Home and away

Being on the road needn't leave you in data limbo. Bob Walder shows you how to stay in touch.

An increasing number of people are travelling around with laptops and mobile phones nowadays yet once out on the road they are well and truly on their own. But it's not that difficult to gain access to the data held on your corporate LAN or desktop PC while you are on your travels.

In this workshop we'll show you how to implement a simple remote access connection using just Windows 98 at both the client and server end. Everything mentioned in this workshop applies to Windows 95, too, it is just that you get the Dial-Up Server component in the box with Windows 98, whereas Windows 95 users will have to purchase the optional Plus! Pack to acquire it.

☛ Dial-Up Networking

With Dial-Up Networking (DUN), you can configure a computer running Windows 9x to be a remote access server for dialup clients running Windows 98, Windows 95, Windows for Workgroups, Windows 3.1, or indeed any other client running PPP (Point to Point Protocol).

The Windows 9x dialup server can act not only as a server to the client, sharing its file and printer resources with one dialup client at a time but also as a gateway to an IPX/SPX or NetBEUI network as long as both the client and the server are using the same protocol as the network.

There are a few key differences between the Windows 98 dialup server and the more advanced NT-based Remote Access Server (RAS):
• Windows NT Server 4.0 and later can act as a VPN server; Windows 98 cannot.
• Windows NT Server 3.5 and later can act as an IP router whereas Windows 98 cannot. IP router capabilities permit access to a TCP/IP network, such as the internet.
• Windows 98 provides all the protocols you need to connect to the internet but cannot act as an IP router.
• Windows NT Server 3.5 and later versions support 256 remote connections, whereas Windows 98 provides only one remote connection at a time.

☛ Installation

In Windows 98, the Dial-Up Server is not automatically installed, though at least it is now included on the CD:
• **Select** the Add/Remove Programs applet in the Control Panel.
• **Select** Communications under the Windows Setup tab, and click on the Details button.
• **Ensure** that Dial-Up Networking and Dial-Up Server are both checked, and click on OK [Fig 1].

This installs the server component along with the client, too, if that was not already installed.

If you wish to share your computer's resources over DUN you will also need to install File and Print sharing:
• **Select** the Network icon in the Control Panel.
• **Click** on File and Print Sharing.
• **Check** one or both boxes to provide access to local files and/or printers to remote users.

Once your PC has rebooted you are able to designate resources such as local directories, or even entire disk drives, to be shared over the network:
• **From Explorer,** or from the My Computer window, right click on the directory you wish to share, or select the Properties option from the File menu.

• **Select** the Sharing option.
• **Click on Share As** and give the share a descriptive name. But keep it short. For instance, on a PC called BOB I would call the C-drive BOBC and the DATA directory BOBDATA.
• **Assign security.** If you are using share-level security on the PC, give it a password and set the required Access Type. If you are employing user-level security (recommended) you can choose from a list of users on your designated authentication provider — perhaps an NT Domain. This was covered in detail in the Dec '98 *Hands-On Networks* column.

Try to avoid sharing the root directory of a drive since that makes the entire drive accessible due to the fact that all subdirectories of the shared directory are automatically shared. You would then have to visit each subdirectory individually to remove the access rights from those you did not want to make available. It is far safer to grant access only to those specific directories you know you need to share.

◄**Fig 1** Selecting Dial-Up Networking (DUN) and Dial-Up Server components (Windows 98)

☛ Security

This same share, or user-level security split, also applies to the Dial-Up Server itself and, if you are going to be allowing access to resources such as disk shares over DUN, it would be wise to make use of the meagre security offered by Windows 98.

Dial-Up Networking gives you the option of requiring a password to connect to the remote access server, depending on whether the Windows 98 dialup server is protected with share-level or user-level security.

Share-level security assigns a password to the Windows 98 dialup server. When users dial in, they must

provide the password before they can gain access. After the connection has been established, they can browse the resources on the dialup server subject to whatever level of security has been applied to them when the shares were created. People can also log on to the network after connecting to the dialup server if logging on to the network is enabled on the dialup client. Because users can distribute passwords, this method is less secure than user-level security and you should note that share-level security is unavailable on NetWare networks.

User-level security restricts access to a network resource until a security provider, such as a Windows NT domain controller or a NetWare server, authenticates the request. You can set the requirement that a user's logon password to a remote access server be the same as the network and Windows 98 logon passwords.

With user-level security, when someone accesses shared resources on the dialup server, Windows 98 controls their rights to the shared resources, such as whether they have read-only or full access to files. Access rights are specified in the sharing properties for each resource protected by user-level security.

☛ **Dial-Up Server configuration**
OK, we have installed the server component and enabled file and printer sharing if required. We are now ready to configure security options and fire up the Dial-Up Server.

1 **Open the Dial-Up** Networking folder. This is done by double-clicking the MyComputer folder to open it, followed by Dial-Up Networking, or by clicking Start, pointing to Programs, then Accessories, followed by Communic-ations and then clicking Dial-Up Networking.

2 **For user-level security:** in the Dial-Up Server properties, click Allow caller access and then click Add. In the Add Users dialogue box, specify those who will have permission to access the dialup server and click OK [Fig 2].

3 **For share-level security:** in the Dial-Up Server dialogue box click

Allow caller access [Fig 3] and then Change Password so as to provide password protection for the Dial-Up Server.

4 **Click Server Type** and then make the relevant selection.

5 **Make sure** that the server type is the same for both the dialup server and the dialup client. If the latter uses PPP you can also select the Default server type. In this case the dialup server will automatically start in PPP mode for incoming calls and switch to Windows for Workgroups and Windows NT 3.1 if the PPP negotiation fails. Notice that changes to the server type do not apply to a currently open connection. Changes will apply to any future connections made to this computer.

6 **In the Dial-Up Server properties,** click Server Type and make sure 'Require encrypted password' is checked — if your Dial-Up client supports encrypted passwords.

7 **Click OK** and the dialup server is ready to answer incoming calls.

If you have forgotten something, it is only a phone call away

If you are not using the PC as a full-time Dial-Up Server but rather for occasional access when you are out of the office, then it would be wise to disable the dial-in capability when not in use, as a security precaution as much as anything else. This can be done simply within

the Dial-Up Networking window:
• From the Connections menu in the Dial-Up Networking window, click Dial-Up Server.
• In the Dial-Up Server dialogue box, click No caller access.

You can also completely remove Dial-Up Server capabilities from a user's computer by taking the Add/Remove Programs option in Control Panel. For a more centralised approach a network administrator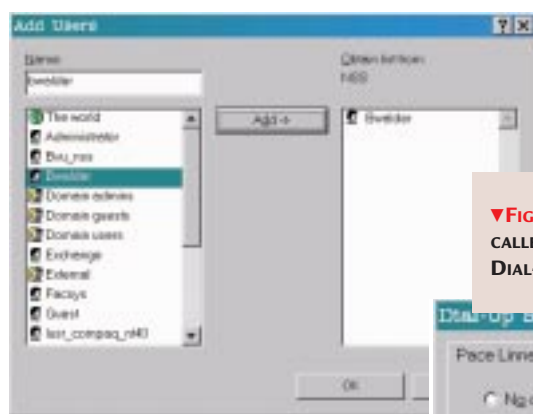 could disable dialup support on each computer, or on a system-wide basis, by using System Policy Editor, either to change a single computer's registry or to define policies which can be shared by multiple computers.

To disable dialup support by using System Policy Editor, click Disable Dial-in. The Dial-Up Server menu option still appears on the Connections menu after dialup support has been disabled but no dialogue box for setting up the dialup server will appear.

☛ **Dial-Up Networking client**
Now that your desktop PC is ready to act as a DUN server, the only thing you have to remember is to plug in your modem and enable caller access each time y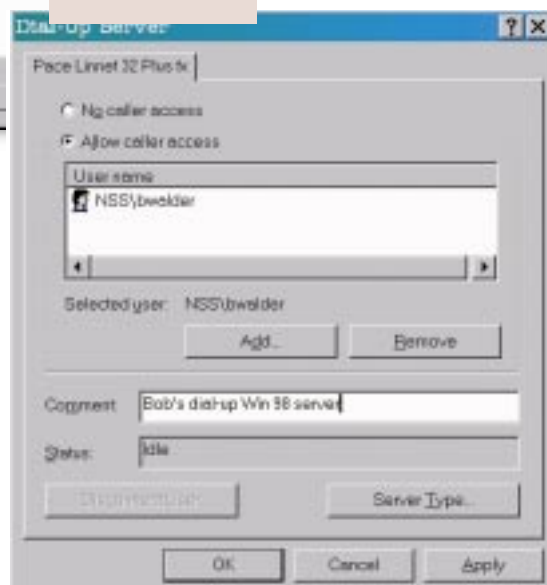ou leave the office. Of course, you still need to configure your notebook PC to allow DUN calls but this is straightforward with the Connection Wizard:
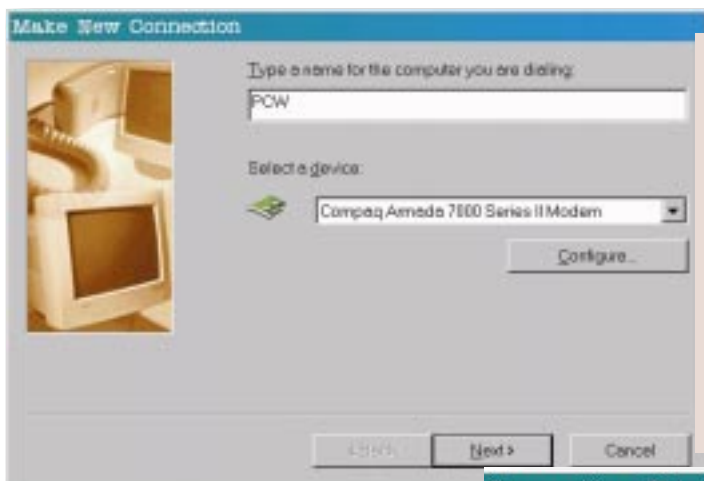
• Confirm the phone number and location from which you are dialling.
• Click on Connect and you should see a progression of Dialling, Verifying User Name and Password, and Connection Established windows.
• Click Close on the Connection Established window [Fig 5].

Your PC is now connected to the remote Dial-Up Server. Click on Start, then Find, then Computer and enter the name of the Dial-Up Server PC. Next, click on Find Now. The Dial-Up Server should appear in the results window, at

1 **Double-click** MyComputer. Then double-click Dial-Up Networking

2 **When first installed,** there will just be one icon in this window; Make New Connection. Double-click it to start the Connection Wizard.

3 **The default name** is MyConnection. Change this to something more descriptive.

4 **Select the modem** you wish to use for this connection [Fig4]. The idea is that you could create different connections for the same Dial-Up Server with each using a different modem — say one for a standard PSTN modem and another for a cellular phone connection.

5 **Click on the Configure button** to check the modem parameters. Usually, there should be nothing to change here if the modem has already been correctly installed and configured.

6 **Click on the Next button** and then enter the telephone number of the line to which your Dial-Up Server is connected. If required, the area and country codes will automatically be included by Windows 98 when the call is made. For instance, when you make the call, if your current location is France the country code and area code will be used.

7 **Click the Next button,** click the Finish button and the new icon will be created.

10 **Right click the new icon** and select Properties. Ignore General, Scripting and Multilink for now and select the Server Types tab.

11 **Type of Server should be set** to PPP: Internet, Windows NT Server, Windows 98.

12 **Select Logon to network** if you would like Windows 98 to automatically log on to the destination server.
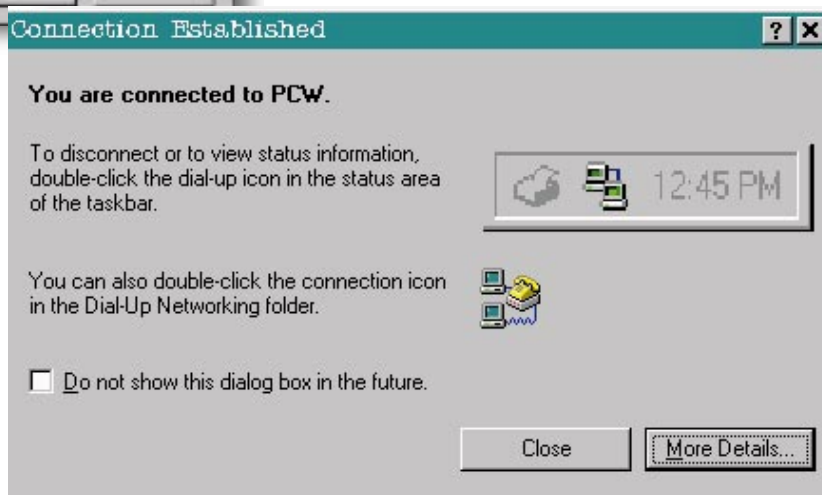
13 **Select enable software** compression to reduce the transfer time. This option should work in most cases but try disabling it if you have problems.

14 **Select Require Encrypted** Password if this option has been set on your Dial-Up Server. This enables software encryption of your user name and password, rather than sending it over the wire as plain text.

15 **In the Allowed Network** Protocols box you must ensure that the client is using the same protocol as the server. All three will be checked by default, but if you only require TCP/IP you should disable the other two as it reduces potential for problems and speeds up the connection.

Once you have completed this stage, your client is ready to initiate a connection.
• Double-click on the new icon to fire up the connection.
• Enter the username and password if you are logging on to the network once you have connected.

which point you can double-click on it to open an Explorer window on that PC.

Once the available shared resources appear you can treat these exactly like local resources, copying files, mapping directories as network drives, sending jobs to printers and so on.

Throughout the session, a small icon sits in the system Tray. Double-clicking this icon brings up a session information window which shows the number of bytes transferred, connect time and so on. Once you have completed your work on the remote PC, click on the Disconnect button in this window to close the session.

That's it. You can now travel anywhere with your notebook, safe in the knowledge that if you have forgotten something, it is only a phone call away.

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