Custom Contents

![TCP/IP icon]

This Help file contains a list of all Help topics available for Custom.   You can use the scroll bar to see the entries that are not currently visible in the Help window.   For information on how to use Help, press F1 or choose How to Use Help from the Help menus.

Overview   **How to Use**   **Troubleshooting**

Menus

◇   **File**
◇   **Interface**
◇   **Setup**
◇   **Services**
◇   **Connect**
◇   **Disconnect**
◇   **Waiting for call**
◇   **Help**

Overview

Custom lets you

- configure your NetManage TCP/IP (NEWT) network connections
- connect dial-up interfaces

Note: You can also establish connections through the Dialer as discussed in that application's online help.

Many users can configure a connection to the Internet using Automatic Internet rather than Custom.   For details, see the online help for the Automatic Internet application.

How to Use Custom

Setting Up the Hardware

To set up the appropriate environment for your computer and network interface adapter, do the following:

1. Complete the preparation form.

2. Choose the Hardware... command from the Setup menu.

   The Hardware dialog box appears.

3. Specify information in the Hardware dialog box as discussed in the following table.   Then choose the OK button.

   Note: The information you provide is used by the ChameleonNFS product to configure your PROTOCOL.INI and CONFIG.SYS files for use with your adapter board.   If you choose to have Custom configure your PROTOCOL.INI and CONFIG.SYS files and your ISDN.INI file, you can still edit them manually later.

   The following information also applies to the ISDN.INI file.

Option	Description
Vendor	Choose the vendor you are using.
	If you are using a network card not listed in our supported vendor list, choose Other.
	If you want to manually configure PROTOCOL.INI and CONFIG.SYS yourself rather than having Custom do it for you, choose None.
Section Name	Type the name of the header in the PROTOCOL.INI file used to describe your network card.
	This name is placed in square brackets in the PROTOCOL.INI file. To determine this information look at the sample PROTOCOL.INI file that comes with your network cards NDIS driver.
Driver Name	Type the name used by the Drivername= parameter in the PROTOCOL.INI file.
	To determine this information look at the sample PROTOCOL.INI file that comes with your network cards NDIS driver.
Driver File	Type the actual name of the NDIS driver file for your network card. Entering this information will edit the CONFIG.SYS file to load the NDIS driver for your card.
Text box at the bottom of the dialog box	Enter additional parameters necessary for the PROTOCOL.INI network adapter section as required by your specific card. Consult the instructions that accompany your network adapter card for details. The information will typically appear under the NDIS or LAN Manager sections of the documentation.

Modifying an Interface

Use the following procedure to customize your NEWT TCP/IP configuration.   This method of customizing your configuration is required if you are connecting to an Internet Service Provider that has not submitted its interface configuration to NetManage.

Note: You can have NetManage automatically configure some Internet connections by using Automatic Internet as discussed in that application's online help.

To customize your configuration, do the following:

1. Fill out the preparation form.

2. Select the interface you want to modify and then choose the Configuration... command from the Setup menu.

   The Configuration dialog box appears.

   Note: You can also open the Configuration dialog box by choosing (double-clicking) the interface you want to modify in the Custom window's list box.

3. In the IP Configuration tab, set the IP and dynamic configuration options.

4. Select another tab and configure the options available on that tab.

   Note: You can also move among the tabs by pressing the Ctrl Tab keys.

   Which tabs are available in the Configuration dialog box depends on the type of interface you are modifying.   For details on a specific tab, choose its name from the following list:

   Name Resolution

   Gateway

   Port

   Dial

   Call Type

   Modem

   Login

   RAS Configuration

   Advanced

5. Continue selecting tabs until you finish configuring the interface.   Then choose the OK button to close the Configuration dialog box.

6. Save your settings by choosing the Save command from the File menu.

7. Choose the Save command from the File menu.

8. Choose the Exit command from the File menu to close Custom.

Note: Whenever you make changes in Custom, you must save these changes by using the Save command from the File menu.   Then you must close Custom and exit all Chameleon applications.

Defining a Host Table

Computers on the network can identify one another through their IP address.   However, you probably use names rather than cumbersome IP addresses to identify computers.   The names and IP addresses need to be mapped to one another.   You can do this by defining a host table on many computers on the network.

To define a host table, do the following:

1. Choose the Host Table... command from the Services menu.

2. Type or select a host name, and choose the Add or Modify button.   After all changes are completed, choose the Save button to update the host table file.

    A second dialog box appears in which the IP address for the specified name and its aliases can be entered.

3. For each alias, type the name and choose the Add button.   Once all changes are completed, choose the OK button to return to the Host Table dialog box.

Note: Changes to the host table can be made at any time, even while a Chameleon application is running.   Once these changes are saved, every program will have access to these new settings. The host table entries appear in all Chameleon applications as a list of selections for a host name choice.

You may copy an existing host table file from another Chameleon installation, or from another system, such as a Sun workstation.   Place the file in your Chameleon directory under the name HOSTS.

As an alternative to a host table on many computers, some networks use a centralized name server to maintain name-to-IP address mappings.   For details on configuring your computer in this manner, see the Name Resolution tab topic.

Preparation Form

To complete your installation, you will need some system and network information.   Use the following form to help you collect the necessary information before you start the installation process.   Example values are shown in brackets.   If you are unsure of any information you need, see your system administrator.

General

Where to install software [C:\NETMANAG]   _____
                                                _

Interface type [Ethernet]   _____
                                                _

Internet address [156.27.1.51]   _____
                                                _

Host name [my host}   _____
                                                _

Subnet mask [255.255.0.0]   _____
                                                _

For LAN interfaces

Adapter vendor name [3COM]   _____
                                                _

Adapter type [3C503]   _____
                                                _

Interrupt level [5]   _____
                                                _

I/O base address [0x300]   _____
                                                _

For SLIP/CSLIP/PPP interfaces

COM port [COM2]   _____
                                                _

Baud rate [9600]   _____
                                                _

Flow control [Hardware]   _____
                                                _

Modem type [Hayes]   _____
                                                _

Telephone number [408-123-1234]   _____
                                                _

For ISDN interfaces

Vendor [ISDN.TEK]   _____
                                                _

Board Type [ISDN.TEK1]   _____
                                                _

IRQ_Level [5]   _____
                                                   _

Memory [0x300]   _____
                                                   _

SPID1   _____
                                                   _

SPID2   _____
                                                   _

Optional

Domain Name [netmanage.com]   _____
                                                   _

Default gateway [156.27.1.1]   _____
                                                   _

Domain server address [156.27.1.2]   _____
                                                   _

Modifying Login/Connection Scripts

Login/connection scripts can be included in the configuration of SLIP/CSLIP/PPP interfaces if you would like Custom to automatically log in to your dial-up server.   If you prefer to log in to the server manually, you can use the Custom Terminal option.

Some login scripts are provided for you.   If you want to modify the login/connection script, refer to the following information.

- You can modify a login/connection script from the Custom application's Login tab command.
- You can define a different script for each SLIP/CSLIP/PPP interface.

The login/connection script negotiates the initial login to the remote host. The remote host can be a UNIX system, a special SLIP/CSLIP/PPP router like a Telebit NetBlazer, a Chameleon PC, or a terminal server that supports the SLIP, CSLIP or PPP protocols.

A script is a macro statement made up of alternating Expect and Send phrases:

```
<expect1><send1><expect2>...
```

- The Expect phrase specifies the characters your computer expects to receive from the remote host before it sends a reply.   For example, many scripts begin with the login prompt (such as `Login:` or `name:`) that is displayed by the remote host when its number is dialed.   For a list of escapes that can be used within an Expect phrase, select Expect escapes.
- The Send phrase sends the information that your computer sends in response to a prompt (the preceding Expect) from the remote host. For a list of escapes that can be used within a Send phrase, select Send escapes.
- Words in the script are separated by either spaces or tabs.

Send Escapes

A Send phrase sends information from your computer to the remote host.   The information could be
something that you would otherwise type (such as your username), or it could be information regarding a
control (such as pausing for a specified number of seconds).

Within a <send> string you can include the following escapes:

Escape	Description
$n	send a new line
$r	send a carriage-return
$s	send a space
$b	cause a short break on the line
$t	send a tab
$1 - $9	pause the indicated number of seconds
$xXX	send the character with ASCII Decimal code XX
$u	send the user id
$p	send the password
$c	send the Startup Command
$d	send the phone number
$$	send a $ character
$f	define a prompt
$g	define an encrypted prompt
$l	call-back feature
$-	skip a send

Expect Escapes

An Expect phrase is information that your computer expects to receive from the remote host.   The
information could be a prompt, or a banner. or it could be information regarding a control (such as
pausing for a specified number of seconds).

Within a <send> string you can include the following escapes:

Escape	Description
--	expect "-"
-n	skip an expect
-i	expect IP address (to replace your own)

Defining a Prompt

Use the $f Send Escape to define a prompt (caption title) that you want to appear on your login message
box.   Normally, you would want to use $f when using a secure ID and you have to manually respond to
a security prompt.

For example, in the following SLIP0 script, the user is prompted to enter his or her password at connect
time.   This is because the $f<prompt> is defined as Password.

```
[DEFAULT]
name: $u$r word: $p$r  -n $6$c$r  -i
TYPE=SLIP
```

```
[SLIP0}
login:  $u$r word:  $fPassword $r
TYPE=SLIP
```

When $f is encountered, a dialog box appears with an edit field whose label is the prompt (in this case
Password).   In this example, the user is prompted to enter his or her password at connect time.

Requesting a Call-Back

If your SLIP or PPP server (that is, the server that you are connecting to) is configured for a call-back account, you can use the $l Send Escape to request a call back.   The $l causes Custom to close the connection and puts the modem in call-back mode, anticipating a call from the server

Note: Although the following example places the $l prompt at the end of the script, you can place the $l prompt anywhere in the script.

```
[NetCom]
login:  $u$r word:  $p$r    $l
```

Using Custom Terminal

Use the Custom Terminal feature if you prefer to manually connect and log in to the host (your Internet server).   You may wish to use this feature before establishing a script or to test your connection before creating a script.

Note: You must configure the Port, Modem, and Dial tab options before using the Custom Terminal feature.   However, you do not have to complete the Login settings if you are using Custom Terminal.

To connect and log in to your Internet Server using Custom Terminal, do the following:

1. Choose the Configuration... command from the Setup menu.   Then select the Login tab.

2. Select the Ignore Script check box and choose the OK button.

3. Choose the Connect menu option.

   The Custom-Terminal log window appears.   You will hear a dial tone and see dialing information appear in the Custom Terminal dialog box.

4. In the Custom Terminal log window, enter your login and password at the Login and Password prompts.

5. Choose the Set IP button to display the Internet Address dialog box.   Enter your known IP address or enter the IP address given by the host in the Custom Terminal window and choose the OK button.

   Note: The IP button is equivalent to the -i option in Script.

6. In the Custom -Terminal dialog box, choose the Done button when the login process is complete (you have entered your username and password, and set the IP Address) .

   If you begin to see an unrecognized series of ASCII characters in the Terminal window, it probably indicates that the remote server has finished the login process and begun PPP negotiation.   Or that the remote server is sending SLIP data packets.

7. Choose the Done button to end the login process.

8. When the connection is complete (the Disconnect command replaces the Connect command in the Custom menu item), choose the Close button to close the Custom Terminal log window.

   Note: If you choose the Close button whilconnection is taking place, a prompt appears asking if you want to disconnect.

Setting Passwords

To set a password, do the following:

1. Choose the Set Password... command from the File menu.

2. Type your password in the New Password box.

   If you have already set a password, Custom prompts you for your old password before you set up the new password.

3. Type the new password in the Confirm Password field and choose the OK button.

To delete your old password, type your old password and choose the OK button. You are prompted to enter your new password and confirm.

Adding New Interfaces

To add an interface, do the following:

1. Choose the Add...command from the Interface menu.

2. In the Name text box, type the name you want to assign to the interface.

3. From the Type drop-down list box, choose the type of interface you want to add.

4. Choose the Hardware... command from the Setup menu.   Enter the appropriate information in the Hardware dialog box.

   For LAN interfaces, you need only configure hardware settings if you are using NDIS.   The Hardware... command is unavailable for ODI because your adapter should already be configured and functioning.

   The options available in the Hardware dialog box depend on the type of interface you are configuring.

5. Choose the Configuration... command from the Setup menu.   The Configuration dialog box appears.

6. Enter the IP address and subnet mask bits information.   For details on specifying these options and the other IP Configuration options, see the IP Configuration Tab Options.

7. Select the Name Resolution tab and enter an NIS domain name (if you are using NIS), and the host resolution order.   For details on specifying these options and the other Name Resolver options, see the Name Resolution Tab Options topic.

8. If desired, configure the options on the other tabs.   For details on a specific tab, choose the appropriate topic from the following list.   The tabs that are available depend on the type of interface you are configuring.

   Gateway Tab Options

   Port Tab Options

   Dial Tab Options

   Call Type Tab Options

   Modem Tab Options

   Login Tab Options

   Advanced Tab Options

Duplicating Interfaces

To duplicate an interface, do the following:

1. Select the interface to be duplicated from the list of configured interfaces.

2. Choose the Duplicate... command from the Interface menu.

   The Interface Name dialog box appears.   That dialog box indicates the name that is automatically assigned to the new interface.

3. If you want to change the interface name, type the new name in the Name text box.

4. Choose the OK button.

The new interface is added to the list of available interfaces.   Additional information about a specific interface can be displayed by choosing that interface from the list.

Deleting Interfaces

To delete an interface, do the following:

1. Select the interface to be deleted from the Custom window's list box.

2. Choose the Delete command from the Interface menu.

3. At the prompt, choose the Yes button.

Changing an Interface Name

If you want to change the name of one of the configured interfaces, do the following:

1. Select the name of the Interface that you want to change from the Custom window's list box.

2. Choose the Interface Name... command from the Interface menu.

3. Type the new name of the interface in the Name text box.

4. Choose the OK button.

Establishing Connections

To establish a connection, do the following:

1. In the Custom window's list box, select the interface you want to connect.

2. Choose the Connect menu option.

Disconnecting Interfaces

To disconnect an interface, do the following:

1. In the Custom window's list box, select the interface you want to disconnect

2. Choose the Disconnect menu option

File

[New](#)
[Open...](#)
[Save](#)
[Save As...](#)
[Set Password...](#)
[Exit](#)

Set Password

Lets you set a password to prevent other users from changing your Custom configuration without permission.

See Also
Setting Passwords

Interface

[Add...](#)

[Duplicate...](#)

[Delete](#)

[Interface Name...](#)

Add...

Adds the appropriate network interface configuration information for your computer and network interface adapter.

The new interface will be added to the list of available interfaces.   Additional information about a specific interface can be displayed by selecting that interface.

See Also
Adding New Interfaces

Duplicate...

Duplicates (copies) an existing interface configuration.   You will be asked to identify the new interface by a unique name.   This command is very helpful in duplicating SLIP/CSLIP/PPP interface information for multiple phone numbers.

See Also
Duplicating Interfaces

Delete

Deletes an existing interface from the list of available interfaces.

See Also
[Deleting Interfaces](#)

Interface Name...

Lets you change an interface's name.

See Also
[Changing an Interface Name](#)

Connect

Establishes a dial-up connection to a remote computer or network.

See Also
Establishing Connections

Disconnect

Closes the connection between your computer and the remote computer or network.

See Also
Disconnecting Interfaces

Waiting for call

Indicates your modem is in the Answer mode.   If you choose this menu option, you will reset the modem and then be able to establish a connection.

Setup

[Hardware...](#)

[Configuration...](#)

[Port Setup...](#)

[Log...](#)

Hardware...

Sets up the appropriate environment for your computer and network interface adapter.

This command is available and necessary only if you have configured an Ethernet, Token Ring, FDDI, or ISDN interface (and only if your hardware has not already been configured by other networking software, such as Windows for Workgroups).

Note: If you are using ODI drivers, this option will not be available.

See Also
Setting Up the Hardware

Configuration...

Opens the Configuration dialog box which you can use to add or modify interfaces.   The Configuration dialog box includes several tabs.   Which tabs are available depend on the type of interface you are configuring and whether you open the dialog box in Custom or Dialer.

See Also
Advanced Tab Options
Call Type Tab Options
Dial Tab Options
Gateway Tab Options
IP Configuration Tab Options
Login Tab Options
Modem Tab Options
Name Resolution Tab Options
Port Tab Options
RAS Configuration Tab Options

Port Setup...

Opens the Port Setup dialog box, which you use to set up the COM ports.   This command is available only for ShivaPPP interfaces.

See Also
Setting Up the COM Ports

Setting Up the COM Ports

Before you can establish a dial-in connection for a ShivaPPP interface, you must tell ShivaPPP which kind of modem you are using, as well as the COM port to which the modem is attached. You can also tell ShivaPPP what speed to use for the connection (in bits per second), how to initialize the modem for the best possible connection, and so on.

Note: Changes you make to the Port Setup affect all ShivaPPP dial-in connections, not just the connection file that is currently open.

To set up the communication ports for a ShivaPPP interface, do the following

1. Choose the Port Setup... command from the Setup menu.

    The Port Setup dialog box appears.

2. From the Modem drop-down list box, select the type of modem you are using.

    If the modem you want is not in the Modem drop-down list box, choose the Edit Modem button and use the Edit Modem dialog box to add your modem to the list.

3. Select the COM port to which the modem is attached from the Port drop-down list box.

4. Accept the default speed selected in the Speed drop-down list box, or select another speed if desired.

    In most cases, you should accept the preset value for the communications speed.   This speed is usually the highest speed your modem supports.   However, if you experience a high number of communication errors, choosing a lower number on this drop-down list box may eliminate these errors.

5. If you want to automatically reconnect if you lose the connection, choose the Reconnect automatically when connection is lost check box.

6. Choose the OK button when you finish changing the port settings.

See Also
Advanced Settings Dialog Box

Advanced Settings Dialog Box

Use the Advanced Settings dialog box to specify the Interrupt Request (IRQ) number and Input/Output (I/O) address used by your serial port. In addition, you can use this dialog box to specify the command ShivaPPP will use to dial a telephone number (such as ATDT or ATDP).

To open the Advanced Settings dialog box, choose the Port Setup... command from the Setup menu. Then choose the Advanced button in the Port Setup dialog box.

The following table describes the Advanced Settings dialog box options:

Option	Description
IRQ Number	If your COM port uses the standard IRQ number, leave this set to Default. If the COM port uses a non-standard IRQ number, use the drop-down list box to select another value or enter that number here using a value between 2 and 15.
I/O Address	If your COM port uses the standard I/O address, leave this entry at Default. If the COM port uses a non-standard I/O address, use the drop-down list box to select another value or enter that number here.
Dial string	In most cases, leave the values in the Dial String Field set to the default setting of ATDT. If your telephone connection requires pulse dialing, change the value to ATDP.
Enable PPP compression	Indicates whether ShivaPPP and the Shiva remote access server should compress the information sent over the modem connection. This check box is selected by default. If the Shiva remote access server also has data compression enabled, selecting this check box can improve the speed of your dial-in connection. (If the Shiva remote access server does not have data compression enabled or if you are connecting to a non-Shiva remote access server, this setting is ignored.) Note that if you are dialing in to a Shiva remote access server, the remote access server must be Version 3.5 or later for compression to be available.

If your COM ports use non-standard values, see IRQ and I/O Settings for COM Ports for more information.

See Also
Edit Modem Configuration Dialog Box
Setting Up the COM Ports

IRQ and I/O Settings for COM Ports

The following table shows standard settings assigned to IRQ and I/O for COM ports. Most IBM-compatible personal computers support the settings shown here under Non-MicroChannel PCs. ShivaPPP checks for a MicroChannel PC and, if appropriate, uses the settings shown here under MicroChannel PCs.

	Non-MicroChannel PCs		MicroChannel PCs	
Serial Port	IRQ Number	I/O Address	IRQ Number	I/O Address
COM1	4	03F8	4	03F8
COM2	3	02F8	3	02F8
COM3	4	03E8	3	3220
COM4	3	02E8	3	3228

Edit Modem Configuration Dialog Box

Use the Edit Modem Configuration dialog box to modify an existing modem configuration or create a new modem configuration.

To open the Edit Modem dialog box, choose Port Setup from the Setup menu and then choose the Edit Modem button.

The following table describes the Edit Modem Configuration dialog box options:

Option	Description
Modem Name	Type the name of the modem configuration you are currently adding or editing.
Initialize	Contains the modem initialization string that is sent to your modem to prepare it for a dial-in connection. See Modem Initialization Requirements for ShivaPPP for information on creating or modifying modem initialization strings.
Answer Init	Contains the modem initialization string ShivaPPP sends to your modem to prepare it to answer the telephone during a dial-back attempt. In most cases, it is identical to the Initialize command with "S0=1&W" added to the end. See Modem Initialization Requirements for ShivaPPP for information on creating or modifying modem initialization strings.
Speed	Choose the maximum speed at which a PC can communicate with the modem in bits per second. For most modems, this will be either 38400 BPS or 57600 BPS.
	To change the speed at which your PC communicates with the modem, do not change this value; instead, change the value in the Speed field of the Port Setup dialog box.
Flow Control	Choose the type of flow control the dial-in software uses (Hardware, Software, or None). Hardware flow control is also known as RTS/CTS. Software flow control is also known as XON/XOFF.
	Note that this value tells only the dial-in driver which type of flow control to use; it does not tell the modem. You must use the Initialize field in this dialog box to determine the flow control the modem will use. The dial-in driver and the modem must be configured to use the same type of flow control.

See Also
Advanced Settings Dialog Box

[Setting Up the COM Ports](#)

Modem Initialization Requirements for ShivaPPP

An initialization string to your modem is sent whenever you attempt to dial in to a remote access server. This initialization command places the modem in an originating or answering state.

Almost all modems support the basic AT command set developed by Hayes.   Today, advanced settings and new modems use many commands which differ from those found on Hayes modems.   Many of these settings are default settings on particular modems. This section describes many of the most common commands and how they are used in a ShivaPPP modem initialization string.

Note: The values for the commands, and in fact, the actual commands may differ from modem to modem. See your modem manual or contact your modem manufacturer for additional help in setting the desired features for use with NetManage PPP Dialer.

The information in this section is intended for use in adding a new modem definition in the Edit Modem Configuration dialog box.

Log...

Opens the Log window, which records operations done in Custom.   This command is available for serial and ISDN interfaces.   It is not available for FDDI, Ethernet, Token Ring, and ShivaPPP interfaces.

To log information, do the following:

1. Choose the Log... command from the Setup menu.

2. If you want to save, print, or copy the contents of the Log window, choose the appropriate button (Save, Print or Copy).

3. If you want to delete the contents of the Log window but continue recording messages, choose the Clear button.

4. When you no longer want to record messages, choose the Close button.

IP Configuration Tab Options

The following table describes the options available on the IP Configuration tab:

Option	Description
IP Address	Type your IP address.
	For information about illegal, available, and reserved IP addresses, see the Internet Addresses topic.
Mask Bits	Type the number of subnet mask bits. Depending on your network, a subnet mask may be optional.
	The subnet division is used to partition the IP address into a network portion and a host portion.
Use Dynamic Configuration	Select this check box if you want to configure Chameleon dynamically.
	If you select this check box, you will need to choose the BOOTP, DHCP, or RARP button.
BOOTP	Choose this button if you want your computer to find its configuration information by using BOOTP.
DHCP	Choose this button if you want your computer to find its configuration information by using DHCP.
RARP	Choose this button if you want your computer to find its configuration information by using RARP.
BOOTP Server IP Address	If you chose the BOOTP button and you want to specify a server IP address, type that address.
	Note: If you do not specify a server IP address, the BOOTP request will broadcast on the network. This is usually preferable.
Reuse Dynamic Data	Select this check box to save the dynamic configuration information on your computer.
	If you store the configuration information obtained from a BOOTP or DHCP server, youromputer will have access to that information if the server becomes unavailable.

See Also
Name Resolution Tab Options
Gateway Tab Options
Port Tab Options
Dial Tab Options
Call Type Tab Options
Modem Tab Options
Login Tab Options
RAS Configuration Tab Options
Advanced Tab Options

Name Resolution Tab Options

Computers on the network can identify one another through their IP address.   However, you probably use names rather than cumbersome IP addresses to identify computers.   The names and IP addresses need to be mapped to one another.   You could do this by defining a host table on many computers on the network.   As an alternative to a host table on many computers, some networks use a centralized name server to maintain name-to-IP address mappings.

The Name Resolution tab lets you

- define which servers your computer can obtain name-to-IP address mapping information
- specify in which order your computer searches for IP addresses

The following table describes the options available on the Name Resolution tab:

Option	Description
Host Name	Type the network name of your computer.
DNS Domain Name	Type the domain in which your computer resides.
NIS Domain Name	Type the NIS domain name. If you do not specify an NIS domain name or enter an invalid name, NIS will not be used. The NIS server is determined by broadcasting to the specified NIS domain. Since multiple servers may be present in a given domain, the first server to respond to the broadcast is the NIS server used.
Host Resolution Order	Choose the option that specifies the order in which the tables that determine the IP address for a given host name are referenced.
Domain Servers	Specify which servers maintain name-to-IP address mappings. You do so by typing a server's IP address in the Domain Servers text box and then choosing the Add button. The IP address of a DNS and up to two alternates may be added to the list box. If you add one or more domain servers, a name lookup request is sent to the IP address of the DNS. If the request is not satisfied, the alternates are queried in the order specified in the dialog box.

You can delete an IP address from the Domainervers list box by selecting that address and then choosing the Delete button.

See Also
IP Configuration Tab Options
Gateway Tab Options
Port Tab Options
Dial Tab Options
Call Type Tab Options
Modem Tab Options
Login Tab Options
RAS Configuration Tab Options
Advanced Tab Options

Gateway Tab Options

The following table describes the options available on the Gateway tab.   Use this tab to define gateways and the route entries for those gateways.   To add items to a list box, specify the appropriate information and then choose the Add button.

Note: Configure the options on this tab only if you have multiple interfaces and are using Chameleon as a router.

Option	Description
Gateway	Type the IP address of a default gateway or an alternate gateway.
	Gateways let one subnet talk to any other indirectly connected subnet.
	The default and alternate gateways must exist on the same subnet as your local PC. For example, if your IP address is 123.27.1.2, your default gateway might be 123.27.1.1. assuming the subnet mask value is the same.
Route Entries	
Network	Type the network address in the appropriate text boxes.
	Note: The network address must be fully specified, up to the host portion of the address. The network address must end with a zero (0). For example, a class B address with eight subnet bits must be specified as X.X.X.0 (for example, 137.27.4.0).
Subnet Bits	Type the number of subnet bits.
Gateway	Type the IP address of the gateway router that should receive packets sent to the specified network.
	The gateway must be on the locally connected subnet interface. (For SLIP interfaces, specification of a gateway is not needed.)

See Also
IP Configuration Tab Options
Port Tab Options
Dial Tab Options
Call Type Tab Options
Modem Tab Options
Login Tab Options
RAS Configuration Tab Options
Advanced Tab Options

Port Tab Options

Note: Changes to port settings other than the baud rate and connector settings should be performed with caution.   In particular, hardware flow control is the default setting due to binary communication requirements.

The following table describes the options available on the Port tab.   The Port tab and this help topic can be accessed through Dialer, which is an application that lets you establish connections and modify interfaces.   If you want to access the Dialer online help, click here.

Option	Description
Port	Choose the communications port that your modem uses. If you are using a null modem, choose None.
Baud Rate	Choose the desired speed of your connection.
	Some modems can transmit at more than one baud rate. The appropriate value depends on the baud rate capability of your modem and the baud rate supported by your Internet Access Provider.
Data Bits	Choose the number of data bits in the data packets sent between your local computer and the remote computer. Generally, you can just use the default.
	SLIP/PPP/CSLIP are 8-bit protocols and must have 8 data bits
Stop Bits	Choose the number of stop bits between transmitted characters. Generally, you can just use the default.
	SLIP/PPP/CSLIP are 8-bit protocols and must have 1 stop bit.
Parity	Specify parity as one of the following:
	None
	Choose this option if you are using SLIP/PPP/CSLIP or you have selected 8 data bits for the Data Bits option.
	Odd
	Choose this option to specify that the number of 1s in each data packet must always be odd.
	Even
	Choose this option to specify that the number of 1s in each data packet must always be even.
	Mark
	Choose this option to specify that the parity bit is always on.
	Space
	Choose this option to specify that the parity bit is always off.
Flow Control	Choose the desired flow control method to specify whether the local system notifies the remote system when the local buffer becomes too full to receive more data from the remote system.
	• Choose CTS/RTS if the remote system uses the hardware handshaking method of flow control. CTS/RTS is also known as hardware flow control.
	• Choose XON/XOFF if the communications software is to signal whether it is ready to receive data. XON/XOFF is also known as software flow

control.

- Choose None if the remote system uses no overflow method or if you do not know which flow control method is used.

Parity Check   Select this check box if you want to show the byte in which an error occurred.

If you do not select this check box, you will see question marks (?) where the modem detected an error.   The question marks will appear at every character not transferred correctly.

Carrier Detect   Select this check box if your modem supports Carrier Detector and you want to use that feature so that the connection script is executed only if Custom detects the carrier.

If this check box is cleared (the default), Custom executes the script immediately.

When carrier detect is selected, SLIP uses the carrier detect signal to determine whether the modem is on line.   When carrier detect is off, SLIP looks at the modem response string to determine if it is connected.   If your modem still is not connecting after correctly setting the other options, clear this check box and try connecting again.

Hardware Reset   Select this check box if you want disconnections done through a Data Terminal Readyommand instead of sending +++ and ATH.   This minimizes the disconnect time.

See Also
[IP Configuration Tab Options](#)
[Name Resolution Tab Options](#)
[Gateway Tab Options](#)
[Dial Tab Options](#)
[Call Type Tab Options](#)
[Modem Tab Options](#)
[Login Tab Options](#)
[RAS Configuration Tab Options](#)
[Advanced Tab Options](#)

Dial Tab Options

The following table describes the options available on the Dial tab.   The Dial tab and this help topic can be accessed through Dialer, which is an application that lets you establish connections and modify interfaces.   If you want to access the Dialer online help, [click here](#).

Option	Description
Use Prefix Digits	If a prefix must precede the telephone number you want to dial, select the Use Prefix Digits check box. Then type the prefix in the Use Prefix Digits text box. A prefix could be another country's access code, an access line (such as dialing 9 before you can dial out), or the 1 that typically precedes an area code.
Telephone Number	Specify the area code and number that is used to establish the connection. You can specify this number by either selecting it from the Telephone number list box or typing it in the Telephone Number text box. If you want to indicate Answer mode when connected, leave the Telephone Number text box blank. If you do so and then choose the Connect menu option, your software indicates you are in the Answer mode. (In Custom, this indicator is the Waiting for call menu option.)
Use Suffix Digits	If a suffix must follow the telephone number, select the Use Suffix Digits check box and then type the desired suffix in the Use Suffix Digits text box. A suffix is any additional numbers you need to enter before a connection can be made. Typical suffixes are credit card numbers, calling card numbers, and the numbers you are prompted for by your Internet provider's voice mail.
Hide Suffix	Select this check box if you want asterisks (***) rather than numbers to appear in the Use Suffix Digits text box. This helps you keep your credit card or calling card numbers private.
Dial On Demand	Select this check box if you want to automatically connect or disconnect your interface through another application (such as FTP). **Caution:** You should always check your dial-up connections at the end of a session to be sure they are closed. Not all modems operate identically and unusual circumstances such as a PC being accidentally powered off may not guarantee a complete disconnect.
Open Log When Connecting	Select this check box if you want to display the log while the connection is being made.
Signal When Connected	Select this check box if you want to be signaled with a beep when a connection is made.
Prompt For Calling Card Number	Select this check box if you want a prompt to appear reminding you to enter a calling card number while a

connection is being made.

Redial After Timing Out	Select this check box if you want to automatically redial if there is a connection try time out.
Redial After Carrier is Lost	Select this check box if you want to automatically redial after a connection is lost.
Timeout If Not Connected	If you anticipate that the connection may take a long time, increase the number of seconds that the terminal waits for a connect signal from the remote computer.
	For serial interfaces, the minimum value for the timeout if not connected is 30 seconds. For ISDN interfaces, the minimum value for the timeout if not connected is 5 seconds.
Manual	Choose this button to specify that you want to disconnect the interface manually. You disconnect manually by selecting the interface you want to disconnect and then choosing the Disconnect menu option.
No Traffic	Choose this button if you want the interface to be disconnected automatically when the system detects no traffic (no packets being sent to or received from your system) for a specified amount of time.
	If you choose this button, you will need to specify the Timeout Before Disconnecting option.
No Open Connections	Choose this button if you want the interface connection to disconnect automatically when the system detects no open connections.
	If you choose this button, you will need to specify the Timeout Before Disconnecting option.
Timeout Before Disconnecting	Type the timeout period in terms of minutes and seconds.
	You must specify this option if you select either the No Traffic or No Open Connections buttons.

See Also

Call Type Tab Options

The following table describes the options available on the Call Type tab, which is available only for ISDN interfaces.   The Call Type tab and this help topic can be accessed through Dialer, which is an application that lets you establish connections and modify interfaces.   If you want to access the Dialer online help, [click here](#).

Option	Description
Data Type	Choose the data type of the ISDN call you want to make.
Speed	Choose the number of bits per second that is compatible with your system.
	Note: If you encounter problems using 64K, check that your ISDN provider supports this speed end-to-end. If not, use the B 56K option instead.
Hardware board	Choose your ISDN board number (typically this number is 1). If you are not sure of this number, check with your system administrator.
Diagnose	Select this check box if you wanto display diagnostic information in the log window at the time of connection.
Configure MultiLink Protocol	Select this check box if you want to be able to make more than one call at the same time with this interface. You can set up your configuration so that each interface can support up to two calls.
Use Primary Number for both lines	Choose this button if you want to use the same telephone number for both calls.
Use different number for Secondary line	Choose this button if you want to use different telephone numbers for each call.
Primary Number	Choose the telephone number you want to use to make the first call.
	Note: This number will also be used for your second call if the Use Primary Number for both lines button is chosen.
Secondary Number	If you want to use a different phone number for your second call, choose the telephone number you want to use when making a second call.
	Note: This option is only available if you have chosen the Use different number for Secondary line button.

See Also
[IP Configuration Tab Options](#)
[Name Resolution Tab Options](#)
[Gateway Tab Options](#)
[Port Tab Options](#)
[Dial Tab Options](#)
[Modem Tab Options](#)
[Login Tab Options](#)
[RAS Configuration Tab Options](#)
[Advanced Tab Options](#)

Modem Tab Options

The following table describes the options available on the Modem tab.   The Modem tab and this help topic can be accessed through Dialer, which is an application that lets you establish connections and modify interfaces.   If you want to access the Dialer online help, click here.

Note: After you select a modem, the remaining options of this tab are automatically filled out with information supplied by the modem's vendor.   If you want to change these options, see your vendor's documentation.

Option	Description
Model	Select the appropriate modem type and then choose the Select button.
Modem Selected	Indicates which modem is selected.
	If you want to add a modem, type a new name in this option. If you do so, you will be prompted to save your changes when you close the Configuration dialog box.
Modem Init	Type the modem initialization string that you want sent to your modem to prepare it for a dial-in connection.
	The ^M character represents a carriage return.
Dial Prefix	Type information that prepares the modem for dialing.
Dial Suffix	Type information that signals the modem that dialing is to end.
Binary TX	If your modem uses transfer entries to set up the serial port flow control through S register 68, set this option to S68. Otherwise, leave it blank.
	Most modems do not use transfer entries to set up serial port flow control. For details on whether your modem does, see your modem's documentation.
Binary RX	If your modem uses receive entries to set up the serial port flow control through S register 58, set this option to S58. Otherwise, leave it blank.
	Most modems do not use receive entries to set up serial port flow control. For details on whether your modem does, see your modem's documentation.
Answer Set Up	Type the string that you want sent to your modem to prepare it to answer a dial-back attempt.
Hangup Command	Type the string that is to tell your modem to hang up.
Max Speed	Choose the speed at which your PC is to communicate with your modem. The available speeds are in bits per second.

See Also
IP Configuration Tab Options
Name Resolution Tab Options
Gateway Tab Options
Port Tab Options
Dial Tab Options
Call Type Tab Options
Login Tab Options
RAS Configuration Tab Options
Advanced Tab Options

Login Tab Options

The following table describes the options available on the Login tab.   The Login tab and this help topic can be accessed through Dialer, which is an application that lets you establish connections and modify interfaces.   If you want to access the Dialer online help, click here.

Option	Description
User Name	Type the username you enter when logging in.
	This field is transmitted when the login script is executed. The username is required for the script to be executed even if there is no need for a username.
User Password	Type your login password.
	This field is transmitted when the login script is executed.
Startup Command	Type the command that indicates to the host whether the connection is SLIP, CSLIP, or PPP.
	This field is transmitted when the login script is executed.
Ignore Script	Select this check box if you want Custom to ignore the script that is specified in the Script text box.
	If you select this check box, you will need to log in through the Custom Terminal feature.
Script	Type the script that Custom uses to automatically log in to your dial-up server. This script negotiates the initial login to the remote host. Some login scripts are provided for you.
	The script is a macro statement made up of alternating Expected Prompt during login and Reply string phrases. For details on replacing or inserting script information, see your Installation and User's Guide.
Expected Prompt during login	Specify the script phrase that specifies the characters your computer expects to receive from the remote host before it sends a reply.
	For example, many scripts begin with the login prompt (such as `Login:` or `name:`) that is displayed by the remote host when its number is dialed. For a list of escapes that can be used within an Expected Prompt during login string, see the Expect escapes topic.
	You can display Expected Prompt during login string statements by using the left arrows (<<) and right arrows (>>) buttons.
Reply string	Specify the script phrase that sends the information that your computer transmits in response to a prompt (the preceding Expected Prompt during login option) from the remote host.
	For a list of escapes that can be used within a Reply string phrase, see the Send escapes topic.
	You can display Reply string statements by using the left arrows (<<) and right arrows (>>) buttons.

See Also
IP Configuration Tab Options
Name Resolution Tab Options
Gateway Tab Options

RAS Configuration Tab Options

The RAS Configuration tab lets you configure the remote access server (RAS) used by ShivaPPP.   The following table describes the options available on the RAS Configuration tab.   This tab is available only for ShivaPPP interfaces.

Option	Description
New	Choose this button to reset all connection file information to the default values so you can start setting up another <u>connection file</u>.
Open	Choose this button to read a ShivaPPP connection file that has been saved on your disk. The information in the file is read and then displayed in the ShivaPPP Connect window.
Save	Choose this button to save the displayed connection information to disk. If you have not yet given the connection file a name, you will be asked to provide one.
Save As	Choose this button to save the displayed information to disk with a different name. After you choose this button, you are prompted to provide a new name for the connection file.
IPX Enabled	Select this check box to enable the IPX protocol for your dial-in connection, providing access to Novell network services such as file servers and print servers. To use Novell services, you must also have Novell client software installed on your PC.
NetBEUI/LLC Enabled	Select this check box to enable the NetBEUI and LLC protocols for your dial-in connection, providing access to all services on the remote network that use those protocols. You must enable this option to use Windows for Workgroups peer-to-peer file sharing and to log on to Windows NT servers.
Description	Type a description for the connection file. The description can be up to 64 characters long. The description is optional. The value you enter here is displayed whenever you make a connection using the current connection file. Also, if you use the Make Icon command on the Program Manager's File menu, the icon name (by default) will be the description you enter here.
Dial-In Name	Type the username you were assigned for the remote access server you are calling.
Password	Type the password for your dial-in name in the Password field if the remote system administrator has instructed you to do so. Otherwise, leave the Password field blank. **Note:** If you do not enter a password here but your dial-in name requires one, ShivaPPP will prompt you for a password when you are connecting to the remote network. Any password you type appears as a row of asterisks (***). For security reasons, passwords are not saved when you save the connection file.
Phone #	Type the telephone number of the remote access server you want to dial. Type the number exactly as you would dial it manually, using up to 56

characters (including commas and hyphens).   For example, if you were dialing a long-distance call from an office where you have to dial 9 to reach an outside line, you might enter `9,1-617-555-1212`. Use commas if you need to add a pause (usually 2 seconds for each comma you use, but this varies with your modem settings). Hyphens (-) are optional.

Note: Do not include any modem dialing commands (such as ATDT) in this text box.

Keep in mind that many modems cannot handle more than 36 characters for dialing, so if ShivaPPP reports an error while dialing, this may be the cause.

Request Dial-Back	Select this check box to enable the roaming dial-back feature of ShivaPPP, which lets you tell the remote access server to call your modem back at a telephone number that you specify so you can reverse the charges for the telephone call. Not all remote access servers support roaming dial-back, and not all users are set up to use this feature.
Dial-back Phone #	Type the telephone number at which the remote access server should call your modem back. This field is used only if you select the Request Dial-Back check box. The telephone number you enter in this field must include any access codes needed to dial your modem's number from the remote site (such as 9 to use an outside line, and a 1 for long-distance calls).
Auto Connect	Select this check box to set up this connection automatically whenever this connection file is opened. If you want to make a connection when this check box is not selected, you must choose the Connect menu option. **Note:** If you select this check box, you must make a Program Manager icon of the connection file for ShivaPPP to connect automatically.
Lost Carrier Redial	Select this check box if you want to automatically redial after a connection is lost.
Restore NetWare connections	Select this check box to automatically log on to Novell NetWare servers as soon as the dial-in connection is established. This lets you restore your permanent server connections automatically each time you dial in to a remote access server. If you do not select this check box, you will have to establish your connections to NetWare servers manually after the connection is established.
Third-party security device installed	Select this check box to use a third-party security device that is set up on the remote access server. If you select this check box, you will typically have to enter an additional password after connecting to the remote modem but before you have access to the remote access server. If you are not sure whether to select this check box, or you need information on what to enter for any third-party security device, contact the system administrator for the remote network.
Echo characters locally	Select this check box to indicate that the characters you enter for a

third-party security device should appear on-screen as you type them. Select this check box only if you also selected the Third Party security device installed check box.

Use script   Select this check box if you want to use the script specified in the Login tab when establishing your connection.

See Also
[Name Resolution Tab Options](#)
[Gateway Tab Options](#)
[Port Tab Options](#)
[Dial Tab Options](#)
[Call Type Tab Options](#)
[Modem Tab Options](#)
[IP Configuration Tab Options](#)
[Login Tab Options](#)
[RAS Configuration Tab Options](#)
[Advanced Tab Options](#)

Advanced Tab Options

The following table describes the options available on the Advanced tab:

Option	Description
IP Address	Type the IP address.
Physical Address	Type the physical address in the appropriate text boxes.
	Caution: Be careful when setting frequent destinations; an incorrect physical address may cause network communication conflicts.
Primary Interface	If you want the interface to be the primary one, select the Primary Interface check box.
	Caution: This setting is automatically set by Custom to the correct interface; modifications to this setting should be performed with caution.
Ethernet Type	If you are using Ethernet, choose the type of Ethernet packets your computer can transmit and receive.
	Ethernet physical layer packets are one of two forms: DIX or IEEE. The vast majority of networks use DIX, though all systems are designed to receive IEEE packets as well.
	ChameleonNFS can receive both DIX and IEEE packets simultaneously and will send out the format selected in the dialog box. Many other machines will only receive the selected format.
	Caution: Unless you are absolutely positive that you are on an IEEE packet network, do not change this value. Many systems do not respond correctly to IEEE packets, making troubleshooting your network very difficult.
Always prompt user when changing the primary interface	Select this check box if you want to be prompted each time you select an interface. The prompt will ask you to confirm whether you want the selected interface to be the new primary interface. If you do not want the prompt to appear, clear this check box.
	If you select this check box, Custom displays a dialog box that shows you what all the parameter values for the current primarynterface are and what they will change to if you change the primary interface.
Make selected interface the primary interface	If you select this check box, the protocol stack will check whenever data needs to be sent out to see if the data is destined for any of the local networks to which the PC is attached. If the packet is not destined for any of the local nets, then the packet will be sent to the default gateway of the currently selected interface which is also the primary interface. The selected interface is the one that is currently highlighted.

See Also
IP Configuration Tab Options

Services

[Host Table...](#)

[INETD Configuration...](#)

Host Table...

Lets you define a host table, which can be used to map computer names and IP addresses with one another.

See Also

Defining a Host Table

INETD Configuration...

Lets you install and add servers for INETD.

See Also

Installing Servers Under INETD
Adding New Servers to INETD

INETD

The Internet Services Daemon (INETD) feature is based upon the UNIX INETD super-server which automatically launches other servers when requested. INETD saves memory and helps eliminate the necessity to launch individual servers.

For example, if someone wants to reach you using the Talk application and you do not have it open, but have it listed in your INETD configuration, then INETD will open it automatically when it senses that someone is trying to reach you through Talk.

Help

[Contents](#)
[About Custom...](#)

About Custom...

Choose the About Custom... command from the Help menu to display information about the program. You can then do either of the following:

- Choose the Copy button to copy the application version information into the Windows clipboard. You can then paste this information into any application.

- Choose the OK button to continue.

BOOTP

The UDP/IP bootstrap protocol (BOOTP) permits a workstation to find its Internet address and other configuration information, such as default gateway and domain name server.   A workstation running BOOTP client broadcasts onto the network a BOOTP request packet.

A machine running the BOOTP server application returns a response that includes the host's Internet address, the address of a boot server, the address of a default gateway, and other configuration information such as the addresses of the domain name servers, the subnet mask, and its host and domain name.

Note: The BOOTP information returned by the server will supersede your current configuration.

The BOOTPerver must be on the same subnet or else a BOOTP helper is needed on the router.

DHCP

The Dynamic Host Configuration Protocol (DHCP) permits a workstation to find its Internet address and other configuration information, such as the default gateway and domain name server.

A machine running the DHCP server application returns a response that may include the host's Internet address, the address of a boot server, the address of a default gateway and other configuration information such as the addresses of the domain name servers, the subnet mask, and its host and domain name.

DHCP is more flexible and returns more information than BOOTP.   It is a dynamic lease, meaning it may return different IP addresses depending upon what negotiation has taken place between your workstation and the DHCP server.

The DHCP server must be on the same subnet or else a DHCP helper is needed on the router.

RARP

The Reverse Address Resolution Protocol (RARP) permits a workstation to find its IP address.   It returns no additional information other than the IP address which is based on a MAC address (Media Access Control).   This protocol is useful for users who only have access to a Reverse ARP server.   RARP is nots flexible as BOOTP or DHCP.

Note: RARP is not available for serial dialup interfaces.

DNS

Domain Name System.   An online distributed database that maps machine names into IP addresses.

parity

An error-checking procedure that is performed on transmitted data bits.

default gateways

The gateway that is to receive communication destined for addresses in an unknown subnet.

alternate gateways

Gateways that are to be tried automatically if the default gateway fails.

connection file

A connection file contains all of the information ShivaPPP needs to connect to the remote network, including the following information:·

- the telephone number of the remote access server you want to dial
- the username and password (if any) you have been assigned for dialing in to the server
- the network protocols (IPX or NetBEUI/LLC) ShivaPPP should use so you have access to the networking services you need

route entries

Custom uses the route entries to inform the gateway about the networks that gateway supports for the designated interface.   NEWT attempts to route packets designated to destinations other then this host, or redirects, by checking the route entries.   If an entry matching the destination is found, the packet will be routed to the appropriate gateway through the designated interface.   Packets with an unknown destination are dropped.

flow control

A method of managing the flow of data between a DTE and a modem or other DCE. RTS/CTS (also called hardware flow control) and XON/XOFF (also called software flow control) are types of flow control.

RTS/CTS

An acronym for Request to Send/Cleared to Send, a method of [flow control](#) through an RS-232 cable (sometimes called a hardware handshaking cable) in which RTS is the signal sent from the computer or terminal to the modem, and CTS is the modem's response indicating that it is ready. RTS/CTS is also called hardware flow control. See also [XON/XOFF](#).

XON/XOFF

A software-based type of flow control in which the communications software signals that is ready or not ready to receive data. XON/XOFF is also called software flow control. See also RTS/CTS.

Installing Servers Under INETD

To install servers under INETD, do the following:

1. Choose the INETD Configuration... command from the Services menu.   The INETD Configuration dialog box appears.

   All the servers that INETD can open when requested are listed in the Services list box.   A default list of servers that NetManage supplies initially appears.

2. Select the server or servers you want to install and choose the right-arrow button (>>).   All selected servers will now appear under the Installed field.

   To remove any installed servers, select the desired server in the Installed field and choose the left-arrow (<<) button.

3. Choose the OK button to save changes.

Note: For any changes to take effect, you must restart Windows.

See Also
Adding New Servers to INETD

Adding New Servers to INETD

If you want to add additional servers that are not in the INETD default list, do the following:

1. From the INETD Configuration dialog box, choose the Advanced button.   The Advanced dialog box appears.

2. In the Description option, enter the name of the server you want to add.   For example, if you want to add a winsock-based Gopher server, you could specify gopher server for this option

3. In the Command line option, type the pathname of the server application you want to add.   Then specify the port number in the Port field, and the protocol type in the Protocol field.

4. Choose the Add button to add the server to the list of servers in the INETD Configuration dialog box.

See Also

Installing Servers Under INETD

Troubleshooting

If you experience difficulties using Custom, verify that the installation and setup steps have been successfully completed.   For details, refer to the Installation and User's Guide.

Setting Up ODI

The Open Data-Link interface (ODI) allows multiple network protocols to be used concurrently on a LAN adapter in a workstation on the network and is an alternative to NDIS.   The components of ODI are:

- Network drivers: Multiple Link Interface Drivers (MLIDs) are device drivers that handle the sending and receiving of packets to and from a physical or logical LAN media.
- Link Support Layer (LSL):   Novell's LSL handles the communication between protocol stacks and the network drivers (MLIDs)
- Protocol Stacks: Network Layer protocol stacks transmit and receive data over a logical or physical network.

Custom verifies that your system has LSL.COM running during setup time, and if so, automatically installs the version of the stack that supports ODI.   After ODI is installed you can access a Novell Netware server, for example, as well as use Chameleon in Windows.

See Also
First Time Installation of ODI and ChameleonNFS
Installing ChameleonNFS in an Existing ODI Environment.
Sample NET.CFG File
Switching from an NDIS Environment to an ODI Environment
Switching from an ODINSUP Environment to an ODI Environment
Troubleshooting ODI

First Time Installation of ODI and ChameleonNFS

To install both ODI and ChameleonNFS for the first time, do the following:

1. At the DOS prompt, create a directory (C:\ODI for example).

2. Copy the LSL.COM, driver (3C503.COM for example).   If you want to use Novell and Chameleon concurrently, copy the protocol stack files (IPXODI.COM) and Netware shell (NETX) to this directory.

3. Append the following lines to the end of the AUTOEXEC.BAT file:
   ```
   C:\ODI\LSL.COM
   C:\ODI\<LAN driver> (for example, 3C503)
   ```
   Optionally, you can add the following lines if you want to have the Novell IPX protocol stack:
   ```
   C:\ODI\IPXODI.COM
   C:\ODI\NETX
   ```

4. Create a NET.CFG file and place it in the C:\ODI directory.   Refer to the sample file provided at the end of this appendix.

   A NET.CFG file is required to run both NetWare and ChameleonNFS concurrently.

   Caution: You need to know which NET.CFG file is used by the ODI environment (LSL).   We suggest that you have only one NET.CFG file on your disk.

   To ensure smooth establishment of an ODI environment, refer to your network adapter vendor's ODI documentation.

5. Reboot your system.

6. If you are using Novell Netware and loaded Novell ODI drivers, then log onto your server using the appropriate account and password, and verify to see if you are connected to the server by using the WHOAMI command.

7. Start Windows.

8. Install ChameleonNFS (refer to your quick install card).

   You can tell when ODI-based ChameleonNFS is installed on your system by viewing the Setup menu on the Custom application.   If the Hardware option is dimmed (which is always the case for Windows for Workgroups), then ODI is installed on your system and has been detected by the installation program.

   When you are finished setting up Custom, select the Save option to save your configuration.

   Custom automatically detects the location of the NET.CFG file and then modifies it.

9. If Custom cannot detect the NET.CFG file, a prompt appears asking you to enter its path.   If you know the file's location, then enter its path and choose the OK button.

   If you do not know the location of the NET.CFG file, then choose the Cancel button.   Custom will automatically copy NetManage's sample NET.CFG file and place it at the root directory of drive C. Custom will also open a Window Help file that will give you information about NET.CFG.

   Note: The NET.CFG file that NetManage supplies is only a sample file.   Because user environments are configured differently, this sample file may or may not work with your configuration.   There is an ODI online help file available that contains detailed information about the sample NET.CFG file.   You can choose to view this help file when prompted for it.

10. Reboot your system.

See Also

Installing ChameleonNFS in an Existing ODI Environment

To install ChameleonNFS for the first time in an existing ODI environment, do the following:

1. Start Windows.

2. Install ChameleonNFS (refer to your quick install card).

    You can tell when ODI-based ChameleonNFS is installed on your system by viewing the Setup menu on the Custom application.   If the Hardware option is dimmed (which is always the case for Windows for Workgroups), then ODI is installed on your system and has been detected by the installation program.

    When you are finished setting up Custom, select the Save option to save your configuration.

    Custom automatically detects the location of the NET.CFG file and then modifies it.

3. If Custom cannot detect the NET.CFG file, a prompt appears asking you to enter its path.   If you know the file's location, then enter its path and choose the OK button.

    If you do not know the location of the NET.CFG file, then choose the Cancel button.   Custom will automatically copy NetManage's sample NET.CFG file and place it at the root directory of drive C. Custom will also open a Window Help file that will give you information about NET.CFG.

    Note: The NET.CFG file that NetManage supplies is only a sample file.   Because user environments are configured differently, this sample file may or may not work with your configuration.   There is an ODI online help file available that contains detailed information about the sample NET.CFG file.   You can choose to view this help file when prompted for it.

4. Reboot your system.

See Also
First Time Installation of ODI and ChameleonNFS
Sample NET.CFG File
Setting Up ODI
Switching from an NDIS Environment to an ODI Environment
Switching from an ODINSUP Environment to an ODI Environment
Troubleshooting ODI

Switching from an NDIS Environment to an ODI Environment

If you are switching from an NDIS-based interface to an ODI-based interface, do the following:

1. Start Windows in the Enhanced Mode.

2. Install ChameleonNFS (upgrade installation) according to the instructions on your quick install card.

3. After completing installation, reboot your system and do the following:

   a) Start Windows and then choose the Network icon from the Control Panel.

   b) Select NetManage ChameleonNFS (all versions) from the list of networks and choose the Remove... button.   The NEWT icon will disappear from your screen.

4. Delete the following from the CONFIG.SYS file:

   ```
   DEVICE=C:\NETMANAG\PROTMAN.DOS /I:C:\NETMANAG
   DEVICE=C:\NETMANAG\ELNKII.DOS     (or your card's driver)
   DEVICE=C:\NETMANAG\NETMANAG.DOS
   ```

5. Delete the following from the AUTOEXEC.BAT file:

   ```
   \NETMANAG\NETBIND
   ```

6. At the DOS prompt, create a directory named C:\ODI.

7. Copy the LSL.COM, Multiple Link Interface Driver (MLID) (3C503.COM for example), protocol stack files (IPXODI.COM), and Netware shell (NETX) to this directory.

8. Append the following lines to the end of the AUTOEXEC.BAT file:

   ```
   \ODI\LSL.COM
   \ODI\<LAN driver> (for example, 3C503.COM)
   ```

   Optionally, you can add the following lines if you want to have the Novell IPX protocol stack:

   ```
   \ODI\IPXODI.COM
   \ODI\NETX
   ```

9. Create a NET.CFG file and place it in the C:\ODI directory.   Refer to the sample file provided at the end of this chapter.

   A NET.CFG file is required to run both NetWare and ChameleonNFS concurrently.

   Note: Make sure you add C:\ODI to your path statement in your AUTOEXEC.BAT file.

To ensure smooth establishment of an ODI environment, refer to your network adapter vendor's ODI documentation.

10. Reboot your system.

11. Start Windows from the Program Manager, and select the Run entry from the File menu and enter the following:

    ```
    \NETMANAG\CUSTOM.EXE -o
    ```

12. Custom automatically detects the location of the NET.CFG file and then modifies it.

    If Custom cannot detect the NET.CFG file a prompt appears asking you to enter its path.   If you know the file's location, then enter its path and choose the OK button.

    If you do not know the location of the NET.CFG file, then choose the Cancel button.   Custom will automatically copy NetManage's sample NET.CFG file and place it at the root directory of drive C.

    The NET.CFG file that NetManage supplies is only a sample file.   Because user environments are configured differently, this sample file may or may not work with your configuration.   There is an ODI online help file available that contains detailed information about the sample NET.CFG file.   You can choose to view this help file when prompted for it.

13. Close Custom, reboot your system, and do the following:

   a) Start Windows and choose the Network icon from the Control Panel icon.

   b) Choose the Add>> button.   The Dialog box expands to include a list of available networks.

   c) Select NetManage ChameleonNFS (all versions) from the list and choose the Install... button. This network is added to the list of Installed Networks.

   d) Choose the OK button.   The NEWT icon will appear on your screen.

See Also
First Time Installation of ODI and ChameleonNFS
Installing ChameleonNFS in an Existing ODI Environment.
Sample NET.CFG File
Setting Up ODI
Switching from an ODINSUP Environment to an ODI Environment
Troubleshooting ODI

Switching from an ODINSUP Environment to an ODI Environment

Note: There is no need to keep the ODINSUP configuration with native ODI support.   You may want to eliminate some extra layers, thus releasing more memory and increasing reliability.

If you are switching from an ODINSUP-based interface to an ODI-based interface, do the following:

1. Start Windows in the Enhanced Mode.

2. Install ChameleonNFS (upgrade installation) according to the instructions on your quick install card.

3. When the installation is complete, delete the following from the AUTOEXEC.BAT file:

    ```
    ODINSUP
    NETBIND
    ```

4. Delete the following from the CONFIG.SYS file:

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

5. In the Program Manager, choose the Run command from the File menu and enter the following:

    ```
    \NETMANAG\CUSTOM.EXE -o
    ```

6. Reboot your system.

See Also
First Time Installation of ODI and ChameleonNFS
Installing ChameleonNFS in an Existing ODI Environment.
Sample NET.CFG File
Setting Up ODI
Switching from an NDIS Environment to an ODI Environment
Troubleshooting ODI

Sample NET.CFG File

```
# # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
# net.cfg
# NetManage, Inc.      10/23/95
#
# This net.cfg file is a working example and tested
# with NetManage TCPIP protocol stack (nmodi/newt) and # Novell IPX protocol stack
#(ipxodi/netx)simultaneously.
#
# In case a problem occurs:
#
# 1. Make sure there's no other net.cfg on your hard      # disk.
#
# 2. In order for nmodi.com to load/run you need at   # least the following entries in the
appropriate LINK     # DRIVER section of NET.CFG.
#   Ethernet Adapters:
#             frame ethernet_ii
#             Protocol IP    800     ETHERNET_II
#             Protocol ARP   806     ETHERNET_II
#             Protocol RARP  8035    ETHERNET_II
#   TokenRing Adapters:
#             Frame TOKEN-RING_SNAP
#             Protocol IP    800     TOKEN-RING_SNAP
#             Protocol ARP   806     TOKEN-RING_SNAP
#             Protocol RARP  8035    TOKEN-RING_SNAP
#
# Please note that all ethernet sections are similar   # as well as all token-ring sections.
# # # # # # # # # # # # # # # # # # # # # # # # # # # # #
# 3COM EtherLink III Adapter
Link Driver 3C509
        Frame ETHERNET_802.3
        Frame ETHERNET_II
        Protocol IPX   0       ETHERNET_802.3
        Protocol IPX   8137    ETHERNET_II
        Protocol IP    800     ETHERNET_II
        Protocol ARP   806     ETHERNET_II
        Protocol RARP  8035    ETHERNET_II
# INTEL Ether Express Adapter
Link Driver EXP16ODI
        Frame ETHERNET_802.3
        Frame ETHERNET_II
        Protocol IPX   0       ETHERNET_802.3
        Protocol IPX   8137    ETHERNET_II
        Protocol IP    800     ETHERNET_II
        Protocol ARP   806     ETHERNET_II
        Protocol RARP  8035    ETHERNET_II
#IBM Token Ring Adapter
Link Driver TOKEN
        Max Frame Size 1552
        Frame TOKEN-RING
        Frame TOKEN-RING_SNAP
        Protocol IPX   E0      TOKEN-RING
        Protocol IPX   8137    TOKEN-RING_SNAP
        Protocol IP    800     TOKEN-RING_SNAP
        Protocol ARP   806     TOKEN-RING_SNAP
        Protocol RARP  8035    TOKEN-RING_SNAP
#IBM LAN Support Program
Link Driver LANSUP
        Max Frame Size 1552
        Frame TOKEN-RING
```

```
        Frame TOKEN-RING_SNAP
        Protocol IPX   E0      TOKEN-RING
        Protocol IPX   8137    TOKEN-RING_SNAP
        Protocol IP    800     TOKEN-RING_SNAP
        Protocol ARP   806     TOKEN-RING_SNAP
        Protocol RARP  8035    TOKEN-RING_SNAP
#OLICOM Tken Ring Adapter
Link Driver OCTOK16
        Max Frame Size 1552
        Frame TOKEN-RING
        Frame TOKEN-RING_SNAP
        Protocol IPX   E0      TOKEN-RING
        Protocol IPX   8137    TOKEN-RING_SNAP
        Protocol IP    800     TOKEN-RING_SNAP
        Protocol ARP   806     TOKEN-RING_SNAP
        Protocol RARP  8035    TOKEN-RING_SNAP
#Madge Token Ring
Link Driver MADGEODI
        Max Frame Size 1552
        Frame TOKEN-RING
        Frame TOKEN-RING_SNAP
        Protocol IPX   E0      TOKEN-RING
        Protocol IPX   8137    TOKEN-RING_SNAP
        Protocol IP    800     TOKEN-RING_SNAP
        Protocol ARP   806     TOKEN-RING_SNAP
        Protocol RARP  8035    TOKEN-RING_SNAP
# eof # # # # # # # # # # # # # # # # # # # # # # # # # # # # #
```

See Also

First Time Installation of ODI and ChameleonNFS
Installing ChameleonNFS in an Existing ODI Environment.
Setting Up ODI
Switching from an NDIS Environment to an ODI Environment
Switching from an ODINSUP Environment to an ODI Environment
Troubleshooting ODI

Troubleshooting ODI

o Make sure your system is running the latest version LSL and MLID.

Usually manufacturers of network interface cards have the latest version of available MLID.   Or, you can download them from Compuserve (GO NOVLIB), or from FTP.NOVELL.COM using FTP.

o If the NMODI driver fails to load, check the following:

a) Make sure there is no other NET.CFG on your hard disk.

b) In order for nmodi.com to load/run you need the following entries in the appropriate LINK DRIVER section of NET.CFG.

```
Ethernet Adapters:
        frame ethernet_ii
        Protocol IP           800     ETHERNET_II
        Protocol ARP   806     ETHERNET_II
        Protocol RARP  8035    ETHERNET_II
TokenRing Adapters:
        Frame TOKEN-RING_SNAP
        Protocol IP           800     TOKEN-RING_SNAP
        Protocol ARP   806     TOKEN-RING_SNAP
        Protocol RARP  8035    TOKEN-RING_SNAP
```

Please note that all Ethernet Link Driver sections are the same as well as all token-ring sections, independent of a particular MLID.

If your network media is Token-Ring and you have more than one ring, you may want to put the following line in your AUTOEXEC.BAT file before NMODI:

```
C:\ODI\ROUTE BOARD=2
```

The board parameter ensures that ROUTE.COM is bound to logical board TOKEN-RING_SNAP, which handles TCP/IP traffic.   Refer to the Novell IPX documentation for more information about ROUTE.COM

See Also
First Time Installation of ODI and ChameleonNFS
Installing ChameleonNFS in an Existing ODI Environment.
Sample NET.CFG File
Setting Up ODI
Switching from an NDIS Environment to an ODI Environment
Switching from an ODINSUP Environment to an ODI Environment

Network Addresses

The official description of Internet addresses is RFC1020, Internet Numbers.   The DDN Network Information Center (NIC) at SRI International in Menlo Park, California, maintains and distributes the RFC documents.   The NIC also assigns Internet addresses and network numbers.   When an organization applies to the NIC, the NIC assigns a network number or range of addresses that is appropriate to the number of host devices on the network.

See Also
Addresses and Routing
Classes of Internal Addresses
Internet Address Conventions
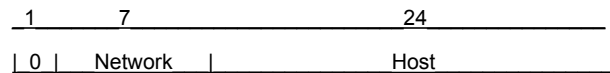Internet Address Notation
Internet Addresses

Classes of Internet Addresses

As described in RFC1020, Internet addresses are 32 bit quantities, divided into five classes.   Each class differs in the number of bits allocated to the network and host portions of the address.   For this discussion, consider a network to be a collection of computers(hosts) that have the same network field value in their Internet addresses.
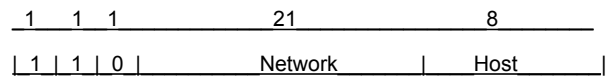
The Class A Internet address format allocates the highest eight bits to   the network field and sets the highest priority bit to 0 (zero).   The remaining 24 bits form the host field.   Only 128 Class A networks can exist, but each Class A network can have almost 17 million hosts.   The following figure illustrates the Class A format.

```
 1       7                          24
|_____
| 0 |    Network    |                Host            |
```

The Class B Internet address format allocates the highest 16 bits to the network field and sets the two highest-order bits to 1,0.   The remaining 16 bits form the host field.   Over 16,000 Class B networks can exist, and each Class B network can have up to 65,000 hosts.   The following figure illustrates the Class B format.

```
 1    1            14                 16
|_____
| 1 | 0 |      Network    |        Host            |
```

The Class C Internet address format allocates the highest 24 bits to the network field and sets the three highest-order bits to 1,1,0.   The remaining eight bits form the host field.   Over two million Class C networks can exist, and each Class C network can have up to 255 hosts.   The following figure illustrates the Class C format.

```
 1    1    1               21                 8
|_____
| 1 | 1 | 0 |           Network          |   Host      |
```

The Class D Internet address format for multicast groups, as discussed in RFC988.   In Class D addresses, the four highest-order bits are set to 1,1,1,0.

The Class E Internet address is reserved for future use.   In Class E addresses, the four highest order bits are set to 1,1,1,1.   The router currently ignores Class D and Class E Internet addresses, except for the global broadcast address 255.255.255.255.

See Also
Addresses and Routing
Internet Address Conventions
Internet Address Notation
Internet Addresses
Network Addresses

Internet Address Notation

Internet addresses are written as four 3-digit numbers separated by dots (Periods).   Each number, written in decimal, represents an 8-bit octet.   When strung together, the four octets form the 32-bit Internet address.   This notation is called dotted decimal.

The following examples show 32-bit values expressed as Internet addresses:

```
100.100.100.10
255.255.255.255
0.0.0.0
195.32.4.200
```

The largest possible value offield in dotted-decimal number is 255, which represents an octet of all ones.

See Also
Addresses and Routing
Classes of Internal Addresses
Internet Address Conventions
Internet Addresses
Network Addresses

Internet Addresses

Some IP addresses are reserved for special uses and should be used for host, subnet, or network addresses.   The following table indicates which IP addresses are available and which ones are reserved. Avoid illegal addresses such as broadcast (0.0.0.0), subnet broadcast (156.27.0.0 or 156.27.255.255), or loopback (127.x.x.x).

Class	Address or Range	Status
A	0.0.0.0	Reserved
	1.0.0.0 through 126.0.0.0	Available
	127.0.0.0 Loopback	Reserved
B	128.0.0.0	Reserved
	128.1.0.0 through 191.254.0.0	Available
	191.255.0.0	Reserved
C	192.0.0.0	Reserved
	192.0.1.0 through 223.255.254	Available
	223.255.255.0	Reserved
D, E	224.0.0.0 through 255.255.255.254	Reserved
	255.255.255.255	Broadcast

See Also
Addresses and Routing
Classes of Internet Addresses
Internet Address Conventions
Internet Address Notation
IP Configuration Tab
Network Addresses

Internet Address Conventions

If the bits in the host portion of an address are all 0, that address refers to the network specified in the network portion of the address.   For example, the Class C address 192.31.7.0 refers to a particular network.

Conversely, if the bits in the network portion of an address are all 0, that address refers to the host specified in the host portion of the address.   For example, the Class B address 128.1.255.255 refers to all hosts on the 128.1.0.0 network.   (Remember that an octet of zeros becomes the decimal number 255.)

Because of these conventions, do not use an IPddress with all zeros or all ones in the host portion for your router address.

See Also
Addresses and Routing
Classes of Internal Addresses
Internet Address Notation
Internet Addresses
Network Addresses

Addresses and Routing

Consider a host sending an Internet data packet.   If the destination host and sending host are on the same network, the packet goes directly to the destination host.   If the destination host and sending host are on different networks, the packet goes to a router.   Addresses make this routing and delivery of data packets possible.

To determine whether the destination host is on the same network, the sending host compares the network portions of the destination address and its own address.   If these network numbers are the same, the destination host is on the same network.   If the network numbers are different, the destination host is on another network, and the data packet must go to a router.

A router has two or more network interfaces onto different networks.   The primary function of the router is to direct packets between these networks, delivering them to their final destination or to another router. (A router-to-router transmission is called a hop.)

To begin the routing process, the router examines the network number of the destination address.   Using this number as a key, the router locates applicable routing information in its routing table.   The router uses this routing information to send the packet to its final or to an intermediate destination.
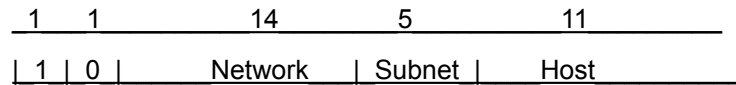
See Also
Classes of Internal Addresses
Internet Address Conventions
Internet Address Notation
Internet Addresses
Network Addresses

Subnetting

Subnetting is a scheme for imposing a simple hierarchy on hosts on a single physical network.   The usual practice is to use the first few bits in the host portion of the network addresses for a subnet field. For example, the following figure shows a Class B address with five bits of the host portion used as a subnet field.   The official description of subnetting is RFC950, Internet Standard Subnetting Procedure.

```
 1   1            14           5            11
|_1_|_0_|      Network    | Subnet |     Host
```

As with theost portion of an address, do not use all zeros or all ones in the subnet field.

See Also
Subnet Masks
Subnetting and Routing

Subnetting and Routing

Routers and hosts can use the subnet field for routing.   The rules for routing on subnets are identical to the rules for routing on networks.   However, correct routing requires all subnets of a network to be physically contiguous.   In other words, the network must be set up so that it does not require traffic between any two subnets to cross another network.   Also, RFC950 implicitly requireshat all subnets of a network have the same number of bits in the subnet field.
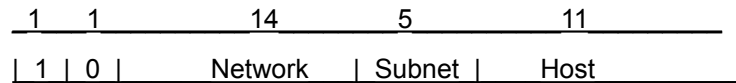
See Also
[Subnet Masks](#)
[Subnetting](#)

Subnet Masks

A subnet mask identifies the subnet field of a network address.   This mask is a 32-bit Internet address written in dotted-decimal notation with all ones in the network and subnet portions of the address.   For the example in the following figure, the subnet mask is 255.255.248.0

```
 1   1            14          5              11
 | 1 | 0 |        Network     | Subnet |     Host
```

The following table shows the subnet masks you can use to divide an octet into subnet and host fields. The subnet field can consist of any number of the host field bits; you do not need to use multiples of eight. However, you should use three or more bits for the subnet field-a subnet field of two bits yields only four subnets,two of which are reserved(the 1,1 and 0,0 values).

Subnet Masks

Subnet Bits	Host Bits	Hex Mask	Decimal Mask
0	8	0	0
1	7	0x80	28
2	6	0xC0	192
3	5	0xE0	224
4	4	0xF0	240
5	3	0xF8	248
6	2	0xFC	252
7	1	0xFE	254
8	0	0xFF	255

See Also
Subnetting
Subnetting and Routing

New

Choose the New command from the File menu to open a new configuration file.

The settings specified in the configuration file will be loaded when the application is started.   The file has a .CFG extension.

Open...

Opens an existing configuration file for the application.   The settings specified in this file will be loaded when the application is started.   The file has a .CFG extension.

To open an existing configuration file, do the following:

1.   Choose the Open command from the File menu.

2.   Select the file you want to open.

     If necessary, locate the desired file by selecting the appropriate drive and directory.

3.   Choose the OK button.

Save

Choose the Save command from the File menu to save the application's current configuration file.

Save As...

Choose the Save As... command from the File menu to save settings for the application to a different configuration file.

Exit

Choose the Exit command from the File menu to exit the application.

Contents

Choose the Contents command from the Help menu to display the contents of the application's Help system.

While using Help, you can return to the Contents screen by choosing the Contents button in the Help window.

About...

Choose the About... command from the Help menu to display information about the program.   You can then do either of the following:

- Choose the Copy button to copy the application version information into the Windows clipboard.   You can then paste this information into any application.
- Choose the OK button to continue.

Fonts ...

Lets you set the

- font type style (including bold and italic)
- size and width of the message body in the application's main window

To select a font, do the following:

1. Choose the Fonts... command from the Settings menu.
2. Select the font, font type, and font size you want to use.
3. Choose the Apply button to apply your selections   Then choose the OK button.

Toolbar

Choose the Toolbar command from the Settings menu to display or hide the application's toolbar.   The toolbar gives you quick mouse access to some of the application's functions.

Smart Buttons

Choose the Smart Buttons command from the Settings menu to display toolbar icons, including each icon's description.

Status Bar

Choose the Status Bar command from the Settings menu to display or hide the application's status bar.

The application displays messages and statistical information in the status bar, which is located at the bottom of the application's window.