

Perle Remote User's Guide

(for DOS and Windows 3.x)

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Preface

About this Guide

This Guide is organized to help you install and use your Perle Remote Dial-In Client software to connect to a Perle 833 Remote Access Server.

In this guide you will read about:

- Introduction

Chapter 1 will provide an overview of the software and discuss requirements.
- Installation and Set-up for Dial-In

The instructions in **Chapter 2** will help you install the Perle Remote software for Windows and DOS.
- Configuring the Dialer

In **Chapter 3**, you will find out how to define names and phone numbers, how to configure the COM port, and how to configure your modem.
- Dialer Advanced Features

In **Chapter 4**, you will find out about some of the Perle Remote Dialer's advanced features like filtering, security, call back, alternate configurations, using the Log file and Point-to-Point protocol.
- Troubleshooting

In **Appendix A** you will find a table of common problems and their solutions.
- Configuration Examples

In **Appendix B** you will find a set of example configuration files for several LAN environments.

This guide assumes that the network administrator has installed and configured the Perle 833 Remote Access Server. See the Perle 833 Remote Access Server Guide for details.

About the Documentation Set

This guide is part of a document set that includes the following publications:

- Perle Remote User's Guide
- Perle 833 Dial-Out User's Guide
- Perle 833 Remote Access Server Guide

Chapter 1: Introduction

This chapter introduces the Perle Remote Dial-In Client software. You will read about:

- Overview of System
- Networking Information
- General Requirements

Overview

Perle Remote is a dial-in client software package which works in conjunction with a Perle 833 Remote Access Server to allow remote PCs to access a LAN and perform tasks as if they were directly attached to it. Remote PCs act like local nodes on an Ethernet or Token Ring LAN and, therefore, can access all network resources such as NetWare, Window NT, UNIX, OS/2, LAN Server, WFWG, LAN Manager, AppleShare and Lantastic.

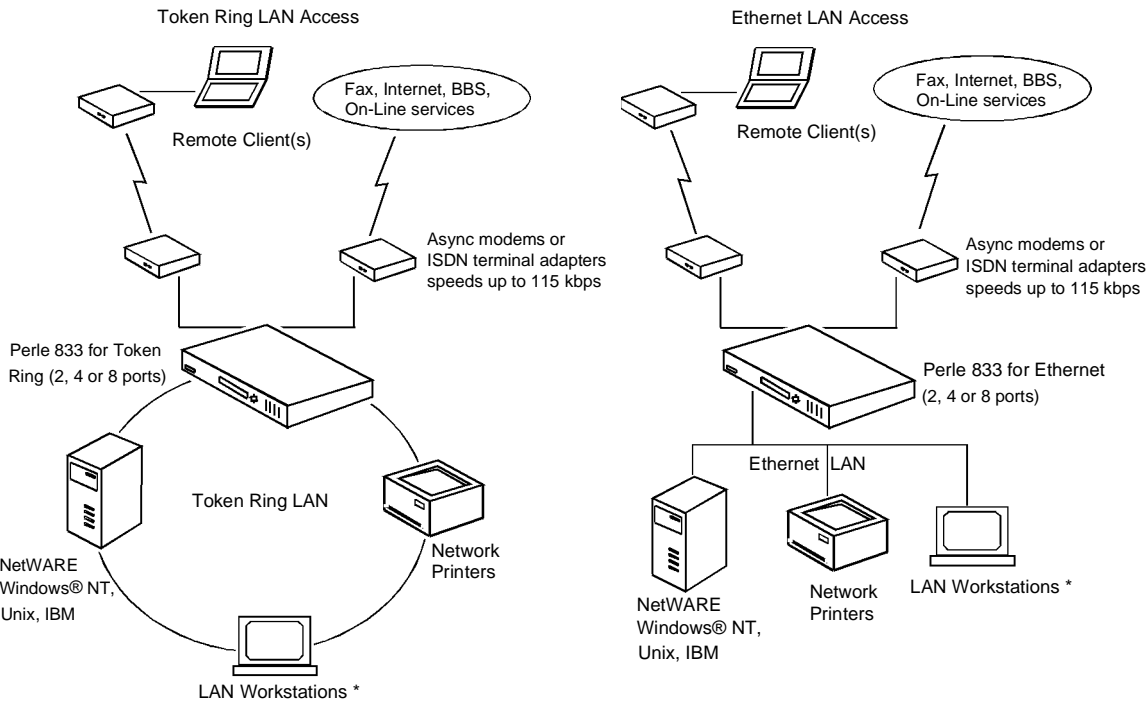
Corporate information systems are protected from unauthorized access with the Perle 833's multi-level security and management features. Individual user names and passwords are authenticated through PAP and CHAP. Perle 833 can also be configured to fixed dial-back configuration.

The Perle Remote connects to the Perle 833 using inexpensive voice-grade telephone circuits and commonly available asynchronous modems and ISDN terminal adapters. Each port on the Perle 833 can handle a sustained data transfer rate of up to 115 kbps.

The Perle Remote software package includes the following:

- Client software which provides the interface between the remote PC's operating system and serial COM port. The client software will use DOS Protected Mode Services (DPMS) to run in extended memory.
- Dialer software for establishing the connection between the remote PC and the Perle 833 Remote Access Server. There are separate versions for the DOS and Windows environments.
- Novell software to provide an interface between the remote PC and a LAN using the IPX protocol in an ODI environment.
- TCP/IP software to provide and interface between the remote PC and a LAN using the IP protocol.
- Software to provide an interface between the remote PC and a LAN in an NDIS environment.

Perle 833 Network Topology



* Management software can be run from either a local or remote Windows® PC, Windows® 95 or Windows® NT

Network Protocols

Protocols Supported

Perle Remote can be configured to support the following network protocols

- Novell Internetwork Packet Exchange (IPX)
- Internet Protocol (IP)
- NetBios Extended User Interface (NetBEUI) - (Windows for Workgroups 3.11)
- Logical Link Control (LLC) and 802.2.

ODI and NDIS Drivers

To allow your PC networking software to use dial-in, Perle Remote supports both the Open Data-Link Interface (ODI) and Network Driver Interface Specification (NDIS). These interfaces allow network protocols (IPX, IP) to communicate with the network interface card (NIC) drivers.

Before you choose one of these two drivers, determine the interface that is running on local workstations on your existing network. The following can be used as guidelines:

ODI Driver

- Used on LANs running Novell's networking software or a combination of Novell and Microsoft networking software.
- The Perle Remote driver is called **REMOTE /ODI** and acts as if it were an Ethernet card. If you are connecting to a Token-Ring network, the Perle 833 server will convert the Ethernet protocol to Token-Ring.

NDIS Driver

- Used on LANs using Microsoft Networking software.
- The Perle Remote driver is called **REMOTE /NDIS** and acts as if it were an Ethernet card. If you are connecting to a Token-Ring network, the Perle 833 will convert the Ethernet protocol to Token-Ring.

General Requirements

Perle Remote for Windows Requirements

The minimum requirements to use the Windows version of Perle Remote are:

- PC-compatible 80386 or faster computer with the following:
 - 3.5-inch, high-density disk drive
 - Hard drive with at least 5.0 Mb free storage space
 - MS-DOS version 5.0 or higher
 - Microsoft Windows 3.1 or higher, or Windows for Workgroups 3.11
 - 4 MB RAM
 - Windows-compatible mouse
 - An unused serial (COM) port. A buffered serial port (for example, one that uses 16550 UARTs or higher) is strongly recommended. Serial ports that are several years old are usually not buffered.
- A modem and telephone line. The minimum recommended speed for the modem is 14.4 Kbps.
- The Perle Remote (PC) Disks.

Note: Perle Remote is not intended for operation under Windows 95. For that environment, use the Windows 95 Native Dial-Up Networking program. See the Perle 833 Remote Access Server Guide for details.

Perle Remote for DOS Requirements

The minimum requirements to use the DOS version of Perle Remote are:

- PC-compatible computer with the following:
 - 3.5-inch, high-density disk drive
 - Hard drive with at least 4.0 Mb free storage space
 - MS-DOS version 5.0 or higher
 - 1 MB RAMAn unused serial (COM) port. A buffered serial port (for example, one that uses 16550 UARTs or higher) is strongly recommended. Serial ports that are several years old are usually not buffered.
- A modem and telephone line. The minimum speed for the modem is 14.4 Kbps. However, 28.8 Kbps or higher is recommended.
- The Perle Remote (PC) Disks.

Memory Manager

The Perle Remote software will use DOS Protected Mode Services (DPMS) to load itself into extended memory. This will leave more of the 640K conventional memory for use by other applications.

To use DPMS, the PC running Perle Remote must use a memory manager. The requirements are:

- HIMEM.SYS must be loaded in the **config.sys** file. This is the extended memory manager that is supplied with DOS or Windows.
- If the client PC is running an Expanded Memory Manager (EMM) then it must support the Virtual Control Program Interface (VCPI). EMM386, which is supplied with DOS or Windows, supports this interface. If you are using a 3rd party EMM then check its specifications.

If the client PC does not have enough memory to load the client software into extended memory or it is not running a memory manager, then the Client software will load into conventional memory.

Chapter 2: Installation

This chapter provides installation instructions and discusses considerations for running the Perle Remote software in various environments.

Information Required

Before reading the installation instructions for your operating system, get the following information from your network administrator:

User name and password

The client must have a user name and password for security authentication. If the Perle 833 is configured for a third party security service, you may need a security key card.

Network Architecture

Are you dialing into an Ethernet or Token-Ring LAN? This information is required during installation to make the appropriate frame types available.

Frame Type

Determine which frame types are supported on your network. Select these frame types during installation.

Network Software

The Perle Remote installation will ask which network interface or network type is required for your client software. The choices are ODI and NDIS. Use the interface that is currently being used by existing workstations on your network.

If you cannot get this information, the defaults used by Perle software will work in most cases.

Optimizing a Remote User's Performance

Even the fastest dial-up links available today are far slower than a LAN, and this means that a remote link will provide slower network performance than a direct, local connection to a LAN. However, the remote connection can be optimized to provide good performance by following some general guidelines, the use of broadcast message filtering, and using the Load-Alert utility.

Guidelines

Follow the guidelines given below.

- Use the fastest modems possible. Modem speeds under 14.4 Kbps may be unacceptably slow, and may cause communication time-out problems with network servers. If possible, use a fast service like ISDN.
- Loading an application over the a dial-up link can be very time consuming since the application programs have gotten very large. By ensuring that you have a copy of the application on the local PC, you will only need to load the data from the LAN. This can provide tremendous performance benefits.

Example: In a Novell NetWare network, some useful files to have on the remote PC are LOGIN.EXE, LOGOUT.EXE, and MAP.EXE. These files are supplied on your Perle 833 Client install disks.

Note: Refer to the software licensing agreements of your applications before copying them.

Message Filter

The performance of the Perle Remote can be improved by filtering out the Broadcast and Multicast messages. However, some network environments require that the Perle Remote let these messages pass. See “Filter” on page 39 for configuration details. See your network administrator for the correct settings.

Load Alert

During software installation, you will have the option of installing Load-Alert. This utility can be used to warn you if you try to load an application from a network drive. It is recommended that you always run application software from your system as applications that run over the network reduce overall performance. See “Load-Alert” on page 40 for details.

Installing the Perle Remote Software

This section provides instructions on how to install Perle Remote in DOS or Windows.

Note: To help avoid installation problems, make sure no other network or communications software is running on the PC such as that which might be loaded by AUTOEXEC.BAT or CONFIG.SYS. This could include network drivers, earlier versions of the Perle Remote software, and any other software that takes control of the PC COM port.

1. Insert the Perle Remote Disk 1 into your 3.5-inch, high-density disk drive.

Windows

- a) Run Windows.
- b) From the **File** menu in **Program Manager**, select **Run**. Type **A:SETUP**, where **A:** is your drive letter. Press **Enter**.

DOS

- a) At the DOS prompt, type **A:INSTALL** and press **Enter**. (If the floppy drive is not “A”, substitute the proper drive letter.)
3. The instructions on the screen will guide you through the installation.
4. Exit Windows and reboot your PC.

After running the installation, you will see certain files installed in your batch or configuration files. They are listed as follows:

- | | | |
|---------------------|---|---|
| LSL | - | provided by Novell - Link Support Layer - ODI interface program. |
| REMOTE /ODI- | - | This is the Client program module. This program combined with the /ODI option simulates an ODI compatible Ethernet LAN driver for the Perle Remote. This module must always be loaded after LSL since it registers itself with LSL. The driver provides an interface between the network protocols and the PC COM port. |
| IPXODI | - | provided by Novell - This is the IPX protocol driver. |
| NETX | - | Provided by Novell - this module provides the network level interface to the applications. |
| VLM | - | provided by Novell - Virtual Loadable Module. Replaced the NETX program. |

- TCPIP.EXE** - provided by Novell - This is the IP protocol driver
- NET.CFG** - configuration file used by the ODI driver. The MAC address is put in this file if entered during configuration. The COM port IRQ number should also be put in this file.
- REMOTE /NDIS-** This is the Client program module. This program combined with the /NDIS option simulates an NDIS compatible Ethernet LAN driver for the Perle Remote. The driver provides an interface between the network protocols and the PC COM port.
- PROTOCOL.INI-** configuration file used by the NDIS driver. The MAC address is put in this file if entered during configuration. The COM port IRQ number should also be put in this file.
- DIALER** - This program is run when a dial-in connection needs to be established to the server. Once the connection is established the program is no longer required to maintain the connection.
- DIALERW** - The Windows version of the Dialer.

After the installation is complete, see the appropriate sections on Memory Management and Network Environment to determine if your Client has been configured properly.

Memory Management

As discussed in the section “Memory Manager” on page 5, the client module of Perle Remote will automatically try to load into extended memory. The following steps show the requirements on how to setup and configure the client for best use of the available memory.

Loading of Client into Extended Memory.

The **config.sys** file must load the extended memory manager. This should be done at the beginning of the file before any other device commands. An example line is shown below.

```
device=c:\windows\himem.sys
```

If the client PC is using a Expanded Memory Manager (EMM), then this manager must support Virtual Control Program Interface (VCPI).

Loading Client into Low Memory

If the client PC has not been configured with an extended memory manager or does not have enough extended memory to support the DPMS software, then the entire client is loaded into conventional memory (below 640K). The following messages are displayed:

```
XMS driver not loaded
```

or

```
Insufficient extended memory for Client software.  
Loading into low memory
```

- The **/NODPMS** option can be used to force the Client software to be loaded into low memory and therefore eliminate the preceding messages as follows:

```
REMOTE /ODI /NODPMS
```

or

```
REMOTE /NDIS /NODPMS
```

- Compression software can be disabled to reduce the amount of memory required for the Client. This may be enough to allow the client to be loaded into extended memory. See “Set up Network Parameters” on page 31 for configuration instructions.

Running in a Novell (ODI) Environment

The installation program will set up the Perle Remote PC with all the files configured for proper operation in a Novell IPX or IP network using the ODI interface. This following section is for information purposes.

The client install will create a file called RUNP833.bat which will contain these lines. This batch file can be called from the autoexec.bat or it can be run separately to establish a connection.

RUNP833 for IPX protocol

```
LSL
REMOTE /ODI
IPXODI
NETX /ps=<server name>
    or
VLM /ps=<server name>
```

RUNP833 for IP protocol

```
LSL
REMOTE /ODI
TCPIP
```

The NET.CFG file contains parameters for various Networking drivers and will have been modified by the install program to contain the following lines. This file is located in the Perle Remote installation directory. These lines indicate the networking frame type being used. They will vary depending on selections made during installation.

NET.CFG lines for IPX

```
Link Driver REMOTE
    Frame Ethernet_802.3
    ;Frame Ethernet_802.2
    ;Frame Ethernet_II
    ;Frame Ethernet_SNAP
```

NET.CFG lines for IP

```
Link Driver REMOTE
    Frame Ethernet_II
    ;Frame Ethernet_SNAP

Protocol TCPIP
    PATH TCP_CFG C:\PERLE833\TCPIP
    ip_address 100.100.100.10
```

The IP address shown in the example will be automatically created by the installation program. It is used temporarily to successfully load the IP protocol stack. The correct IP address will be given to the stack by Perle Remote when it makes a connection the Remote Access Server. See “Set up Network Parameters” on page 31 for information on how the IP address is determined.

Running in an NDIS Environment

In order to run in an NDIS environment you will need to run the Perle 833's NDIS driver **REMOTE /NDIS**.

When running in an NDIS environment it is necessary to run PROTMAN. If you are running in a DOS environment you will also need to run NETBIND. These programs are supplied by various vendors including Microsoft and IBM.

PROTMAN can be run by at least 2 methods. It can be loaded from the config.sys file, or it can be started automatically from the NETBIND program.

Loading PROTMAN from config.sys

Although this method is more straightforward to setup it comes with a caution. The PROTMAN program sets up data areas intended for the NETBIND program. Unfortunately these areas are not protected so applications that are run in the interim may inadvertently damage these data areas. If nothing is run between these two, then there is no issue. Perle supplies a utility to save and restore these data areas, called PROTSAVE. Following is an example of how it can be used. This example assumes that PROTMAN has been loaded from the config.sys. Also note that since PROTSAVE will be removed from memory, any TSRs loaded after PROTSAVE must be removed before PROTSAVE is removed.

```
REMOTE /NDIS
PROTSAVE
DIALER
PROTSAVE /U
NETBIND
```

In this example the data areas were saved prior to running the Dialer. The data areas were then restored so that NETBIND could find them.

Loading PROTMAN from NETBIND

This is the recommended method although it requires a little more setup. When running NETBIND ensure that the following lines are included in the protocol.ini file.

```
[PROTMAN_MOD]
    Drivename=PROTMAN$
```

Sample lines from CONFIG.SYS and AUTOEXEC.BAT follow.

CONFIG.SYS:

```
DEVICE=C:\IBM\PROTMAN.DOS /I:C:\IBM
```

AUTOEXEC.BAT:

```
REMOTE /NDIS      (this must be loaded before PROTSAVE)
PROTSAVE          (Saves Blocks of Data)
DIALER            (nothing that remains resident can be loaded here)
PROTSAVE /U       (Restores PROTMAN data area and removes PROTSAVE)
NETBIND
```

The user must load whatever other drivers are needed. Normally they would load DXMA0MOD.SYS (Interrupt Arbitrator) and DXME0MOD.SYS (802.2) in CONFIG.SYS to provide the necessary drivers for things like PC Support. This also requires some drivers specific to this application.

When NETBIND is run it binds the different protocol stacks as specified in the PROTOCOL.INI file. The Perle NDIS stack must be bound to the application that is using it. Sample lines from PROTOCOL.INI follow.

PROTOCOL.INI:

```
[Whatever Application]      * Their section name
    Drivename=Whatever$      * Their driver name
    Bindings=REMOTE          * The binding to our NDIS driver below

[REMOTE]                    * Our section name (must match below)
    Drivename=REMOTE$        * Our NDIS Driver name
    InstallDir=C:\PERLE833    * Where the NDIS driver language file is
    ComIRQ=3                  * Interrupt to report to higher levels
    NetworkAddress="000000123456" * MAC address to report to higher
                                levels
```

Note: The ComIRQ and NetworkAddress lines are only needed in our section if Perle Remote is using the NetBEUI/LLC protocol and the application program needs to know MAC

address. See “Set up Network Parameters” on page 31 for more details on MAC addresses.

Running in an ODI and NDIS environment

When running in this environment, the ODI drivers are setup in the same manner. In addition you will need to run a program called ODINSUP which provides an NDIS interface to your applications while talking to the ODI drivers. The ODINSUP program reads a section of the NET.CFG file for its configuration information. You will need the following section in this file:

```
PROTOCOL ODINSUP  
BIND REMOTE
```

The Tag in the BIND statement must match the Link Driver entry which was already in the NET.CFG file. This tag must also match the Bindings entry in the application section of the protocol.ini file (for the NDIS portion).

Network Software Setup

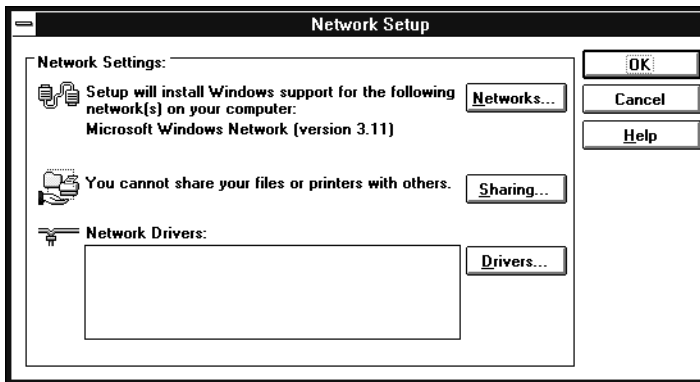
The following sections describe how to install and configure a number of network software packages for use with the Perle Remote.

Windows for Workgroups (WFW) 3.11 Environment

To setup the Perle Remote to work with Windows for Workgroups in an NDIS environment:

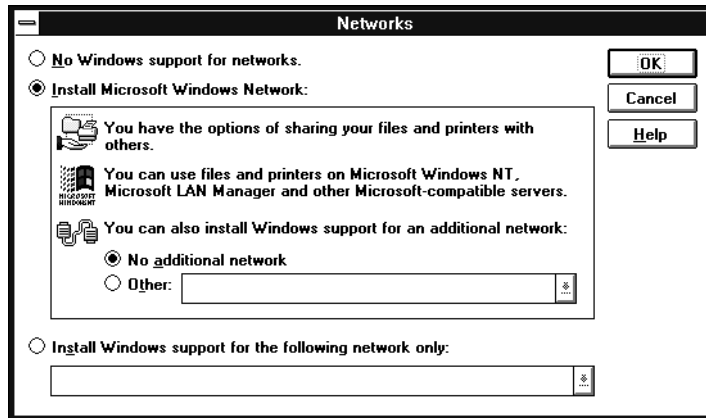
1. Install the Perle Remote for an NDIS environment.
2. Double-click the WFW 3.11 **Network Setup** icon, in the Program Manager's Network group.

The **Network Setup** dialog box is displayed.



3. Click the **Networks** button.

The **Networks** dialog box is displayed.



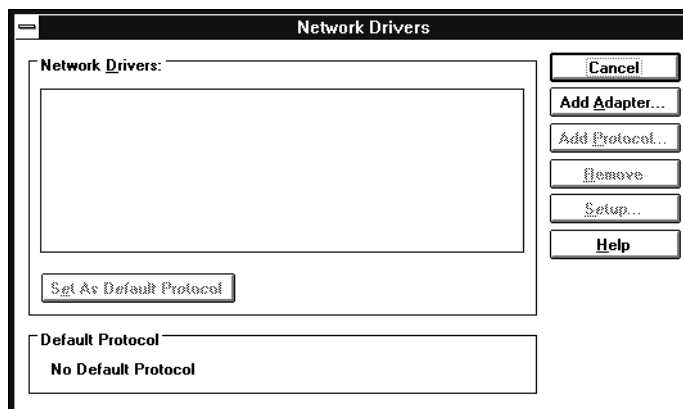
4. Click the **Install Microsoft Windows Network** radio button.

5. Click **OK** to save changes.

The **Network Setup** dialog box is displayed.

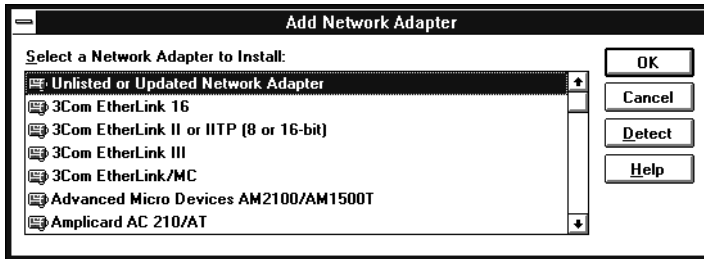
6. Click the **Drivers...** button.

The **Network Drivers** dialog box is displayed.



- Click the **Add Adapter...** button.

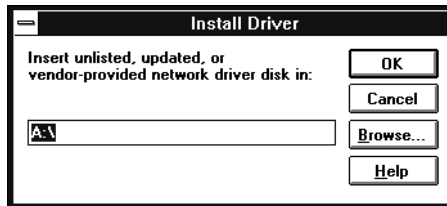
The **Add Network Adapter** dialog box is displayed.



- Select **Unlisted or Updated Network Adapter** from the list.

Click **OK**.

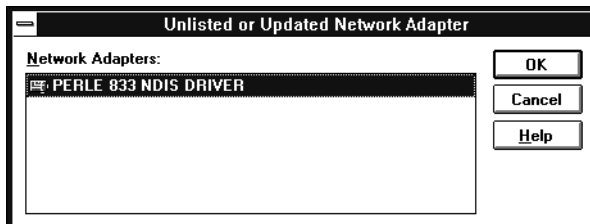
The **Install Driver** dialog box is displayed.



- Type in the drive letter and installation directory for the Perle Remote. The default is C:\Perle833

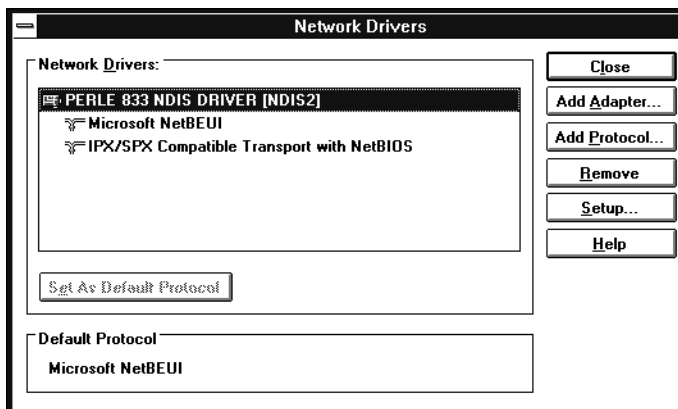
Click **OK**.

The entry “Perle 833 NDIS Driver” is displayed in the **Unlisted or Updated Network Adapter** dialog box.



10. Select the **Perle 833 NDIS Driver** entry and click **OK**.

The **Network Drivers** dialog box is displayed.



11. Select the **IPX/SPX Compatible Transport with NetBIOS** entry and click **Remove**.

The IPX/SPX protocol is not yet supported.

12. Select the **Microsoft NetBEUI** entry and click **Set As Default Protocol**.

13. If the REMOTE /NDIS driver is the only driver that has been installed, go to step 14.

If a driver for a local network adapter has been installed, make sure that you do not dial into the same network that the local network adapter card is attached to. WFW can support multiple network cards only if they are connected to different networks.

If your remote access server and your local network card are attached to the same network, dial-in will not work unless you remove the other network card. To remove the card, select the other network card's name and click **Remove**.

Note: If you do not remove the other network card, an error message is displayed telling you that a NetBIOS name conflict exists on the remote network. The dial-in connection is terminated.

14. Click **Close**.

15. The protocol.ini file used by WFW 3.11 is located in the windows directory. If fixed MAC addressing is to be used, then the COM port interrupt number and MAC address need to be manually added to the Perle 833 NDIS section of the protocol.ini file. The section should look similar to the following:

```
[REMOTE]                * Our section name (must match below)
    Drivename=REMOTE$    * Our NDIS Driver name
    InstallDir=C:\PERLE833 * Where the NDIS driver language file is
```

For an example of a full set of configuration files, see “Windows for Workgroups” on page 60.

16. Exit Windows and restart your PC.

LANtastic

To setup the Perle Remote to work with LANtastic in an NDIS environment:

1. Install the Perle Remote for an NDIS environment.
2. Insert the LANtastic Disk #1 into the floppy disk drive.
3. At the DOS prompt (C:>), type **a:install** and press **Enter**.

or

From the Windows Program Manager, select **File** and then **Run**. Type **a:install** and click **OK**.

4. Follow the prompts given by the program. When the **Select Network Adapter** screen appears, select **NDIS Support for Network Adapters** and click **OK**.
5. When prompted for the manufacturer’s driver diskette, enter the name of the directory in which the Perle Remote was installed (the default is C:\PERLE833).
6. Complete the installation by following the LANtastic prompts.
7. Use a text editor such as Edit to add or verify that the following lines have been added to the PC’s configuration files. The protocol.ini file used by Lantastic is located in the Lantastic installation directory.

```
config.sys
    lastdrive=Z
```

```

DEVICE=C:\LANTASTI\PROTMAN.DOS /I:C:\LANTASTI

autoexec.bat
    REMOTE /NDIS
    CALL C:\LANTASTI\STARTNET.BAT
protocol.ini
    [PROTOMAN]
        DRIVERNAME=PROTMAN$
        DYNAMIC=YES

    [REMOTE_NIF]
        DriverName=REMOTES$
        InstallDir=C:\Perle833

```

For an example of a full set of configuration files, see “Lantastic” on page 68.

8. Reboot your computer.

IBM Local Area Network Support Program (LSP)

To setup the Perle Remote to work with IBM LSP (version 1.31 or later) in an NDIS environment:

1. Install the Perle Remote software for an NDIS network type.
2. Insert the LAN Support Program disk in your floppy drive and start the installation aid by typing A:\DXMAID.EXE at the DOS prompt. Press **Enter**.
3. When prompted if you have an adapter disk, answer **YES**. Enter the Perle Remote directory (default is C:\Perle833) when prompted for the location of your adapter files. The Perle 833 driver should appear on the list.

Perle 833 NDIS driver.

4. Use a text editor such as Edit to verify that the following lines have been added to the PC's configuration files. The protocol.ini file used by LSP is located in the LSP installation directory.

```

config.sys
    DEVICE=C:\LSP\PROTMAN.DOS /I:C:\LSP
    DEVICE=C:\LSP\REMOTE /NDIS

autoexec.bat
    C:\PERLE833\REMOTE /NDIS
    C:\LSP\NETBIND

```

```
protocol.ini
[PROTMAN_MOD]
    DRIVERNAME=PROTMAN$

[DXMEO_NIF]
    DriverName=DXMEO$
    BINDINGS=REMOTE

[REMOTE]
    DriverName=REMOTE$
    InstallDir=C:\Perle833
```

For an example of a full set of configuration files, see “NDIS Workstation” on page 56.

5. Reboot your computer.

Microsoft LAN Manager

To setup the Perle Remote to work with LAN Manager in an NDIS environment:

1. Install the Perle Remote software for an NDIS network type.
2. Insert the LAN Manager DOS Setup disk into the floppy drive.
3. At the DOS prompt (C:>), type **A:** and press **Enter**. Type **setup** and press **Enter**. Follow the instructions given by the setup program.
4. When you are prompted to select the **Network Adapter Drivers**, choose **Other Drivers**.
5. Enter the Perle Remote directory (default is C:\Perle833) when prompted for the location of your adapter files. The Perle 833 driver should appear on the list.

Perle 833 NDIS driver.

6. Use a text editor such as Edit to verify that the following lines have been added to the PC's configuration files. The protocol.ini file used by LAN Manager is located in the LAN Manager installation directory.

```
config.sys
DEVICE=C:\LANMAN.DOS\PROTMAN\PROTMAN.DOS /I:C:\LANMAN.DOS
```

```

autoexec.bat
    REMOTE /NDIS
    CALL C:\LANTASTI\STARTNET.BAT
protocol.ini
    [PROTOMAN]
        DRIVENAME=PROTMAN$
        DYNAMIC=YES
        PRIORITY=NETBEUI

    [NETBEUI_NIF]
        DriverName=netbeui$
        SESSION=6
        NCBS=12
        BINDINGS=REMOTE
        LANABASE=0

    [REMOTE]
        DriverName=REMOTE$
        INSTALLDIR=C:\Perle833

```

For an example of a full set of configuration files, see “Microsoft LAN Manager - NDIS” on page 71.

IBM LAN Server

To setup the Perle Remote to work with LAN Server in an NDIS environment:

1. Install the Perle Remote software for an NDIS network type.
2. Insert the DOS LAN Services Disk 1 into the floppy drive.
3. At the DOS prompt (C:>), type **A:** and press **Enter**. Type **setup** and press **Enter**. Follow the instructions given by the setup program.
4. When you are prompted for a *Network Card*, select **Network Card not shown in list below** and press **Enter**.
5. Enter the Perle Remote directory (default is C:\Perle833) when prompted for the location of your adapter files. The Perle 833 driver should appear in the list.

Perle 833 NDIS DRIVER.

6. Edit the *Protocol Driver* setting and set the **Maximum Sessions** to a value of 10 or less.

7. Confirm that the selected options are correct and finish the installation.
8. Use a text editor such as Edit to verify that the following lines have been added to the PC's configuration files. The protocol.ini file used by LAN Server is located in the LAN Server installation directory.

```
config.sys
DEVICE=C:\NET\PROTMAN.DOS /I:C:\NET
DEVICE=C:\NET\DLShelp.sys
```

```
autoexec.bat
C:\PERLE833\REMOTE /NDIS
C:\NET\NET START
```

```
protocol.ini
[protman]
DriverName=PROTMAN$
PRIORITY=ibm$NETBEUI

[REMOTE]
DriverName=REMOTE$
INSTALLDIR=C:\Perle833

[IBM$NETBEUI]
DriverName=netbeui$
SESSIONS=10
NCBS=20
BINDINGS=REMOTE
LANABASE=0
```

For an example of a full set of configuration files, see “IBM LAN Server - NDIS” on page 70.

What next?

At this point, you can configure the Dialer for your application.

Chapter 3: **Configuring and Using the Dialer**

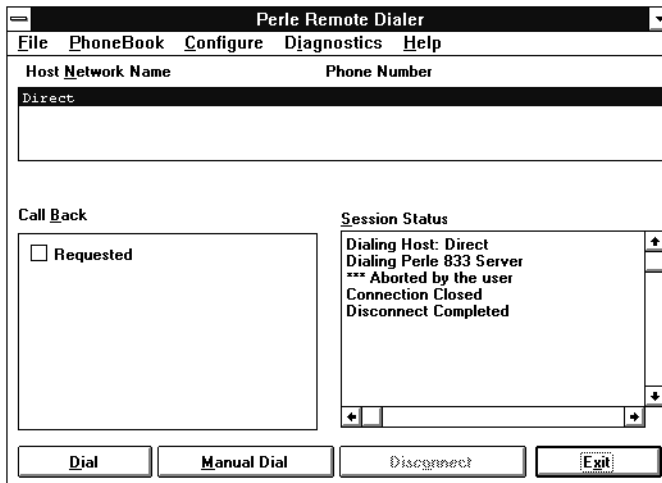
This chapter will explain how to configure and use the Perle Remote Dialer to establish a network connection.

In this chapter you will read about:

- Running the Perle Remote Dialer
- Configuring the following Dialer Parameters
 - Port
 - Modem
 - Phone Book Entries
 - Network Parameters
 - Saving a Configuration
- Making a Connection
- Ending your Connection

Starting the Windows Dialer

1. Run Windows.
2. Double click on the Windows Dialer icon in the Perle 833 Program Group. The Windows Dialer loads, and the main screen is displayed.



Note: This procedure assumes that you chose to have the **REMOTE** program started automatically when the PC starts up. If this was not done, a warning message will be displayed and dialing will be disabled. To operate the Windows Dialer:

- Exit Windows.
- In DOS, go to the Dialer directory (the default is PERLE833), and from the DOS prompt, type **REMOTE**, then press **Enter**.
- Repeat steps 1 and 2.

Starting the DOS Dialer

1. Go to the Dialer directory (the default is PERLE833), and from the DOS prompt, type **REMOTE**, then press **Enter**.

Note: If during installation you chose to have the program start automatically when the PC starts up, you may not need to run **REMOTE**.

2. Type **DIALER** and press **Enter** to get to the Dialer main screen.

Perle Remote Dialer

File PhoneBook Configure Diagnostics Help

Host Network Name Phone Number

Direct

Call Back

[1] Requested

Session Status

Dialing Host: Direct
Dialing Perle 833 Server
*** Aborted by the user

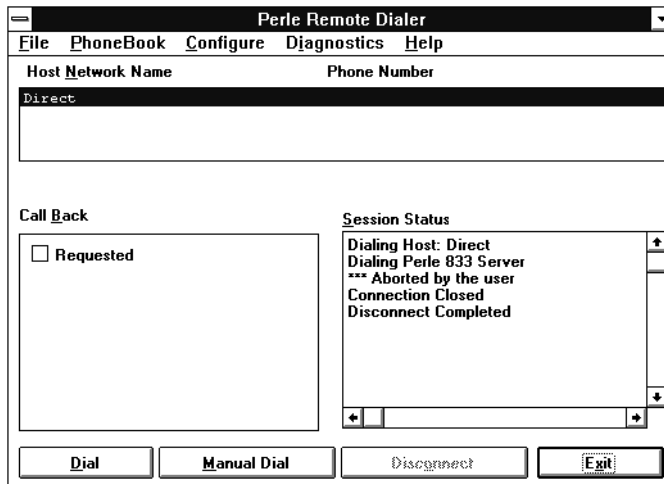
Dial Manual Dial Disconnect Exit

Dialer Configuration

The Perle Remote Dialer is used to make the connection between the Perle Remote PC and the Perle 833 server. The following are the minimum configuration steps required to allow the Dialer to make a connection.

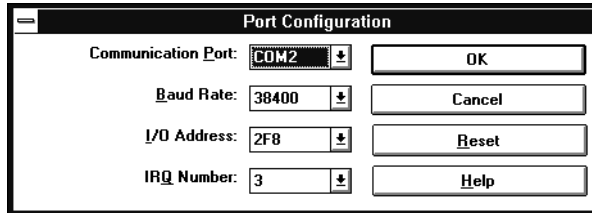
1. Set up the COM port for the modem.
2. Set up the modem hardware.
3. Set up the phone number for the 833 Server.
4. Set up the Network Parameters if required.

Note: All instructions apply to both the DOS and Window Dialers. Both applications are similar in presentation and function. This chapter shows only the Windows screens.



Set up the PC COM port

1. Choose **Port** from the **Dialer Configure** menu.



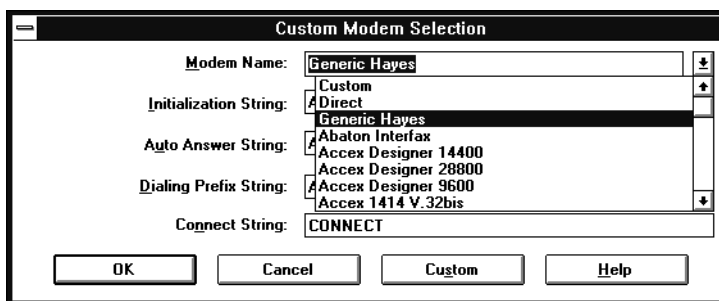
2. A dialog box appears. Choose the proper COM port, IRQ, and I/O address and click **OK**.

When you select a COM port, the Dialer assumes the most commonly used I/O address and IRQ settings for that COM port. If you are unsure what your I/O addresses and IRQ settings should be, please check with your network administrator.

If you are not using a buffered COM port, the maximum baud rate is 19200.

Set up the modem

1. Choose **Modem** from the **Dialer Configure** menu.
2. Pick a modem by clicking on the arrow next to the modem name field. Scroll to the modem that matches the modem connected to your PC and click **OK**.

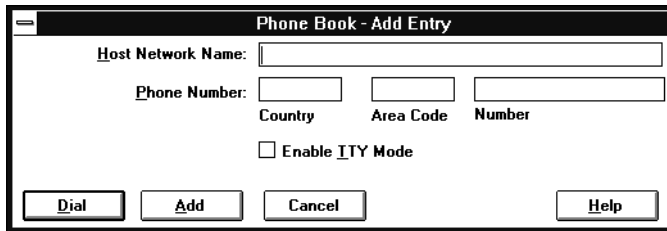


Note: If you cannot find a matching modem, the default modem setting (Hayes) is adequate for establishing an initial connection. However, a more advanced setup tailored to your specific modem could provide better performance with the Perle 833.

Set up a Phone Number for the Perle 833 Server

For each Perle 833 server, you must define a PhoneBook entry. Each entry consists of a name and a telephone number to dial. To create a PhoneBook entry:

1. From the **Dialer PhoneBook** menu, choose **Add Record**. The **Phonebook** dialog box appears.

The image shows a dialog box titled "Phone Book - Add Entry". It contains a text field for "Host Network Name:" and three text fields for "Phone Number:" labeled "Country", "Area Code", and "Number". There is a checkbox labeled "Enable ITY Mode". At the bottom, there are four buttons: "Dial", "Add", "Cancel", and "Help".

2. In the **Host Network Name** field, enter a name for this entry.
Spaces and punctuation are allowed. The name is for informational purposes only, and should be chosen to remind you of which Perle 833 you will connect to, and where it is.
3. In the **Phone Number** field, enter the phone number of the Perle 833. If necessary, fill in the **Country** and **Area Code** fields. Your network administrator can give you this information.
4. Click **Add**. The dialog box disappears and the entry is added to the list in the **Host Network Name** box of the Dialer main screen.

Editing a Phonebook Entry

1. On the Dialer main screen highlight the phone book entry that is to be edited.
2. From the **Dialer PhoneBook** menu, choose **Edit Record**. The **Phonebook** dialog box appears.
3. Change the **Host Network Name** or **Phone Number** field as required.

Deleting a Phonebook Entry

1. On the Dialer main menu highlight the phone book entry that is to be deleted.
2. From the **Dialer PhoneBook** menu, choose **Delete Record**.
3. Click **OK** to confirm the deletion of the phonebook entry.

Set up Network Parameters

Perle Remote enables all supported protocols by default. For many users there will be no need to configure the network parameters. The exceptions are:

Enable Protocols

Disabling the protocols can improve efficiency of the Perle Remote by reducing the amount of traffic between the Perle Remote PC and the Perle 833 server.

MAC Address

The NetBEUI/LCC protocol uses MAC addressing to send and receive data packets to the Perle 833 server. The server provides a MAC address to the Perle Remote when the Perle Remote makes a connection to the server. If an application running on the Perle Remote PC needs to know this MAC address before the connection is made, then the MAC Address should be configured.

Enable Compression

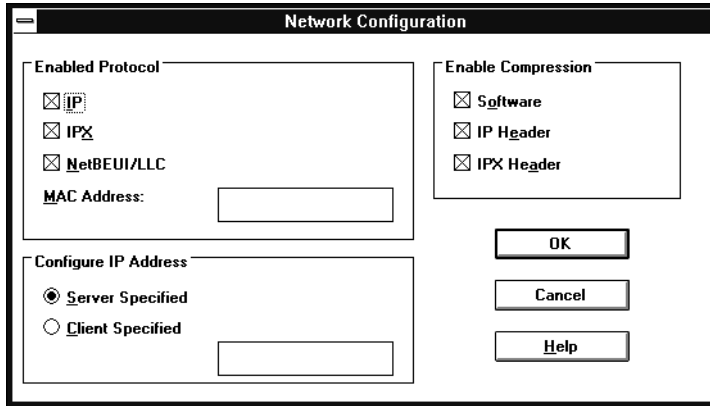
These compression options can be disabled for the following reasons:

- Many modems already provide software compression. Disabling **Software** compression may improve performance with these modems.
- Disabling compressions will reduce the amount of memory needed for the Client.

Note: The client PC will have to be rebooted after compression has changed.

To configure the network parameters:

1. Choose **Network** from the Dialer **Configure** menu. The **Network Configuration** dialog box appears.



The **Network Configuration** dialog box is shown. It has a title bar with the text "Network Configuration". Inside, there are three main sections: "Enabled Protocol", "Enable Compression", and "Configure IP Address". The "Enabled Protocol" section has three checked checkboxes: ☒ IP, ☒ IPX, and ☒ NetBEUI/LLC. Below these is a "MAC Address:" label followed by an empty text box. The "Enable Compression" section has three checked checkboxes: ☒ Software, ☒ IP Header, and ☒ IPX Header. The "Configure IP Address" section has two radio buttons: ☒ Server Specified and ☐ Client Specified, with an empty text box below. On the right side of the dialog are three buttons: "OK", "Cancel", and "Help".

2. Enable the protocols required by selecting or clearing the appropriate check boxes in the **Enabled Protocols** group.
3. If the **NetBEUI/LCC** protocol option is selected, the **MAC Address** field is enabled.

In the MAC Address field, enter the MAC address. It is a 12 character hexadecimal number. This MAC address must match the address configured on the Perle 833. This is an optional field.

Note: If the MAC address provided by the network administrator is a Token-Ring address, then it must be converted to Ethernet format. See "Appendix D: MAC Address Conversion" on page 75 for instructions on how to make the conversion.

The MAC address will be saved in the following files in the Perle Remote directory (default is PERLE833):

- **net.cfg** for the ODI environment.
- **protocol.ini** for the NDIS environment.

If the network software is using a version of the above files that are not located in the Perle Remote directory, then the MAC address will need to be added manually to those files.

4. Specify one of the IP Address assignment method in the **Configure IP Address** group
 - Select **Server Specified** if the Perle 833 has been configured to supply an IP Address.

- Select **Client Specified** if the Perle 833 has been configured to allow the dial-in client to specify an IP Address. Enter an IP address in dotted decimal notation.
- Enable or disable the compression methods by selecting or clearing the appropriate check boxes in the **Enable Compression** group.

Note: The client PC will have to be restarted and the **REMOTE** client run again for any change in this field to take effect.

5. Click **OK**.

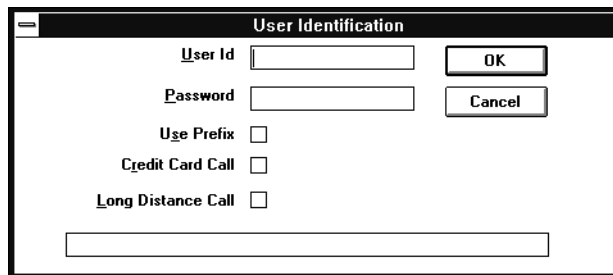
Saving a Configuration

From the Dialer **File** menu, choose **Save** (or enter CTRL+S). The configuration parameters will be saved in a file called **dialer.ini**. This file will be automatically read the next time the dialer is run.

Making a Connection

Using a PhoneBook Entry

1. From the Dialer main screen, highlight the desired **Host Network Name** and choose **Dial**. The **User Identification** dialog box appears.



The image shows a 'User Identification' dialog box. It has a title bar with the text 'User Identification'. Inside the dialog, there are two text input fields: 'User Id' and 'Password'. To the right of these fields are two buttons: 'OK' and 'Cancel'. Below the 'Password' field, there are three checked boxes: 'Use Prefix', 'Credit Card Call', and 'Long Distance Call'. At the bottom of the dialog, there is a large empty text area.

2. In the user ID and password fields, enter your user ID and password provided by the network administrator.
3. The following options will alter the telephone number displayed at the bottom of the **User Identification** dialog box. The use of these options requires that a User Profile has been configured. See “Setting Up Your User Profile” on page 44 for configuration instructions.

Use Prefix

If the Dial Prefix number is required, check the Use Prefix option. The **Dial Prefix** field is generally used to access an outside line through a PBX. The number will be inserted at the beginning of the telephone number followed by commas. The commas are used to delay dialing until a connection to the outside line is made.

Credit Card Call

If you wish to use your credit card to pay for this call, check the Credit Card option. Your credit card number will be inserted into the telephone number.

Long Distance Call

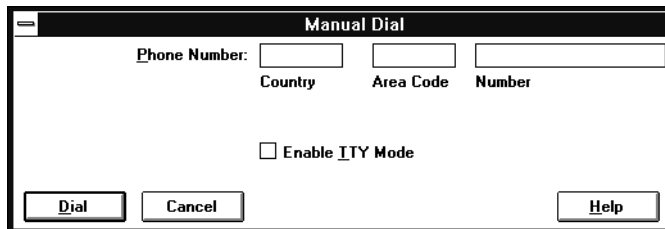
If this connection requires a long-distance call, check the Long Distance Call option. The long distance access code will be inserted into the telephone number.

4. If all information is correct, click **OK**. The Dialer main screen will appear and the Dialer will start the connection. The User ID, Use Prefix and Credit Card Call selections can be saved in the configuration file.

Manual Dialing

This feature is used to quickly make a call without setting up a phone book entry.

1. From the Dialer main screen, click the **Manual Dial** button. The **Manual Dial** dialog box appears.

The image shows a 'Manual Dial' dialog box. It has a title bar with the text 'Manual Dial'. Inside the dialog, there is a label 'Phone Number:' followed by three text input fields. Below the first field is the label 'Country', below the second is 'Area Code', and below the third is 'Number'. There is a checkbox labeled 'Enable ITY Mode'. At the bottom of the dialog, there are three buttons: 'Dial', 'Cancel', and 'Help'.

2. Enter the phone number of the Perle 833 server you wish to connect to, then click on **Dial**.
3. The **User Identification** dialog box appears. Complete the connection process by following the steps in section “Using a PhoneBook Entry” above.

Connection Status

In the Session Status window, you will see the progress of the connection. When your connection is established, the DOS Dialer will beep several times and exit back to DOS. The Windows Dialer will not exit. You can now use the network services as if you were attached locally to the LAN.

Ending Your Connection

1. Start the Dialer.
2. On the Dialer main screen, click on the **Disconnect** button. The Dialer will signal the modem to disconnect the call. The status of the disconnect can be viewed in the Session Status window.

Chapter 4: Dialer Advanced Features

This chapter gives descriptions of the advanced features and configuration options of the Perle Remote.

In this chapter you will read about:

- Connection Cost Management-ISDN
- Optimizing a remote user's performance (filtering, Load-Alert)
- Security (PAP, CHAP, Call Back, TTY Mode)
- Custom configuration (modem configuration, creating a User Profile)
- Network administration (Log files).

Connection Cost Management for ISDN

ISDN services are frequently charged based on connection time in addition to the monthly line fee. In order to reduce charges, the Perle Remote can be configured to disconnect from the Remote Access Server in periods of inactivity, but the session will not be brought down (often referred to as “spoofing”). When the Perle Remote requires a service from the network, the connection will be automatically re-established.

To support this feature a proper ISDN Terminal Adapter (TA) must be selected from the modem list. If you do not find your TA in the list, use the Generic Hayes modem and then customize it to set the appropriate parameters. The user must set up certain ISDN network information (e.g. SPID, switch type, directory, directory number) in the Terminal Adapter.

The following protocol addressing conditions must be met for a connection to be re-established.

IP

The Perle Remote must have the same address each time it reconnects to the server. The IP addressing methods allowed are:

- Client specified address
- Server supplies address from User List
- Server supplies address from DHCP server. Reconnect must be enabled with a sufficiently long lease time

IPX

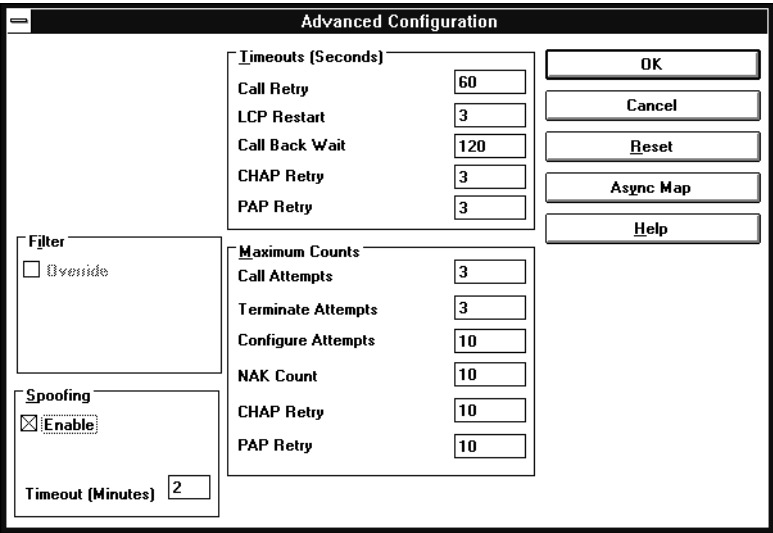
The network number must match each time the Perle Remote reconnects to the server. A unique network number is assigned to each Perle 833 server on the network. Therefore, the Perle Remote must reconnect to the same Perle 833 server each time.

NetBEUI/LCC

The Perle Remote must have the same MAC address each time it reconnect to the server. This is done by using Fixed MAC Addressing on the Perle 833 server.

To configure the Spoofing feature:

1. Choose **Advanced** from the **Dialer Configure** menu. The **Advanced Configuration** dialog box appears.
2. Select **Enable** within the Spoofing Box to disconnect from the Server after the specified timeout with no user activity.



The image shows a screenshot of the 'Advanced Configuration' dialog box. It has a title bar with a minus sign and the text 'Advanced Configuration'. The dialog is divided into several sections. On the left, there is a 'Filter' section with a checkbox labeled 'Override' which is unchecked. Below it is a 'Spoofing' section with a checkbox labeled 'Enable' which is checked. At the bottom left is a 'Timeout (Minutes)' field with the value '2'. In the center, there are two tables of settings. The first table is titled 'Timeouts (Seconds)' and contains five rows: 'Call Retry' with value '60', 'LCP Restart' with value '3', 'Call Back Wait' with value '120', 'CHAP Retry' with value '3', and 'PAP Retry' with value '3'. The second table is titled 'Maximum Counts' and contains five rows: 'Call Attempts' with value '3', 'Terminate Attempts' with value '3', 'Configure Attempts' with value '10', 'NAK Count' with value '10', and 'CHAP Retry' with value '10'. On the right side of the dialog, there are five buttons: 'OK', 'Cancel', 'Reset', 'Async Map', and 'Help'.

Timeouts (Seconds)	
Call Retry	60
LCP Restart	3
Call Back Wait	120
CHAP Retry	3
PAP Retry	3

Maximum Counts	
Call Attempts	3
Terminate Attempts	3
Configure Attempts	10
NAK Count	10
CHAP Retry	10

3. In the **Timeout** (Minutes) field, enter a value for the inactivity timeout. The default value is two minutes. The range is 1 to 255 minutes.

Optimizing a Remote User's Performance

This section provides instructions for configuring or using the Perle Remote's optimization features.

Filter

Through this option you can either enable or disable the Perle 833's ability to filter out Broadcast and Multicast frames (both types or just one) on the link. The settings of these filters depend on the protocol used. For example, for IPX, you would normally set Broadcast and Multi-cast to filter; and if using NetBEUI, you would set Multicast to pass. See your network administrator for the correct settings. To configure the filter feature:

1. From the **Dialer Configure** menu, select **Advanced**. The **Advanced Configuration** dialog box appears.

Advanced Configuration	
Timeouts (Seconds)	
Call Retry	60
LCP Restart	3
Call Back Wait	120
CHAP Retry	3
PAP Retry	3
Maximum Counts	
Call Attempts	3
Terminate Attempts	3
Configure Attempts	10
NAK Count	10
CHAP Retry	10
PAP Retry	10
Filter	
<input checked="" type="checkbox"/> Override	
Broadcast	Filter
Multicast	Pass
Spoofing	
<input type="checkbox"/> Enable	
<input type="button" value="OK"/> <input type="button" value="Cancel"/> <input type="button" value="Reset"/> <input type="button" value="Async Map"/> <input type="button" value="Help"/>	

2. Click on the **Override** check box under **Filter**.
3. Select **Pass** or **Filter** for the **Broadcast** and **Multicast** fields.

Load-Alert

Load-Alert is a program that monitors the dial-up connection to the LAN. If you are about to load an application from the network, an “alert” message is displayed, giving you the option to proceed or to cancel the request.

This feature is particularly useful if you have a copy of an application (or any program) on both the PC and on the network. It is recommended that you run the local copy instead of the network copy for speed and configuration purposes.

Using Load-Alert in DOS

If you choose to use Load-Alert when you are installing client software, the RUNP833 batch will be modified to invoke it. If you choose to start it manually, use the following procedure:

Change to the install directory:

```
c:
cd \ Perle833
LALERT.
```

To remove it from memory, follow this procedure:

```
c:
cd \ Perle833
LALERT /u.
```

Using Load-Alert from Windows

If you choose to use Load-Alert when you are installing the client software, the appropriate files will be modified to ensure it gets activated. If you choose to start it manually, use the following procedure:

1. Follow the DOS procedure listed above to load the DOS portion (this must be done before Window is started.)
2. From the **Run** menu in Program Manager, start the program **LALERT** from the c:\ Perle833 directory.

Security

The security features of the Perle 833 system are controlled by the server and cannot be disabled by a remote user.

PAP and CHAP

The Password Authentication Protocol (PAP) and the Challenge Handshake Authentication Protocol (CHAP) are the authentication features of the PPP protocol. The dialer can be used to configure timeouts and maximum counts for PAP and CHAP. This is done by:

1. Select **Advanced** from the **Dialer Configuration** menu. The **Advanced Configuration** dialog box appears.

The image shows a dialog box titled "Advanced Configuration". It contains several sections for configuring timeouts and maximum counts. On the left, there is a "Filter" section with a checkbox labeled "Override" and a "Spoofing" section with a checkbox labeled "Enable" and a "Timeout (Minutes)" field set to "2". The main area is divided into two columns. The left column is titled "Timeouts (Seconds)" and contains five rows: "Call Retry" (60), "LCP Restart" (3), "Call Back Wait" (120), "CHAP Retry" (3), and "PAP Retry" (3). The right column is titled "Maximum Counts" and contains five rows: "Call Attempts" (3), "Terminate Attempts" (3), "Configure Attempts" (10), "NAK Count" (10), and "CHAP Retry" (10). On the far right, there are five buttons: "OK", "Cancel", "Reset", "Async Map", and "Help".

Timeouts (Seconds)	
Call Retry	60
LCP Restart	3
Call Back Wait	120
CHAP Retry	3
PAP Retry	3

Maximum Counts	
Call Attempts	3
Terminate Attempts	3
Configure Attempts	10
NAK Count	10
CHAP Retry	10
PAP Retry	10

Buttons: OK, Cancel, Reset, Async Map, Help

2. Enter values for the following fields

CHAP Retry Time-out

This is how long CHAP will wait for a response before retrying.

PAP Retry Time-out

This is how long PAP will wait for a response before retrying.

CHAP Retry Count

This is how many times CHAP will retry before disconnecting from the server.

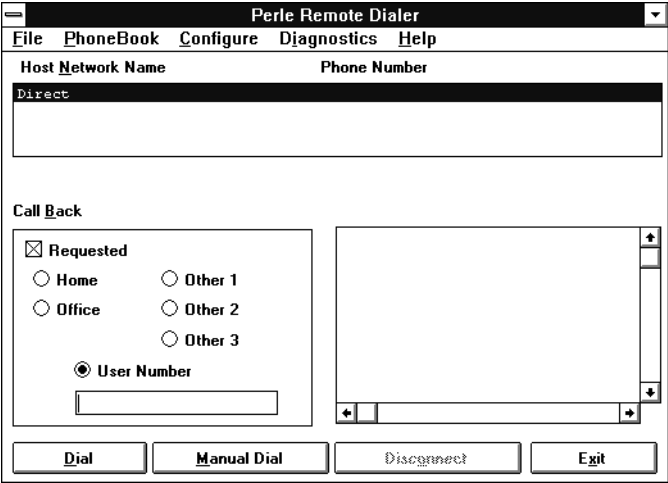
PAP Retry Count

This is how many times PAP will retry before disconnecting from the server.

Call Back

When a remote user calls in to a Perle 833 and Call Back has been set up, the Perle 833 will disconnect and then call the user back according to the Perle 833’s configuration and the user’s privileges.

Call Back in the Dialer is enabled by clicking Requested under Call Back on the Dialer Main Screen. The settings for Call Back in the Dialer must match the settings configured by the network administrator in the Perle 833 to which you are connecting.



Call Back Security

Call Back Security is controlled from the Perle 833 server. The settings can be either **Disabled**, **Required**, or **Allowed**. When **Required** is selected, the user must be called back by the server. If Call Back is not requested on the Dialer, then the Perle 833 server will disconnect the user and will not call back.

The Perle 833 can be requested to dial back on one of five phone numbers it stores. (Since the actual phone number is never transmitted on the serial line, an unauthorized user cannot attach to the Perle 833.)

A phone number can be entered into the **User Number** field of the Dialer main screen. This specifies

the number for the Perle 833 to call if the configuration allows it. This is referred to as Call Back. This allows a user calling from an area where phone rates are high to reduce toll charges.

Centralized Billing

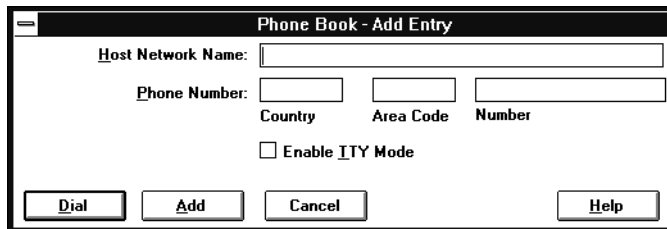
Call Back can be used to centralize all phone charges for the Perle 833 server. The network administrator configures the Perle 833 for Required Call Back. All dial-in clients will have to request Call Back and as a result all telephone charges for the server will be billed to the telephone lines connected to the server.

TTY Mode

The Perle 833 and the Dialer can be configured to use a security device that uses TTY mode during password authentication. When the Dialer has made a connection, a TTY window will open. Follow the prompts from the security device to log in. When your access has been authorized, click on **Continue** to access the LAN.

To configure TTY mode on the Dialer:

1. Select **Add Record** from the **Dialer Phone Book** menu. The **Phone Book-Add Entry** dialog box appears.
2. Click on the **Enable TTY Mode** check box.



The image shows a dialog box titled "Phone Book - Add Entry". It contains the following fields and controls:

- Host Network Name:** A single-line text input field.
- Phone Number:** Three separate text input fields labeled "Country", "Area Code", and "Number".
- Enable TTY Mode:** A checkbox.
- Buttons:** "Dial", "Add", "Cancel", and "Help" are located at the bottom of the dialog.

Creating a Custom Modem Configuration

If your particular modem does not appear on the provided modem list, or if you wish to take advantage of some special features of your modem, you can create a custom modem configuration.

1. From the **Dialer Configure** menu, choose **Modem**.
2. Scroll up or down in the **Modem Name** field to find a similar modem, then click **Custom**. All custom modem configurations are based on existing configurations.

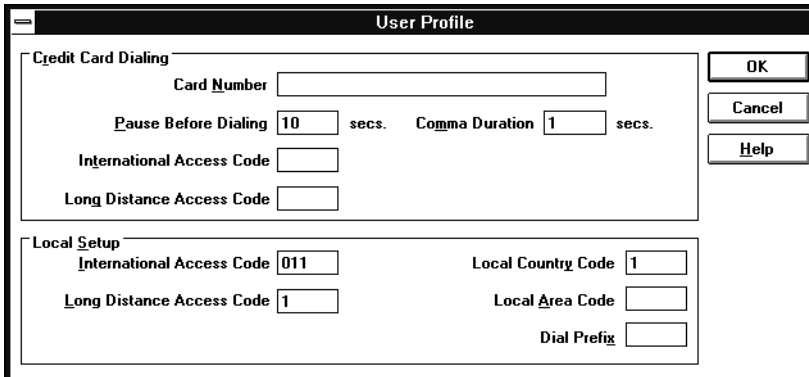
Suggestion: The Hayes option is often a good place to start.

3. Enter or modify the modem name.
4. Type in the proper initialization strings (refer to your modem documentation.) Change any other necessary parameters, and click **OK**.
5. The custom modem configuration is complete.
6. From the **File** menu, choose **Save** to save the new configuration.

Setting Up Your User Profile

The User Profile screen allows the Dialer to be setup for credit card dialing, long distance dialing, and accessing an outside line.

To do this, choose **User** from the **Dialer Configure** menu. The **User Profile** dialog box appears.



The image shows a 'User Profile' dialog box with two main sections: 'Credit Card Dialing' and 'Local Setup'. The 'Credit Card Dialing' section includes fields for 'Card Number', 'Pause Before Dialing' (set to 10 secs), 'Comma Duration' (set to 1 secs), 'International Access Code', and 'Long Distance Access Code'. The 'Local Setup' section includes fields for 'International Access Code' (set to 011), 'Local Country Code' (set to 1), 'Long Distance Access Code' (set to 1), 'Local Area Code', and 'Dial Prefix'. On the right side of the dialog, there are three buttons: 'OK', 'Cancel', and 'Help'.

Credit Card Dialing	
Card Number	<input type="text"/>
Pause Before Dialing	<input type="text" value="10"/> secs.
Comma Duration	<input type="text" value="1"/> secs.
International Access Code	<input type="text"/>
Long Distance Access Code	<input type="text"/>

Local Setup	
International Access Code	<input type="text" value="011"/>
Local Country Code	<input type="text" value="1"/>
Long Distance Access Code	<input type="text" value="1"/>
Local Area Code	<input type="text"/>
Dial Prefix	<input type="text"/>

OK
Cancel
Help

Credit Card Dialing

1. In the **Card Number** field, enter your calling card number.
2. In the **Pause Before Dialing** field, indicate the time delay between the modem going off hook and the start of dialing.
3. The **Comma Duration** field shows the number of seconds to wait for each comma in the dial string.
4. In the **International Access Code** field, enter the dial prefix code needed to make international calls with a credit card.
5. In the **Long Distance Access Code** field, enter the dial prefix code needed to make long distance calls using a credit card.

Local Setup

1. In the **International Access Code** field, enter the dial prefix code needed to make international calls.
2. In the **Long Distance Access Code** field, enter the dial prefix code needed to make long distance calls.
3. Enter the proper values in the **Local Country Code** and **Local Area Code**. These values will be compared to the selected phone book entry when dialing. Only the required number of digits will be dialed.
4. The **Dial Prefix** field is generally used to access an outside line through a PBX. Enter the correct value for your location.

DOS Dialer Command Line Options

Once you have the DOS Dialer set up the way you want it, it can be quicker and easier to control it from the DOS command line without using the menus. You can do the following using Dialer command line options:

- Dial a number
- Log in to a Perle 833
- Close an existing connection
- Load a different configuration.

Dialer command line options are described below. They are not case-sensitive.

Note: You can get a description of these parameters by typing **DIALER/?** at the DOS prompt. Command line options are not supported by the Windows Dialer.

DIALER [/H *host name* /N *host number* /U *user ID* /L *location*
/P [*password*] /D /C *filename*] /M [*modem* /B

Option	Description
/H <i>host name</i>	Dial the number associated with host name in Dialer. Do not use this when using the /N option.
/N <i>number</i>	Dial the specified number. Do not use this when using the /H option.
/U <i>user ID</i>	Give the stated user ID to the called Perle 833.
/L <i>location</i>	Give call back information, where: D is the default. H is the number defined as Home on the server. O is the Office number. 1, 2, or 3 are the numbers for Option 1, Option 2, or Option 3. P number is a user-defined number. Note: Use only one of these options at a time.
/P [<i>password</i>]	Give the password associated with the user ID given. If no password has been configured, use /P without the password.
/D	Disconnect an existing connection and immediately exit Dialer.

Option	Description
/C <i>filename</i>	Specify a Dialer configuration other than the standard DIALER.INI. This is useful if you want to use two different COM port configurations without having to change each parameter from Dialer menus each time.
/M [<i>modem</i>]	Specify a modem name. All of the valid modem -names can be displayed using the pull down on the Modem Selection dialog box. Note: The square brackets must be included in the command.
/B	Causes Dialer to run in batch mode. The program will terminate when the Dialer's connection attempts have been completed. The program will return an exit code if run from a batch file. The exit codes are listed below: 0 Connection Successful 1 Disconnect from command line 2 Number of modems greater than maximum imposed 3 Number of telephone numbers greater than maximum imposed 4 Bad command line switch 5 Error in file dialer.ini 6 Missing configuration file 7 Command line unmatched quoted string 8 Already having a connection 9 Dial timed out 10 No response from server 11 Local configuration does not match server configuration 12 Unknown user specified 13 User already logged on 14 Authentication failed 15 Server has no number for call back 16 Server has no ports available 17 Call Back timed out 18 Spoofing is not supported if TTY mode is selected

Link Control Protocol Parameters

The Perle 833 server uses the Point-to-Point Protocol (PPP) in its “virtual” WAN communication. The Link Control Protocol (LCP) is used to set up the serial link for transferring PPP frames. IP and IPX traffic is encapsulated within the PPP frames.

You should not be changing these parameters under normal conditions. If you are familiar with PPP and specifically these LCP parameters, then these values can be adjusted to compensate for specific network characteristics.

To configure these parameters:

- 1. Select **Advanced** from the **Dialer Configuration** menu. The **Advanced Configuration** dialog box appears.

Advanced Configuration

Timeouts (Seconds)

Call Retry

60

LCP Restart

3

Call Back Wait

120

CHAP Retry

3

PAP Retry

3

Filter

☐ Override

Spooling

☒ Enable

Timeout (Minutes)

2

Maximum Counts

Call Attempts

3

Terminate Attempts

3

Configure Attempts

10

NAK Count

10

CHAP Retry

10

PAP Retry

10

OK

Cancel

Reset

Async Map

Help

- 2. Enter values for the following counter and timers to fine tune the PPP performance. Ask your network administrator for proper values.

Call Retry

This field specifies the number of seconds between call retries.

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LCP Restart

This field specifies the number of seconds a receiver of a PPP terminate request will wait after receiving the message before disconnecting. This ensures the proper transmission of all messages.

Call Back Wait

This specifies the number of seconds that the Dialer will wait for a call back from the Perle 833.

Call Attempts

The maximum number of times the Dialer will re-dial a phone number if the connection fails.

Terminate Attempts

The maximum number of times that PPP will attempt a “Terminates” request without success before dropping the line.

Configure Attempts

Configuration is the process by which server and client negotiate operating parameters. This is the maximum number of configuration attempts without reply that the client will attempt before dropping the line.

NAK Count

During negotiation either side can NAK a configuration message if the options are not acceptable. This number represents the maximum number of NAKs that will be accepted by the client before the line is dropped.

Async Control Character Map

This is an advanced feature of PPP. It can be used when the link requires certain asynchronous control characters to be masked during transmission. Although rare, this need can arise when communications equipment interprets some data characters as commands.

By marking the offending characters on the Async Control Character Map, you inform the Perle Remote that these characters should be removed from the data stream. They are replaced by a special two-character code that the communication equipment can tolerate. When the two-character codes are received by the server, they are automatically converted back into the original characters.

To re-map any character, click on the **Async Map** button on the **Advanced Configuration** dialog box. Then click on the characters to be re-mapped.

Reset to Default

The **Reset** button resets all parameters on the **Advanced Configuration** dialog box to their default values.

Network Administration

Using the Log File

The contents of the **Session Status** box can be written to a file using the **Save Log File** command in the **Dialer Diagnostics** menu. The file is called **dialer.log** and is located in the installation directory (default is C:\PERLE833). The file is overwritten each time the **Save Log File** command is invoked. The file can be opened with a text editor and inspected when troubleshooting connection problems.

Appendix A: Troubleshooting

This section contains information to help you solve problems you might encounter when using the Perle Remote software with your communications program.

What to Check First

When you encounter a problem in making a dial-in call, check the following items first.

Is the dial-in software installed on the user's PC?

Does your PC conform to the system requirements?

Has the network administrator given you the access privileges (user name, password, Call Back options, etc.) to the Perle 833 server?

Is the modem properly attached?

Is the correct COM port selected on your PC?

Have you recently changed your communications program? If so, either the Perle Remote software or the communications program may require reconfiguration.

Problems and Solutions

Table 1: Problems and Solutions

Questions	Answers	Windows or DOS Users
If I reboot while a session is in progress, the modem doesn't hang up and line charges occur.	Make sure your network administrator has not disabled "time-outs" on the server. Do not reboot the PC until the modem has been disconnected by using the Perle 833 dialer.	both
When I dial into the network with Call Back requested, the Perle 833 never calls back.	If the network administrator has not enabled "Call Back" for your account, the server will not hang up, but will continue with the connection.	both
When I dial in, it gives me "No ports available".	This means that either all the ports are busy on the Perle 833, or you were not assigned to a modem pool.	both
My PC keeps dropping the session.	Some PCs use unbuffered UARTS (8250s and 16450s). Try adding the command line option "/B:1000" when starting the client program. (i.e. "REMOTE /ODI /B:1000 " for the ODI version of the client)	both

Error Messages

Table 2: Error Messages

Error Message	When it occurs	Cause	Solution
“REMOTE TSR is not loaded.”	If you are dialing into the network. (Windows and DOS users).	Client Software (REMOTE.EXE) is not loaded.	Make sure the network drivers are loaded. When the software is successfully loaded, it displays the message “Initialization Completed”.
“Lost connection to REMOTE TSR.”	Windows only.	Same as above.	Exit Perle 833 Manager and exit Windows. Load REMOTE.EXE, then load Dialer. When Dialer establishes a connection and exits, load the Manager.
“Lost connection to the Perle 833.”	Same as above.	Same as above.	Same as above.
“REMOTE TSR is loaded but cannot connect to it.”	Same as above.	Baud rate set too high.	If you are using a 16450 UART, try command line option “/B:1000” when starting the client (i.e. “REMOTE /ODI /B:1000” for the ODI version of the client), or use a baud rate of 19,200 or lower.

Appendix B: Perle Remote PC Configuration Examples

Introduction

Example configurations are provided for the following types of Workstations:

- NDIS
 - Example 1
 - Example 2
- ODI-VLM/NDIS
- Windows for Workgroups
- NETX ODI
- Packet Burst Mode VLM ODI
- NDIS + NETMANAGE from CHAMELEON
- ODI + NETMANAGE from CHAMELEON
- LAN Workplace for DOS + NFS for LAN Workplace
- ODI TCPIP inband manager workstation
- Lantastic - NDIS
- IBM LAN Server - NDIS
- Microsoft LAN Manager - NDIS.

Each example includes:

- a brief description of the workstation
- a list of the files that need to be modified
- a listing of the modification to each file.

NDIS Workstation

Applications like AS/400 PCS, DOS LAN Requester and PC/3270 require that your workstation be configured for an NDIS interface. Modify: **autoexec.bat**, **config.sys** and **protocol.ini**.

EXAMPLE 1

If the Perle 833 unit is not configured to use fixed MAC addresses, run “PROTSAVE” and “DIALER” before running “NETBIND”.

autoexec.bat

```
PATH= C:\Perle833;C:\WINGRP;C:\LSP;C:\;C:\DOS
SET TEMP=C:\WINGRP\TEMP
CD \Perle833
REMOTE /NDIS
PROTSAVE
DIALER
PROTSAVE /U
C:\LSP\NETBIND
```

config.sys

```
DEVICE=C:\dos\HIMEM.SYS
buffers=30,0
FILES=50
LastDrive=e
dos=HIGH
STACKS=9,256
DEVICE=C:\LSP\PROTMAN.DOS /I:C:\LSP
DEVICE=C:\LSP\DXMA0MOD.SYS 001
DEVICE=C:\LSP\DXME0MOD.SYS
```

protocol.ini

```
[PROTMAN_MOD]
    Drivename=PROTMAN$
[DXME0_NIF]
    Drivename=DXME0$
    Bindings=REMOTE_NIF
[REMOTE_NIF]
    Drivename=REMOTE$
    InstallDir=C:\PERLE833
```


EXAMPLE 2

If the Perle 833 unit is configured to use fixed MAC addresses (or you know the MAC address of the port you are connecting to), you may dial at any time.

Note: You can use either the DOS or Windows Dialer.

autoexec.bat

```
PATH= C:\Perle833;C:\WINGRP;C:\LSP;C:\;C:\DOS
SET TEMP=C:\WINGRP\TEMP
CD \Perle833
REMOTE /NDIS
C:\LSP\NETBIND
WIN c:\Perle833\dialerw.exe
```

config.sys

```
DEVICE=C:\dos\HIMEM.SYS
buffers=30,0
FILES=50
LastDrive=e
dos=HIGH
STACKS=9,256
DEVICE=C:\LSP\PROTMAN.DOS /I:C:\LSP
DEVICE=C:\LSP\DXMA0MOD.SYS 001
DEVICE=C:\LSP\DXME0MOD.SYS
```

protocol.ini

```
[PROTMAN_MOD]
    Drivename=PROTMAN$
[DXME0_NIF]
    Drivename=DXME0$
    Bindings=REMOTE
[REMOTE]
    Drivename=REMOTES
    InstallDir=C:\Perle833

    ComIRQ=3

    NetworkAddress="020000001234"
```

- * REMOTE /NDIS section name
- * NDIS driver name
- * Points to the P833NDIS.ING file. This is the language file for the driver
- * IRQ of the serial port you are using. Same as for the dialer.
- * MAC address the user is using. User must either have a fixed MAC address or always use the same port to connect.

ODI-VLM/NDIS Workstation

Applications like AS/400 PCS and Novell NetWare Clients need NDIS and ODI to run concurrently. Modify: **autoexec.bat**, **config.sys**, **net.cfg** and **protocol.ini**.

If the Perle 833 unit is configured to use fixed MAC addresses (or you know the MAC address of the port you are connecting to), you may dial at any time.

Note: You can use either the DOS or Windows Dialer.

autoexec.bat

```
Path= C:\PERLE833;C:\WINGRP;C:\NWCLIENT;C:\LSP;C:\;C:\DOS
SET TEMP=C:\WINGRP\TEMP
SET NWLANGUAGE=ENGLISH
cd \PERLE833
lsl
REMOTE /ODI
odinsup
C:\LSP\NETBIND
ipxodi
VLM
WIN c:\Perle833\dialerw.exe
```

config.sys

```
DEVICE=C:\dos\HIMEM.SYS
buffers=30,0
FILES=50
dos=UMB
LastDrive=z
FCBS=4,0
dos=HIGH
STACKS=9,256
DEVICE=C:\LSP\PROTMAN.DOS /I:C:\LSP
DEVICE=C:\LSP\DXMA0MOD.SYS 001
DEVICE=C:\LSP\DXME0MOD.SYS
(Inserting “.,2” after this parameter, with no blanks, prevents the bit swapping normally performed
on the MAC address in Config.pcs by the Lan support program.)
```

net.cfg

```
Link Driver REMOTE
Frame Ethernet_802.3
Frame Ethernet_802.2
Frame Ethernet_II
Frame Ethernet_SNAP
INT 3
NODE ADDRESS 020008330000
```

```
NetWare DOS Requester
FIRST NETWORK DRIVE = F
AUTO RETRY = 5
AUTO RECONNECT = ON
```

```
USE DEFAULT = ON
SHOW DOTS = ON
CACHE BUFFERS = 10
CHECKSUM = 0
```

```
** PB BUFFERS = 10
** PBURST READ WINDOW SIZE = 64
** PBURST WRITE WINDOW SIZE =16
** LARGE INTERNET PACKET = ON
```

```
PROTOCOL ODINSUP
BIND REMOTE
BUFFERED
```

Note: The lines marked with an asterisk (**) in the left margin are added only for Packet Burst Mode.

protocol.ini

```
[PROTMAN_MOD]
  Drivename=PROTMAN$
[DXME0_NIF]
  Drivename=DXME0$
  Bindings=REMOTE
```

config.pcs

```
[TRLI]
  Destination MAC address of AS/400 host
```

Windows for Workgroups

To communicate with Windows for Workgroups you need to install the REMOTE /NDIS by following the normal procedure for installing a new adapter under WFW (see the network setup chapter in the WFW manual). After installation you must modify the file **C:\WINDOWS\protocol.ini** manually under the REMOTE /NDIS section. You must also modify: **autoexec.bat**, and **config.sys**.

To use the Perle 833 Windows dialer in a Windows for Workgroups environment:

1. You must use the Microsoft Windows for Workgroups file "win\system\serial.386" dated February 17, 1994 or later. Older versions may result in the system locking up.
2. The ports must be reserved exclusively for use by the Perle Remote software. To use other communication packages, you must exit Windows, unload all TSRs loaded after the REMOTE.EXE and execute the command "UNLDP833" from the MS-DOS prompt.

autoexec.bat

```
PATH = C:\PERLE833;C:\WINGRP;C:\;C:\DOS
SET TEMP=C:\WINGRP\TEMP
CD \PERLE833
REMOTE /NDIS
DIALER
C:\WINGRP\NET START
WIN
```

config.sys

```
DEVICE=C:\DOS\HIMEM.SYS
buffers=30,0
FILES=50
dos=UMB
LastDrive=E
FCBS=4,0
dos=HIGH
STACKS=9,256
DEVICE=C:\WINGRP\IFSHLP.SYS
```

protocol.ini

```
[network.setup]
    version=0x3110
    netcard=REMOTE,1,REMOTE,1
    transport=ms$ndishlp,MS$NDISHLP
    transport=ms$netbeui,NETBEUI
    lana0=REMOTE,1,ms$netbeui
    lana1=REMOTE,1,ms$ndishlp
```

```
[protman]
    DriverName=PROTMAN$
    PRIORITY=MS$NDISHLP
```

```
[REMOTE]
    Drivername=REMOTES$
    InstallDir=C:\PERLE833

**    ComIRQ=3

**    NetworkAddress="020000001234"
```

- * REMOTE /NDIS section name
 - * NDIS driver name
 - * Points to the language file for the NDIS driver.
 - * IRQ of the serial port you are using. Same as for the dialer.
 - * MAC address the user is using. User must either have a fixed MAC address or always use the same port to connect.
- Note:** The lines marked with a double asterisk (**) in the left margin need to be added manually.

```
[[MS$NDISHLP]
    DriverName=ndishlp$
    BINDINGS=REMOTE
```

```
[NETBEUI]
    DriverName=netbeui$
    SESSIONS=10
    NCBS=12
    BINDINGS=REMOTE
    LANABASE=0
```

NETX ODI Workstation

Applications that need the NETX shell facility, modify: **autoexec.bat**, **config.sys** and **net.cfg**.

You must be connected to the Perle 833 before running NETX.

autoexec.bat

```
Path=C:\PERLE833;C:\WINGRP;C\;\C:\DOS;  
SET TEMP=C:\WINGRP\TEMP  
SET NWLANGUAGE=ENGLISH  
CD \PERLE833  
ls!  
REMOTE /ODI  
ipxodi  
DIALER  
netx /ps=<server name>
```

config.sys

```
DEVICE=C:\dos\HIMEM.SYS  
buffers=20,0  
FILES=40  
LastDrive=e  
FCBS=4,0  
dos=HIGH  
STACKS=9,256
```

net.cfg

```
Link Driver REMOTE  
Frame Ethernet_802.3  
;Frame Ethernet_802.2  
;Frame Ethernet_II  
;Frame Ethernet_SNAP
```

Packet Burst Mode VLM ODI Workstation

Applications such as NetWare Requester or NDS require the client workstation to be configured to communicate with a NetWare server. Communication speeds can be increased by using NetWare Requester and having both the Client PC and Novell server set for Packet Burst Mode. Modify: **autoexec.bat**, **config.sys** and **net.cfg**.

Note: You can use either the DOS or Windows Dialer.

autoexec.bat

```
Path= C:\PERLE833;C:\WINGRP;C:\;C:\DOS
SET TEMP=C:\WINGRP\TEMP
SET NWLANGUAGE=ENGLISH
CD \PERLE833
lsl
REMOTE /ODI
ipxodi
vlm /ps=<server name>
WIN c:\Perle833\dialerw.exe
```

config.sys

```
DEVICE=C:\dos\HIMEM.SYS
buffers=20,0
FILES=80
LastDrive=Z
FCBS=4,0
dos=HIGH
STACKS=9,256
```

net.cfg

```
Link Driver REMOTE
  Frame Ethernet_802.3
  ;Frame Ethernet_802.2
  ;Frame Ethernet_II
  ;Frame Ethernet_SNAP

NetWare DOS Requester
  FIRST NETWORK DRIVE = F
  AUTO RETRY = 5
  AUTO RECONNECT = ON
  USE DEFAULT = ON
  SHOW DOTS = ON
  CACHE BUFFERS = 10
  CHECKSUM = 0

  PB BUFFERS = 10
  PBURST READ WINDOW SIZE = 64
  PBURST WRITE WINDOW SIZE = 16
  LARGE INTERNET PACKET = ON
```

Windows 3.1 NDIS Workstation + NETMANAGE from CHAMELEON

To use the CHAMELEON-NETMANAGE NDIS modify the following files:
autoexec.bat, **config.sys** and **protocol.ini**.

Note: You can use either the DOS or Windows Dialer.

autoexec.bat

```
Path= C:\NETMANAG;C:\PERLE833;C:\WINGRP;C:\LSP;C:\;C:\DOS
SET TEMP=C:\WINGRP\TEMP
CD \PERLE833
REMOTE /NDIS
C:\NETMANAG\NETBIND
WIN c:\Perle833\dialerw.exe
```

config.sys

```
DEVICE=C:\dos\HIMEM.SYS
buffers=20,0
FILES=40
FCBS=4,0
dos=UMB
dos=HIGH
STACKS=9,256
DEVICE=C:\NETMANAG\PROTMAN.DOS /I:C:\PERLE833
DEVICE=C:\NETMANAG\NETMANAG.DOS
```

protocol.ini

```
[NETMANAGE]
    DRIVERNAME=NETMNG$
    BINDINGS=REMOTE

[REMOTE]
    Drivename=REMOTES
    InstallDir=C:\PERLE833

    ComIRQ=3

    NetworkAddress="020000001234"
```

- * *REMOTE /NDIS section name*
- * *NDIS driver name*
- * *Points to the language file for the NDIS driver*
- * *IRQ of the serial port you are using. Same as for the dialer.*
- * *MAC address the user is using. User must either have a fixed MAC address or always use the same port to connect.*

Windows 3.1 ODI Workstation + NETMANAGE from CHAMELEON

To use the CHAMELEON-NETMANAGE ODI modify the following files:
autoexec.bat, config.sys and net.cfg.

Note: You can use either the DOS or Windows Dialer.

autoexec.bat

```
PATH = C:\NETMANAG;C:\PERLE833;C:\WINGRP;C:\;C:\DOS;
SET TEMP=C:\WINGRP\TEMP
SET NWLANGUAGE=ENGLISH
CD \PERLE833
ls!
REMOTE /ODI
C:\NETMANAG\NMODI
ipxodi
VLM
WIN c:\Perle833\dialerw.exe
```

config.sys

```
DEVICE=C:\DOS\HIMEM.SYS
buffers=30,0
FILES=50
dos=UMB
LastDrive=z
FCBS=4,0
dos=HIGH
STACKS=9,256
```

net.cfg

```
Link Driver REMOTE
  FRAME Ethernet_802.3
  FRAME Ethernet_II
  ;FRAME Ethernet_802.2
  ;FRAME ETHERNET_SNAP
  Protocol RARP 8035 ethernet_ii
  Protocol ARP 806 ethernet_ii
  Protocol IP 800 ethernet_ii

NetWare DOS Requester
  FIRST NETWORK DRIVE = F
  AUTO RETRY = 5
  AUTO RECONNECT = ON
  USE DEFAULT = ON
  CHECKSUM = 0

Link Support
  MemPool 4096
  Buffers 8 1500
```

LAN Workplace for DOS + NFS for LAN Workplace

ODI workstation configuration using TCP/IP and NFS from Novell to allow you to communicate with any TCP/IP hosts. Modify: **autoexec.bat**, **config.sys** and **net.cfg**.

autoexec.bat

```
Path= C:\PERLE833;C:\WINGRP;C:\NET;C:\NET\BIN;C:\C:\DOS;
SET TEMP=C:\WINGRP\TEMP
SET NWLANGUAGE=ENGLISH
cd \PERLE833
ls!
REMOTE /ODI
C:\NET\BIN\TCPIP.EXE
C:\NET\BIN\TELAPI.EXE
C:\NET\NFSCSNT\LWPRPC
C:\NET\NFSCSNT\LWPNFS 100.100.100.10 /R:4096 /W:4096
C:\NET\NFSCSNT\NET REGISTER
C:\Perle833\DIALER.EXE
C:\NET\NFSCSNT\NET LINK D: \\100.100.100.7\
```

config.sys

```
DEVICE=C:\dos\HIMEM.SYS
buffers=30,0
FILES=50
dos=UMB
LastDrive=e
FCBS=4,0
dos=HIGH
STACKS=9,256
device=c:\net\nfscsnt\ethdev.lwp NZST/NZDT 100.100.100.10 8192
```

net.cfg

```
Link Support
  MemPool 4096
  Max Stacks 8
  Max Boards 4
  Buffers 8 1500

Link Driver REMOTE
  FRAME Ethernet_II

Protocol TCPIP
  PATH SCRIPT      C:\NET\SCRIPT
  PATH PROFILE     C:\NET\PROFILE
  PATH LWP_CFG     C:\NET\HSTACC
  PATH TCP_CFG     C:\NET\TCP
  ip_address      100.100.100.10
```

ODI TCP/IP Inband Manager Workstation

ODI workstation configuration using TCP/IP to allow you to access and configure Perle 833 servers through the LAN connections. Modify: **autoexec.bat**, **config.sys** and **net.cfg**.

autoexec.bat

```
Path= C:\PERLE833;C:\WINGRP;C:\NET;C:\NET\BIN;C:\;C:\DOS;  
SET TEMP=C:\WINGRP\TEMP  
SET NWLANGUAGE=ENGLISH  
cd \PERLE833  
lsl  
SMC8000  
tcpip.exe  
win c:\PERLE833\P833MGR.EXE
```

config.sys

```
DEVICE=C:\DOS\HIMEM.SYS  
buffers=30,0  
FILES=50  
dos=UMB  
LastDrive=e  
FCBS=4,0  
dos=HIGH  
STACKS=9,256
```

net.cfg

```
Link Support  
  MemPool 2048  
  Buffers 8 1500  
  
Link Driver SMC8000  
  FRAME Ethernet_II  
  
Protocol TCPIP  
  PATH TCP_CFG C:\PERLE833\TCPIP  
  ip_address 100.100.100.10
```

Lantastic

Procedure for setting up a remote access PC attempting to connect to Lantastic Versions 5.0 and 6.0.

Install the Perle Remote.

Install Lantastic. On the “select network adapter” screen, select “NDIS Support for Network Adapters”. When asked for the location of the driver, enter the name of the directory to which the Perle Remote was installed (e.g. C:\PERLE833).

When the install is done, edit the following files to match the examples below:

On root;

```
config.sys  
autoexec.bat
```

In the Lantastic install directory

```
startnet.bat  
protocol.ini  
startnet.cfg (if connecting to a Token-Ring Perle 833 unit).
```

Using the Perle 833 Manager software, confirm that the Multicast and Broadcast filters for each port are set to “pass”.

config.sys

```
DEVICE=C:\DOS\HIMEM.SYS /TESTMEM:OFF  
DEVICE=C:\DOS\EMM386.EXE NOEMS /noems /x=CC-00- /X=D800-DBFF  
BUFFERS=30,0  
FILES=100  
DOS=UMB,HIGH  
LASTDRIVE=Z  
STACKS=9,256  
DEVICE=C:\LANTASTI\PROTMAN.DOS /I:C:\LANTASTI
```

autoexec.bat

```
CD\PERLE833  
REMOTE /NDIS  
DIALER  
CALL C:\LANTASTI\STARTNET.BAT
```

Install directory for Perle Remote

startnet.bat

```
AI-NDIS BIND_TO=REMOTE_NIF  
AILANBIO @STARTNET.CFG
```

startnet.cfg

```
[AILANBIO]
    MAX_SESSIONS=35
    SESSIONS=35
    **NO_MULTICAST
[REDIR]
    LOGINS=15

[SERVER]
```

Note: The lines marked with a double asterisk (**) in the left margin are added only for the Token-Ring Perle 833 version.

protocol.ini

```
[PROTMAN]
    DRIVENAME=PROTMAN$
    DYMANIC=YES

[REMOTE_NIF]
    DriverName =REMOTE$
    InstallDir=C:\PERLE833
```

IBM LAN Server - NDIS

autoexec.bat

```
@ECHO OFF
PROMPT $p$g
PATH= C:\NET;C:\;\C:\DOS;C:\NC;
cd\PERLE833
REMOTE /NDIS
SHARE
C:\NET\NET START
```

config.sys

```
DEVICE=C:\WFW1\HIMEM.SYS /testmem:off
DOS=HIGH
FILES=50
BUFFERS=30
STACKS=9,256
LASTDRIVE=Z
DEVICE=C:\NET\PROTMAN.DOS /i:C:\NET
DEVICE=C:\NET\DLShelp.SYS
```

protocol.ini

```
[network.setup]
    version=0x3100
    netcard=REMOTE,1,REMOTE
    transport=ibm$netbeui,IBM$NETBEUI
    lana0=REMOTE,1,ibm$netbeui

[protman]
    DriverName=PROTMAN$
    PRIORITY=ibm$NETBEUI

[REMOTE]
    DriverName=REMOTES
    INSTALDIR=C:\PERLE833
    COMIRQ=4
    NETWORKADDRESS="020083300009"

[IBM$NETBEUI]
    DriverName=netbeui$
    SESSIONS=10
    NCBS=20
    BINDINGS=REMOTE
    LANABASE=0
```

Microsoft LAN Manager - NDIS

autoexec.bat

```
@ECHO OFF
PROMPT $p$g
PATH C:\;C:\DOS;C:\NC;C:\LANMAN.DOS\NETPROG;
cd \Perle833
REMOTE /NDIS
CD \LANMAN.DOS
NET START WORKSTATION
LOAD NETBEUI
C:\PERLE833\DIALER
NET LOGON <server name>
```

config.sys

```
DEVICE=C:\WFW1\HIMEM.SYS /testmem:off
DOS=HIGH
FILES=50
BUFFERS=30
STACKS=9,256
LASTDRIVE=Z
DEVICE=C:\LANMAN.DOS\DRIVERS\PROTMAN\PROTMAN.DOS /i:C:\LANMAN.DOS
```

protocol.ini

```
[PROTMAN]
    DRIVENAME = PROTMAN$
    DYNAMIC = YES
    PRIORITY = NETBEUI

[NETBEUI_XIF]
    Drivename = netbeui$
    SESSIONS = 6
    NCBS = 12
    BINDINGS = REMOTE_NIF
    LANABASE = 0

[REMOTE_NIF]
    DRIVENAME = REMOTES$
    INSTALDIR = C:\PERLE833
    COMIRQ = 3
    NETWORKADDRESS = "020083300007"
```

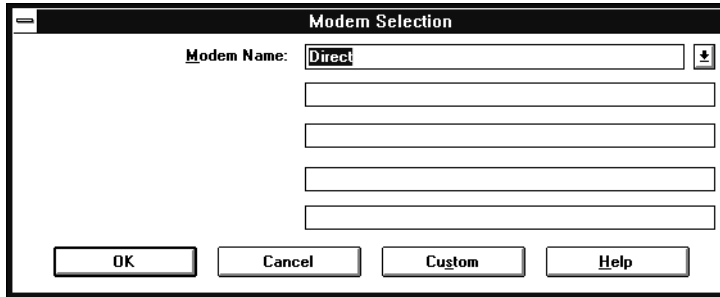
Appendix C: Direct Connect

A PC running the Perle Remote can be directly attached to the Perle 833 using a null modem cable. A normal client would not use this type of connection. If the client was close enough for a direct connection then better performance would be obtained by making a LAN connection.

However, the direct connection can be useful when using the Perle 833 Manager to configure or download firmware to the Perle 833 for the first time. See the Remote Access Server Guide for more details on these functions.

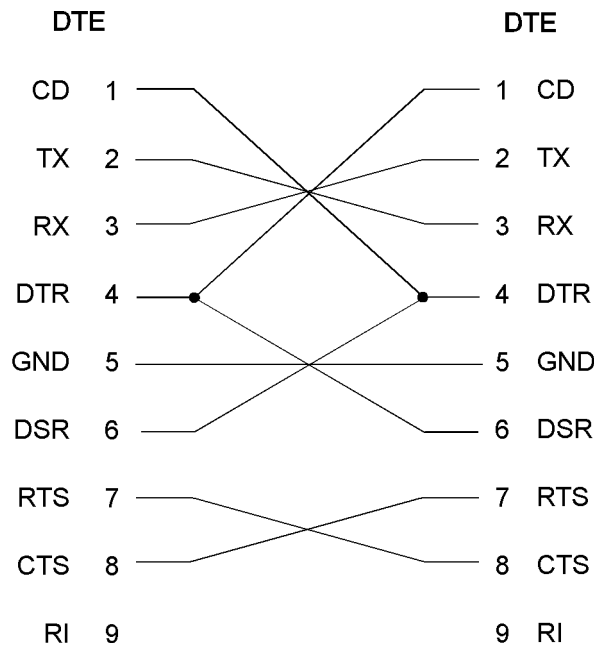
To configure the Perle Remote for direct connection:

1. Select **Modem** from the **Dialer Configure** menu. The **Modem Selection** dialog box appears.



2. Make sure “Direct” appears in the Modem Name box for a direct connection. If it doesn’t, click on the arrow at the right and scroll to “Direct”. Click **OK**.
3. Connect the PC serial port to a serial port on the Perle 833 using the null modem cable provided.
4. To make a connection, create a phone book entry without a telephone number and use it for dialing. The default phone book entry with a Host Network Name of Direct can be used.

The diagram below shows how the null modem cable is constructed.



Appendix D: MAC Address Conversion

Converting Token-Ring address formats

Use the following procedure and example to convert a Token-Ring MAC address into Ethernet format:

1. Write out the 12-digit MAC address separating it into 6 pairs.

40006C520003					
↓	↓	↓	↓	↓	↓
40	00	6C	52	00	03

2. Use the conversion table on the following page to locate the conversion pair by using the first digit of each pair as a row coordinate and the second digit as a column coordinate. For example:

40	00	6C	52	00	03
4 0	0 0	6 C	5 2	0 0	0 3
↓ ↓	↓ ↓	↓ ↓	↓ ↓	↓ ↓	↓ ↓
Pair Conversion Table					
↓	↓	↓	↓	↓	↓
02	00	36	4A	00	C0

3. Combine the 6 converted pairs into a 12-digit MAC address. For example:

02	00	36	4A	00	C0
↓	↓	↓	↓	↓	↓
0200364A00C0					

Pair Conversion Table

2nd Char → (column) 1st Char ↓ (Row)	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	00	80	40	C0	20	A0	60	E0	10	90	50	D0	30	B0	70	F0
1	08	88	48	C8	28	A8	68	E8	18	98	58	D8	38	B8	78	F8
2	04	84	44	C4	24	A4	64	E4	14	94	54	D4	34	B4	74	F4
3	0C	8C	4C	CC	2C	AC	6C	EC	1C	9C	5C	DC	3C	BC	7C	FC
4	02	82	42	C2	22	A2	62	E2	12	92	52	D2	32	B2	72	F2
5	0A	8A	4A	CA	2A	AA	6A	EA	1A	9A	5A	DA	3A	BA	7A	FA
6	06	86	46	C6	26	A6	66	E6	16	96	56	D6	36	B6	76	F6
7	0E	8E	4E	CE	2E	AE	6E	EE	1E	9E	5E	DE	3E	BE	7E	FE
8	01	81	41	C1	21	A1	61	E1	11	91	51	D1	31	B1	71	F1
9	09	89	49	C9	29	A9	69	E9	19	99	59	D9	39	B9	79	F9
A	05	85	45	C5	25	A5	65	E5	15	95	55	D5	35	B5	75	F5
B	0D	8D	4D	CD	2D	AD	6D	ED	1D	9D	5D	DD	3D	BD	7D	FD
C	03	83	43	C3	23	A3	63	E3	13	93	53	D3	33	B3	73	F3
D	0B	8B	4B	CB	2B	AB	6B	EB	1B	9B	5B	DB	3B	BB	7B	FB
E	07	87	47	C7	27	A7	67	E7	17	97	57	D7	37	B7	77	F7
F	0F	8F	4F	CF	2F	AF	6F	EF	1F	9F	5F	DF	3F	BF	7F	FF

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