C32DW and 16 bit Protocol/Drivers, or WFW *(Last modified: 09JAN1998)*

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Issue

Client 32 for DOS/Win supports 16 bit protocols, drivers and peer-to-peer networking in Windows for Workgroups 3.11. They can be configured to work with either a 32bit ODI LAN driver or a 16bit ODI LAN driver. Complete Section A procedures to configure for a 32bit ODI LAN driver. Complete Section B procedures to configure for a 16bit ODI LAN driver. If you are not using WFW then you will need to implement the steps recommended in Section B.

A. Configuring Client32 for DOS/Win with a 32bit LAN driver and Windows for Workgroups.

Note:When running Windows for Workgroups, Novell recommends using a 16-bit ODI driver over the 32-bit driver for the following reason: Testing done at Novell has shown intermittent instability when switching processor modes from real mode to protected mode and back to real mode. When 32-bit drivers are run, a network request is handled by MSODISUP.386 (32-bit), then ODIHLP.EXE (16-bit) and finally by the 32-bit LAN driver. This requires three context switches. If the 16-bit driver is used, a network request is handled by MSODISUP.386 (32-bit), then by ODIHLP.EXE (16-bit) and then by the 16-bit ODI driver. That requires only one context switch. In short, the 32-bit driver is an available option, but if slowness or instability are encountered, use a 16-bit driver.

1. Install Client 32 for DOS/Win.

Note: During Setup, choose a 32-bit ODI LAN driver for your network board. If there is not a 32bit LAN driver available for your network board, skip to section B, Configuring Client32 for DOS/Win with a 16bit LAN driver and Windows for Workgroups

2. Install Windows for Workgroups Peer-to-Peer Networking.
2a. Double-click the "Network Setup" icon in the "Network" Program Manager group.
2b. Choose "Networks."
2c. Choose "Install Microsoft Windows Network."
2d. Choose "Other" to install Windows support for an additional network, and then choose "Novell NetWare (Workstation Shell 4.0 and above)" in the drop-down box.
2e. Choose "OK."
2f. (Optional) Click the "Sharing" button and specify if you want to share drives or printers connected to the computer. Then click "OK."
2g. Choose "Drivers."
2h. Select the proper LAN driver for the computer's network board.
2i. Choose "Setup."
2j. Select "ODI driver" from the "Driver Type" drop-down list.
2k. Choose "OK."
2l. Add or remove protocols, as needed.
You can use the following protocols with Client 32:
* IPX/SPX Compatible Transport
* IPX/SPX Compatible Transport with NetBIOS

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* Microsoft NetBEUI

2m. (Conditional) If you have more than one protocol loaded, select the protocol you want to use as the default and choose "Set as Default Protocol."

2n. Choose "Close" to close the "Network Drivers" dialog box.

2o. Choose "OK."

2p. Choose "No" when prompted to copy over files that are already on the computer.

2q. Choose "Continue" to return to Windows without restarting the computer.

3. Edit the STARTNET.BAT file to add support for ODIHLP.EXE (Microsoft's NDIS-to-ODI mapper) with Client32. The STARTNET.BAT file is located in the NOVELL\CLIENT32 directory.

ODIHLP.EXE requires a shim called PDOSMLID.NLM to communicate with the 32-bit ODI modules. You load this module by loading the topology-specific counterpart, PDOS[eth | tok | fddi].COM. These modules load PDOSMLID.NLM automatically. In the STARTNET.BAT file, load PDOS[eth | tok | fddi].COM and ODIHLP.EXE after loading LSL.COM, N16ODI.COM, and NESL.COM. Finally, CLIENT32.NLM is loaded to establish the network connection. The STARTNET.BAT file should look similar to the following example:

```
SET NWLANGUAGE=English
C:\NOVELL\CLIENT32\NIOS.EXE
LOAD C:\NOVELL\CLIENT32\LSLC32.NLM
LOAD C:\NOVELL\CLIENT32\CMSM.NLM
LOAD C:\NOVELL\CLIENT32\[ether | token | fddi]TSM.NLM
LOAD C:\NOVELL\CLIENT32\<32-bit LAN driver> (see note below)
LOAD C:\NOVELL\CLIENT32\IPX.NLM
C:\NOVELL\CLIENT32\LSL.COM
C:\NOVELL\CLIENT32\N16ODI.COM
C:\NOVELL\CLIENT32\NESL.COM
C:\NOVELL\CLIENT32\PDOS[eth | tok | fddi].COM
C:\WINDOWS\ODIHLP.EXE
LOAD C:\NOVELL\CLIENT32\CLIENT32.NLM
```

Note: PDOS[eth | tok | fddi].COM requires that the 32bit ODI LAN driver be loaded reentrantly for all supported topology frame types. For example, in an Ethernet environment using a NE2000 network card, the load statements for the driver would be:

```
LOAD C:\NOVELL\CLIENT32\CNE2000.LAN INT=3 PORT=300 FRAME=ETHERNET_802.2
LOAD C:\NOVELL\CLIENT32\CNE2000.LAN INT=3 PORT=300 FRAME=ETHERNET_802.3
LOAD C:\NOVELL\CLIENT32\CNE2000.LAN INT=3 PORT=300 FRAME=ETHERNET_II
LOAD C:\NOVELL\CLIENT32\CNE2000.LAN INT=3 PORT=300 FRAME=ETHERNET_SNAP
```

4. Edit the AUTOEXEC.BAT to remove ODIHLP.EXE.

By default, Windows for Workgroups Peer-to-Peer network configuration loads ODIHLP.EXE in your AUTOEXEC.BAT file. This line needs to be removed for this configuration to work properly.

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4a. From the Program Manager "File" menu, choose "Run."
Type "SYSEDIT" and choose "OK."
4b. In the "AUTOEXEC.BAT" window, select the line that loads ODIHLP.EXE . From the "Edit" menu, choose "Cut."
4c. Save your changes and close SYSEDIT.

5. Edit the NET.CFG file, located in the NOVELL\CLIENT32 directory, to reflect your default frame type when PDOS[eth | tok | fddi].COM loads.
For example, PDOSETH.COM loads with the default frame type of Ethernet_802.2. If you are using Ethernet_802.3 on your network, you will need to make the following additions to your NET.CFG file.

```
LINK DRIVER PDOSETH
    FRAME ETHERNET_802.3  (This should be your default frame type on your network)
```

These lines can be added to the bottom of the NET.CFG file, being sure to leave a blank line between sections.

6. Edit the BINDINGS line in the PROTOCOL.INI file.
6a. Using the NOTEPAD editor in Windows, locate and open the PROTOCOL.INI file in the C:\WINDOWS directory.
6b. Change any BINDINGS line to read:

```
BINDINGS=PDOS[eth | tok | fddi]  (Note: Do not include the .COM)
```

6c. Save the changes and close the file.

7. Restart the computer.

B. Configuring Client32 for DOS/Win with a 16bit LAN driver and Windows for Workgroups.

1. Install Client 32 for DOS/Win.

Note: During Setup, choose a 16-bit ODI LAN driver for your network board.

2. Install Windows For Workgroups Peer-to-Peer Networking.
2a. Double-click the "Network Setup" icon in the "Network" Program Manager group.
2b. Choose "Networks."
2c. Choose "Install Microsoft Windows Network."
2d. Choose "Other" to install Windows support for an additional network, and then choose "Novell NetWare (Workstation Shell 4.0 and above)" in the drop-down box.
2e. Choose "OK."
2f. (Optional) Click the "Sharing" button and specify if you want to share drives or printers connected to the computer. Then click "OK."
2g. Choose "Drivers."

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2h. Select the proper LAN driver for the computer's network board.
2i. Choose "Setup."
2j. Select "ODI driver" from the "Driver Type" drop-down list.
2k. Choose "OK."
2l. Add or remove protocols, as needed.
You can use the following protocols with Client 32:
* IPX/SPX Compatible Transport
* IPX/SPX Compatible Transport with NetBIOS
* Microsoft NetBEUI
2m. (Conditional) If you have more than one protocol loaded, select the protocol you want to use as the default and choose "Set as Default Protocol."
2n. Choose "Close" to close the "Network Drivers" dialog box.
2o. Choose "OK."
2p. Choose "No" when prompted to copy over files that are already on the computer.
2q. Choose "Continue" to return to Windows without restarting the computer.

3. Edit the AUTOEXEC.BAT and STARTNET.BAT files to load ODIHLP.EXE (Microsoft's NDIS-to-ODI mapper) after LSLC32.NLM.
3a. From the Program Manager "File" menu, choose "Run."
Type "SYSEDIT" and choose "OK."
3b. In the "AUTOEXEC.BAT" window, select the line that loads ODIHLP.EXE. From the "Edit" menu, choose "Cut."
3c. From the Program Manager "File" menu, choose "Run." Then type "NOTEPAD" and the path to the STARTNET.BAT file.
For example: NOTEPAD C:\NOVELL\CLIENT32\STARTNET.BAT
3d. Click "OK."
3e. In the STARTNET.BAT file, paste the ODIHLP.EXE line after the line that loads LSLC32.NLM.

The STARTNET.BAT file should look similar to the following example:

```
SET NWLANGUAGE=English
C:\NOVELL\CLIENT32\NIOS.EXE
C:\NOVELL\CLIENT32\LSL.COM
C:\NOVELL\CLIENT32\N16ODI.COM
C:\NOVELL\CLIENT32\NESL.COM
C:\NOVELL\CLIENT32\<16bit ODI LAN Driver>
LOAD C:\NOVELL\CLIENT32\LSLC32.NLM
C:\WINDOWS\ODIHLP.EXE
LOAD C:\NOVELL\CLIENT32\PC32MLID.LAN
LOAD C:\NOVELL\CLIENT32\IPX.NLM
LOAD C:\NOVELL\CLIENT32\CLIENT32.NLM
```

3f. Save your changes and close SYSEDIT and NOTEPAD.

4. Restart the computer.

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NOTES:

* If these procedures are not followed, an error 1536 or error 58 will occur during startup of Windows and you will not be able to reference NetWare bindery servers or Directory trees in File Manager or other utilities.

* If you change settings in Network Setup or reinstall, Windows places ODIHLP back in the AUTOEXEC.BAT, so ensure that ODIHLP.EXE is being loaded in the proper place.

* Any Windows for Workgroups supported combination of IPX/SPX emulation, NetBIOS, and NetBEUI can be used with this configuration.

* Refer to the April 1995 NetWare Application Notes for more information on this configuration.

* You must be sure that NET START is occurring after STARTNET.BAT

Note: If 32-bit File Access is used (Main, Control Panel, Enhanced, Virtual Memory) errors may be issued by WFW.

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