supports full duplex; and find out whether drivers are available.

When using half duplex, wait for the other person to finish talking

A common problem in half duplex conversations is knowing when to start talking. Use the stoplight icon in LapLink as a guideline for when you can talk and when you can't. In some cases, a verbal signal that you are finished speaking (saying "over," for instance) might be helpful, or it might help to simply pause a few seconds when you are done speaking.

If you're using Manual mode, be sure to release the walkie-talkie button; you might not be able to hear the other person otherwise.

Adjust your microphone to a comfortable level

Many microphones require adjustment in order to send clear speech. Make sure your microphone is placed at a good distance from your mouth—not too far and not too close—and then adjust the microphone level using the Levels tab (Voice Chat Options).

Adjust your speakers or headphones to a comfortable level

Most speakers, and some headphones, have a manual control that you can use to adjust volume. It is recommended that you leave the manual controls at a medium level, and adjust the volume of speakers and headphones in LapLink (or in Windows).

Minimize background noise, if possible

Try moving your microphone away from telephones, loud computer power supplies, radios, and so on. Move your speaker and microphones farther apart.

If the person you're talking to hears a lot of noise in your background or doesn't hear your voice, you might want to reset your environment level using the Levels tab (Voice Chat Options).

Tips for improving Voice Chat performance

Perform the tests on the Levels tab (Voice Chat Options) to get the best performance. Adjust transmission quality to match the conditions of the connection: On the Advanced tab of Voice Chat Options (Options menu) click Low if you are talking over a modem or other slow connection. Click High if you are talking over a network or other fast connection.

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