# TNHOST Terminal Emulator

## Getting Started Guide

Software Version 4.1

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# Contents

# TNHost Terminal Emulator

You can work on a TN3270 or TN5250–based system from your local PC by using the TNHOST terminal emulator. The emulator lets you connect to IBM mainframes (TN3270–based) or IBM AS/400 systems (TN5250–based). This chapter will help you to get started using the emulator to create a connection to a system, execute commands, and run applications on the system.

Refer to the TNHOST online help for more information about the application and specific functions.

## What is TNHOST Terminal Emulator?

TNHOST is an emulation and communications package for IBM and IBM–compatible personal computers running Microsoft Windows 95, NT, and 3.x. The software duplicates virtually all functions of the TN5250, TN3270, TN3278, and TN3279 terminals, allowing you to work on the host system from your PC.

You can use TNHOST to:

- Launch up to 26 TNHOST sessions for concurrent access to multiple hosts.
- Remap your keyboard using drag–and–drop for simple and flexible assignment of keyboard functions.
- Send (upload) and receive (download) files.
- Create profiles to automate the logon to frequently used systems.
- Change the layout of the TNHOST Window to suit your preferences.
- Resize the window and have fonts resize automatically.
- Change fonts on the fly. Includes 31 crystal–clear bitmap fonts for all resolutions and includes True Type fonts.

- Print host files to a printer connected to your PC
- Call TNHOST from EHLLAPI and Visual Basic programs

## System Requirements

TNHOST requires the following system resources:

- An Intel 386, 486, or Pentium processor
- Windows 95, Windows NT, Windows 3.1, Windows 3.11, or Windows for Workgroups 3.11 operating system
- A TCP/IP protocol stack. Supported stacks include those from Microsoft (Windows 95 and Windows NT) and Ipswitch (Windows 95 and Windows 3.x).

## Installing TNHOST

The TNHOST distribution kit contains four disks. To install TNHOST:

1. Install a Windows TCP/IP stack on your system.
2. Insert disk 1 of the TNHOST distribution into a drive.
3. Do one of the following:
   - For Windows 95 and NT 4.x, click the **Start** button, select **Run**, and then enter the diskette path followed by *install.exe*. For example:

     ```
     a:install.exe
     ```

   - For Windows 3.x and NT 3.x, select **Run** from the File menu, and then enter the diskette path followed by *install.exe*. For example:

     ```
     a:install.exe
     ```

4. Follow the on–screen instructions to install TNHOST.

5. The installation asks you to select the TNHOST version to install. The recommended version for your system is preselected.

6. The installation asks you to enter the destination directory for the TNHOST files. The default directory is:
   *C:\Program Files\TNHOST32*

7. The installation asks you to enter a name for the Windows program group that it will create. The default name is TNHOST.

8. The installation will prompt you to insert each distribution disk. Insert the appropriate disk in drive `A:\` and click **OK** when prompted.

   The installation program installs the files and creates a shortcut for TNHOST in Windows 95 systems or a program group in Windows 3.x systems.

## Starting TNHOST and Connecting to a Host

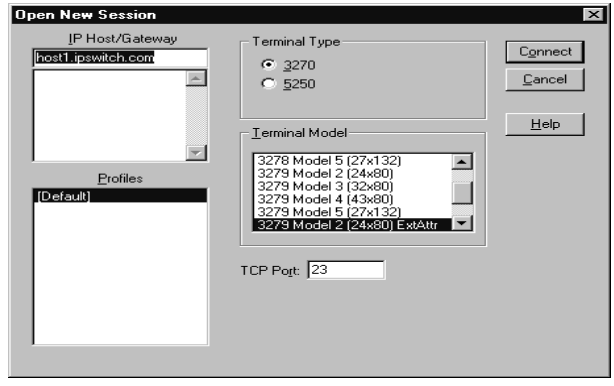
This section describes how to start TNHOST and how to create a connection to a remote TN3270 or TN5250 host system.

### Starting TNHOST

To start TNHOST:

- In Windows 95 and NT 4.x, click the **Start** button and select **Programs–>TNHOST–>TN3270 and TN5250**.
- In Windows 3.x and NT 3.x, open the **TNHOST** folder and double–click the **TN3270 and TN5250** icon.

The Open New Session dialog box appears.




## Sessions

To create a connection to a host, you create a new session or use an existing Session Profile. The Session Profile tells the local system the name of the host system, and its platform or host type. You can create up to 26 concurrent sessions.

## Creating a New Host Connection

To connect to a host:

1. In the **IP Host/Gateway** field, enter the gateway name, host name, or IP address; or choose a host from the list box.

   The list box displays host names and gateways for those hosts listed in the TCP/IP host table. See your system administrator for information on the available hosts.

2. Select the terminal type for this session.

   Select 3270 if you will be accessing an IBM mainframe system. Select 5250 if you will be accessing an IBM AS/400 computer.

3. Select the model for this terminal type.

   3270 Models:

| | |
|---|---|
| 3278 | Models 2 through 5 are typically monochrome terminals with very limited functionality. |
| 3279 | Models 2 through 5 are color capable versions of the 3278. |
| 3279–ExtAttr | Models 2 through 5 with Extended Attribute support are the most powerful version of the 3270 series and capable of sophisticated display. |

5250 Models:

| | |
|---|---|
| Model 2 | Model 2 is a 24 line by 80 column terminal. This is the most popular model used to connect to AS/400s. |
| Model 5 | Models 5 is a 27 line by 132 column terminal. |

4. Enter the TCP/IP Port number to which you want to connect.

   The default telnet port number is 23.

5. Click **Connect** to connect to the host.

   TNHOST makes the requested connection and displays the main window, which prompts for your login information.


6. Enter your login name for the host system and press Return. Then enter your password for the login account and press Return.

   TNHOST now establishes a user session on the host system. In the main window, you will see a message that identifies the operating system type for the host system, followed by a command line prompt, for example:

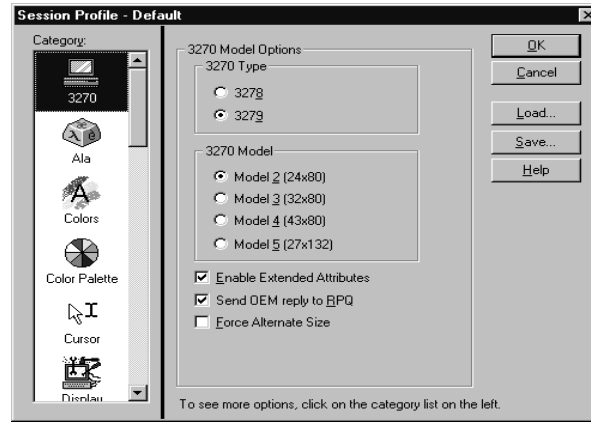
```
Operating System ...
```

## Using a Profile to Connect to a Host

TNHOST lets you save the session configuration in a session profile. The next time you want to connect to the same system, you can double–click on the profile name (in the Open New Session dialog box) to create a session. You can also single–click on the profile name, change any of the connect options, and then press **Connect**.

To save the session configuration as a profile:

1. From the Options menu, select **Edit Session Profile**. The Session Profile dialog box appears.



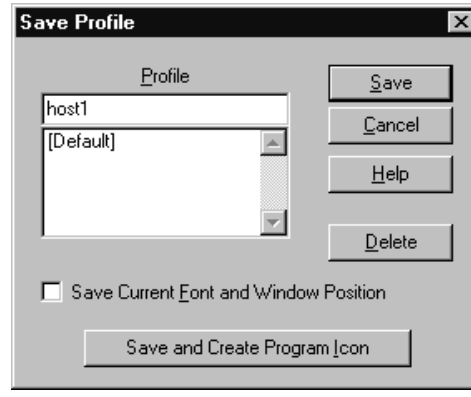

2. In the **Category** list box, make sure 3270 or 5250 is selected (highlighted).

   The options that appear will vary depending on whether you are connected to a 3270 or 5250 host.

3. Choose the session options you want to use.

   You can select any of the other categories in the Session Profile dialog box to change setting and further customize the session profile. See the online help for information about the options in each category.

4. Click the **Save...** button. The Save Profile dialog box appears.




5. Enter a **Profile** name.

   The profile name DEFAULT is used to set the session template when creating a new session. Thus, if you save options to the name DEFAULT, it will affect all sessions you create dynamically using New Session from the File menu.

6. Optionally, select any of the save options:

   Click the **Save Window Layout** check box to save the session font and window position.

   Click **Create Shortcut for Profile** to also create an icon in the program group from which you can start the session.

   Click **HLLAPI Short Name** to assign the short name required to use any of the EHLLAPI, HLLAPI, or WinHLLAPI services.

7. Click **Save** to save the session information to the profile name.

TNHOST stores all its profiles and options in a single file called *tnhost.ini* in your Windows directory.

## Connecting to Multiple Hosts

TNHOST lets you create up to 26 concurrent sessions. After connecting to a host, you can dynamically create a new session either to the same host system or to another host. With the Windows multitasking capabilities, you can start an operation in one Window and switch to another one while the first completes.

SInce all terminal session windows are “top–level” windows, you can open, close, and create icons for each window independently.

## Deleting Sessions

To delete a session, press Ctrl–B from any active window; TNHOST will prompt you to confirm the deletion of that session. Note: You should first log out or exit your host operating system to make sure that your session gets properly terminated.

When a session is deleted, the window will move to the next active session if there is one. If no other sessions are active, the program will terminate and you will return to the Program Manager or your desktop viewer.

## Changing Sessions

To switch between active sessions, you can:

- From the Window menu, choose the session name.
- Click the left mouse button in any part of another TNHOST terminal window.
- Press Ctrl+N to access the next session.

Unlike other applications, TNHOST does not use a Multiple Document Interface (MDI), therefore each window can occupy space on your desktop. You can minimize one window and work among other desktop windows.

## Exiting TNHOST

To exit the TNHOST program, do one of the following:

- From the File menu, select **Close Session**. Then, in the pop–up dialog that appears, click **Terminate** to exit.
- In the toolbar, click on **Close Session**. Then, in the pop–up dialog that appears, click on **Terminate** to exit.
- Press Ctrl+Q, then click **Yes** in the pop–up dialog to exit.

TNHOST disconnects from the host system and then closes all terminal windows. It is preferable to log off active sessions before exiting TNHOST.

## Session Errors

If the network link terminates abnormally, a pop up window will indicate that a network error has occurred and that the session is terminated. If you have more than one session active, TNHOST will display the name of the session that was terminated. The error window will stay active until you press escape (Esc). Abnormal termination may be due to problems with the network or because the TNHOST host is no longer available. When this happens, you must recreate your sessions manually by pressing Ctrl–A.

If the session that was terminated was the only terminal window, then TNHOST is closed and you are returned to the Program Manager.

If the host system or host server is unavailable, then a “PROG505” will appear in the Operator Information Area. When the system comes back up, your session will be restarted automatically. In this situation, the link to the gateway is still active and the gateway can request the host to restart a session.

A session error will always occur if you terminate the host session by logging off your host system. Most host TCP/IP products do not automatically re–create the virtual terminal session and TNHOST will display this error box.

However, you can select the **Upon Disconnect from Host–>Restart Session** option (in the General category of Session Profile options) to automatically recreate a session to a host when the host terminates the session. This makes a telnet 3270 session work like a real 3270 device.

To re–create a session to the same host, press Ctrl–A and the default IP address for the host should appear in the dialog box.

Unlike for the DOS version of TN3270, configuration parameters are not required in the Windows environment.

## Using the TNHOST Window

The TNHOST main window (shown below) displays many standard Microsoft Windows features such as scrollbars, maximize/minimize buttons, a toolbar.


### Main Window Components

The menu bar lists common Windows features such as File and Edit commands and also contains emulator–specific features, such as Transfer, Fonts, and Options. To view descriptions of each menu item, choose **Contents** from the **Help** menu, then click on **Menus**.

All host communications scroll through the window as they are received.

### Toolbar

The Toolbar contains buttons for the most used functions in TNHOST. You can click on a button to activate the function. Place the cursor on the button (do not click) to pop up a description of the button's function.

The toolbar is completely customizable. You can change the toolbar button assignments to represent any command or Quick–Key. See the "Using Options to Customize TNHOST" section in this chapter for more information.

## Emulation Mode

When you complete a successful login to the host system, the TNHOST screen is in emulation mode. In emulation mode, you will see the command prompt for the host system. From the command prompt, you can run host applications, and execute commands.

## Operator Information Area

The 25th line of the display is dedicated as the Operator Information Area, or OIA. The OIA displays information about the status of the current session.

Within the OIA, the following indicators may occur:

**X–SYSTEM Keyboard Locked**

Warns that the keyboard is locked. You must press the **Reset** key before any other operation can take place. This indicator is always on after you press an action key such as **Enter** or a **PF** key. The host system will usually unlock the keyboard automatically.

**Insert**

Insert Mode. Shows that Insert Mode is toggled on. You can reset by pressing the **Insert** key again, the **Reset** key, or any AID generating keys. (AID or attention generating keys are: Enter, PA1, PA2, PA3, Clear, and PF1 to PF24)

**Sess–1**

Session Name. Column 20 in the OIA is the session long name. This is an 8 character name identifying which session you are currently viewing. You can change this string can by using the “name” command in the profile. The default values are from “Sess–1” to “Sess–5”.

**DOC**

Entry Assist Enabled. Shows that the Entry Assist feature is enabled.

**ß**

Word Wrap Enabled. Shows that the Entry Assist Word Wrap feature is enabled.

**PROGxxx**

A severe error has occurred in the 3270 or 5250 data stream. Consult the IBM 3270 or 5250 manual or 3x74 manual for a description of error codes (e.g. PROG505 means that the host is unavailable.).

**Alt**

Alternate character set selected. This indicator appears when the alternate character set select key is pressed to enter an ALA character.

**1.2.3.4**

IP Host. The last field in the OIA is the IP address of the host to which the session is connected.

## Help

TNHOST provides help using the standard Windows Help engine. TNHOST provides context sensitive help in all dialogs by pressing F1 or the **Help** button. While in the main terminal window, you can get help by selecting the **Help** menu option.

If Windows cannot locate the help file, check that is either in the same directory as the TNHOST program file or in the Windows program directory.

## Setting Up and Using the Keyboard and Mouse

The TNHOST emulator maps the keyboard on your PC to the default key settings on a TNHOST terminal. This mapping lets you use applications on hosts that require TNHOST function keys.

To view the default key mapping, from the Help menu choose **Keyboard Map**.

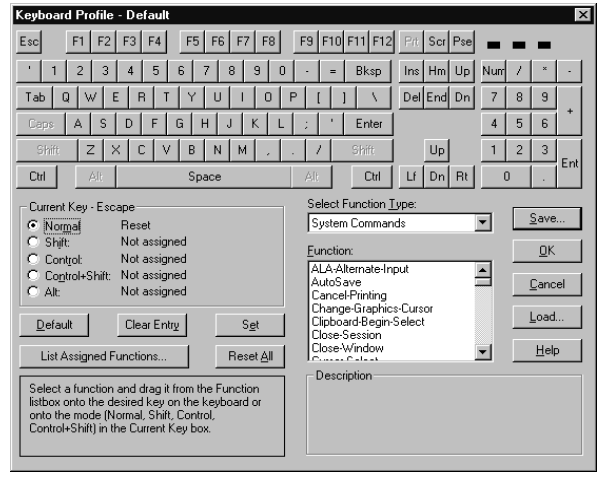
TNHOST also supports the ALA character set for use with NOTIS and DOBIS Library systems. See the ALA support section in this chapter for more information.

You can fully redefine the keyboard to a layout of your choice. The following sections describe the keyboard and mouse functions.

### Creating a Key Mapping

To change the keyboard layout:

1. From the Options menu, select **Terminal Settings–>Keyboard Mapping**. The Keyboard Mapper dialog box appears.




2. To change a key mapping, first press the key button that you want to redefine. The display area in the bottom left hand side will display the current key mappings for the various key states.

3. To assign a function to a key combination, select the key combination (Normal, Shift, Control, or Control+Shift).

4. Select the Function Type you want to assign to the key combination. Click the **Help** button to find a description of each function type.

   The Functions list box contains the functions available in the selected Function Type category.

5. To assign a new function to a key combination, select the function or character in the list box, and then click **Set**. The new value will appear beside the key combination name.

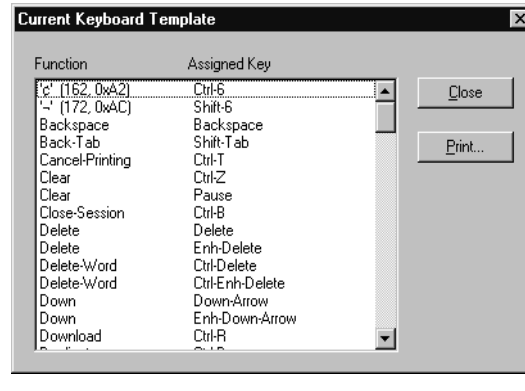
   To reset a key (all states) to its default value, select the key and then click the **Default** button. To clear an entry to a null value, select the key combination and then click the **Clear Entry** button.

6. When you have completed your changes, click **OK** to save the changes only for the current session, or click **Save** to save the changes to a profile.

It is assumed that all alphanumeric keys produce the standard alphanumeric values.

To reset the entire keyboard back to the default setting, click the **Reset All** button, then click **Yes** in the pop–up dialog box to confirm.

To view the current key assignments, that is, if you want to know what key performs a given action, click the **List Assigned Functions** button. The Current Keyboard Template dialog box appears and shows all current key definitions.



To print the current keyboard template, click the **Print...** button. This will format the current keyboard template and print it on the printer of your choice. You can change the font used to print the text.

## Using the Mouse

Although the mouse is not required with TNHOST, it is a very important tool to facilitate many day to day functions. For example, clicking the left mouse button anywhere on the screen will move the cursor to that location.

The mouse provides drag–and–drop capabilities through which you can perform edit functions (such as move, copy, paste, and cut) on the text displayed on the emulator screen.

| **To:** | **Do this:** |
|---|---|
| Select a block of text | Press the left mouse button at the beginning of the text to select, then drag the mouse to the end of the text block. The block of text is highlighted. |
| Drag–and–drop text | Select the text, then press and hold the left mouse button with the pointer inside the highlighted text, drag the text to a new location and release the mouse button. |
| Copy text | Select the text, then press and hold Ctrl+left mouse button with the pointer inside the highlighted text, drag the text to a new location, release the mouse button then the Ctrl key. |
| Cut text to the Clipboard | Select the text and press Ctrl+X. |
| Copy text to the Clipboard | Select the text and press Ctrl+C. |
| Paste text from the Clipboard | Move the cursor to any location on the screen and press Ctrl+V. |
| Copy the screen to the Clipboard | Press Ctrl+Numpad 5 (Numpad 5 is the ’5’ key in the keypad area. The NumLock must be off for this combination), then press Ctrl+C. |

You can select the text highlighting method by choosing **Edit Session Profile** from the Options menu. In the **Cursor** category in the Session Profile dialog box, you can select between a reverse highlight block or a rubber–band style selector box for the mouse select mode.

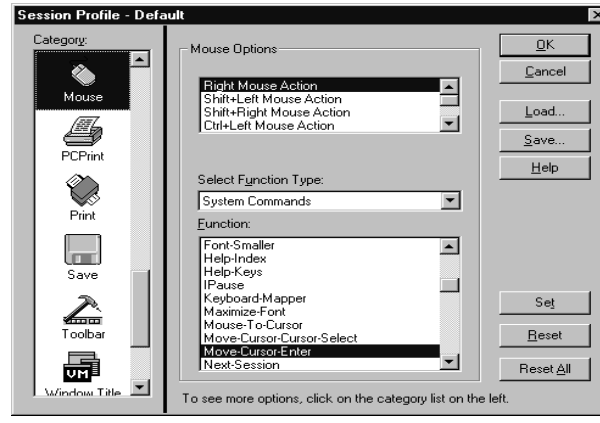
## Default Mouse Actions

The default mouse actions are:

| Mouse button | Action |
|---|---|
| Click left button | Move the cursor to the pointer location |
| Click right button | Move the cursor to the pointer location and press the Enter key. This is very useful for applications that use pull–down menus, such as Rice MAIL. |
| Click and drag left button | Highlight a block of text to delete, move, or copy to another location on the screen or clipboard |
| Double–click left button | Activate hotspot feature. If the text at the pointer location corresponds to any hot-spot text, the hotspot action is performed. |
| Shift+click left button | Perform Clear key action |
| Shift+click right button | Perform Enter key action |
| Ctrl+click left button | Perform PA1 key action |
| Ctrl+click right button | Perform PA2 key action |
| Shift+Ctrl+click left button | Bring up Track Menu |
| Shift+Ctrl+click right button | Bring up Track Menu |

## Changing the Mouse Actions

You can permanently change the mouse actions by selecting **Edit Session Profile** from the Options menu. In the Session Profile dialog box, select the **Mouse** category. In this category, you can change all mouse features except for the left mouse button which is reserved for pointing and selecting text.




To change a mouse action:

1. Select the mouse button combination (in the topmost list box) that you wish to change.

2. Select a Function Type to view the available functions in the list box. Click **Help** to find a description of each function type.

3. Select one of the mouse functions in the **Function** box (bottom list box), and then click **Set**.

   Click **Reset** to reset the mouse option to its default value.

4. When you have completed your changes, click **OK** to save the changes only for the current session or click **Save Options...** to save the options permanently to a profile.

   If **Auto Save** is enabled, then the options are automatically saved to the current profile when you click **OK**.

## Automating Common Tasks

TNHOST provides the following features for automating common tasks. Many of these features are designed to work together to let you fully automate your session.

- Quick–Keys

  Save sequences of keystrokes and commands that you frequently use to Quick–Keys. Quick–Keys can be used in hotspots and poppads to easily execute a sequence of commands, and can be mapped to keys on the keyboard. You can also automatically execute Quick–Keys when TNHOST connects to a host.

- Macros

  Record tasks that you perform on the host or write macros using the TNHOST Basic editor. Macros can be run from the Macro menu, used in hotspots and poppads, and mapped to keys on the keyboard. You can also automatically execute macros when TNHOST connects to a host.

- Hotspots

  Designate text strings on the host screen as hotspots that automatically execute functions. You can set up hotspots to automatically type action keys, editing keys, or characters and execute system commands. macros, and Quick–Keys.

- Poppads

  Store frequently used functions on a floating pop–up toolbar, called a poppad. You can set up poppads to automatically type action keys, editing keys, or characters and execute system commands, macros, and Quick–Keys.

The following sections describe how to set up and use these automation features. These features, in combination with the ability to configure your mouse, keyboard, and the toolbar, allow you to automate most TNHOST tasks. The TNHOST help system also provides examples of each feature.

## Creating/Using Quick–Keys

A Quick–Key is simply a sequence of keystrokes that can be easily referenced and assigned to a key. Quick–Keys allow you to automate repetitive tasks.

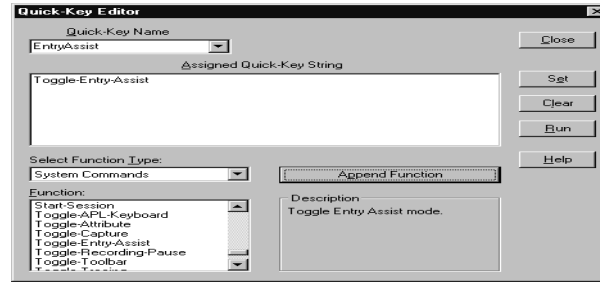
Quick–Keys can contain two types of objects:

- Quoted strings — ASCII strings surrounded by double quotes.
- Functions — one of the functions displayed in the list box.

To create, edit, and delete Quick–Keys, you use the Quick–Key Editor.

To create a new Quick–Key:

1. From the Options menu, select **Terminal Settings–>Quick–Key Editor**. The Quick–Key Editor dialog box appears.




2. In the Quick–Key Name text box, enter the Quick–Key name .
3. In the Assigned Quick–Key String text box, enter a string.

   A Quick–Key can be up to 254 bytes long and contain an unlimited number of strings and commands. All words must be separated by a space. For example, you must have a space between system commands and quoted strings. You should always surround text in double–quotes.

To add functions to the Assigned Quick–Key String edit box, select a Function Type, then click on the function you want to add in the Functions list box, then click the **Append Function** button. The program will append the function name and add a space if necessary. Click the **Help** button to find a description of each function type.

4. Click the **Set** button to save the Quick–Key.

   You can create as many Quick–Keys as you want. Note that Quick–Keys are system–wide and are not stored in session profiles.

You can run Quick–Keys from the Quick–Key dialog box or run them automatically at startup. However, Quick–Keys are usually used in combination with other TNHOST features like hotspots and poppads.

To assign a Quick–Key to a hotspot or poppad, or map it to a keyboard button:

- In the Define Hotspots, Configure Poppad, or Keyboard Mapping dialog box, select the **Quick–Keys** option in the Function Type list and select the Quick–Key you want to assign from from the Function list.

To run a Quick–Key from the Quick–Key Editor dialog box:

- Select **Edit Session Profile** from the Options menu, then select the **General** category in the Session Profile dialog box. Type the Quick–Key name in the Auto Start Quick–Key box. Note that you must save the current session to a session profile in order to have the Quick–Key run at startup.

## Creating/Using Macros

You can use macros in TNHOST to perform a sequence of tasks. Macros are versatile; you can run macros directly from the Macro menu, assign them to hotspots or poppads, and run them automatically when you connect to a host.

There are two ways you can create macros in TNHOST:

- Use the macro recording feature to record keystrokes you press on the host.
- Use the TNHOST's Basic Editor

To record a macro:

1. In the Macro menu, select **Start Recording**.
2. Perform the steps you want to record. (Note that the macro recording feature only record what you type; it does not record mouse actions.)

   You can select **Pause Recording** from the Macro menu to temporarily stop recording your actions; recording will start again when you select **Resume Recording** from the Macro menu.
3. Select **Stop Recording** from the Macro menu to stop recording the macro. You will be prompted for a filename in which to store the macro. The extension *.wwb* is recommended.

You can edit the macro at any time using the TNHOST Basic Editor; you can access the editor by selecting **Edit** from the Macro menu.

To create a macro using the TNHOST Basic Editor:

---

**Note:**

The TNHOST Basic Editor is compatible with Visual Basic. For help with the Basic Editor and the Basic language, select Editor Help or Language Help from the Basic Editor's Help menu.

---

1. From the Macro menu, select **Edit**. The TNHOST Basic Editor appears.
2. Type the text for your macro.
3. From the Basic Editor's File menu, select **Save** to save the macro; the extension *.wwb* is recommended.

   You can then run the macro from the Macro menu, or run it automatically on startup.

To run a macro:

- Select **Run** from the Macro menu and enter the filename of the macro you want to run. Click **Open** to run the macro. You can stop the macro by selecting **Stop** from the Macro menu. To resume running the macro, select **Continue** from the Macro menu.

To automatically run a macro on startup:

- Select **Edit Session Profile** from the Options menu, then select the **General** category in the Session Profile dialog box. Type the macro name in the Auto Start Quick–Key box. Be sure to specify the full pathname of the macro (for example: *c:\hc\bin\mylogin.wwb*). Note that you must save the current session to a session profile in order to have the macro run at startup.

## Hotspots

You can use the hotspots feature to perform actions by clicking on text on the host session screen. For example, many electronic mail packages have the PF key legend at the bottom of the screen. The format is usually something like: “PF2:Read, PF3:End”. If you double–click the left mouse button on any point of the “PF2” text, TNHOST will press PF2 automatically.

Note that hotspots will not be displayed on the screen unless you have checked the **Show Hotspots** option in the **Display** category of the Session Profile dialog box.

You can assign system commands, action keys, editing keys, Quick–Keys, characters, or macros to a hotspot. Hotspot text strings must be one word with no intervening blanks. Any valid ASCII character can appear in the text string.

TNHOST automatically recognizes the following text strings as hotspots (*n* represents any digit):

Program Function Keys: PF*n*, PF*nn*, F*n*, *n*, *nn*

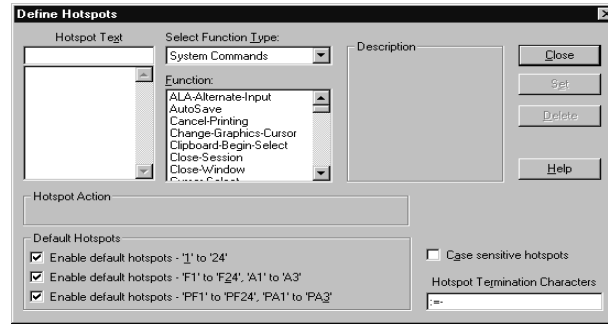
Program Attention Keys: PA*n* A*n*

For example, the following strings would automatically be recognized as hotspots: PF1, PF2, F1, F12, 1, 12, PA1, PA2, A1

The text strings must be delimited on the left side with a blank, null character, or field attribute. For example, if you have defined the text string PF2 as a hotspot, PF2: would be recognized as a valid hotspot, but xPF2 would not, since it is not delimited by a blank. The right delimiter can be any non–numeric character.

## Creating/Using Hotspots

To add new hotspots, from the Options menu, select **Terminal Settings–>Hotspots**. The Hotspots dialog box appears.




To add a new hotspot:

1. In the Hotspot Text box, enter the text you want to use as the hotspot text.

2. If necessary, specify a termination character in the Hotspot Termination Characters box. A termination character is a character that follows a hotspot; the hotspot text must be followed by one of the characters in this box in order for it to be recognized as a hotspot. For example, if **Exit!** is located on the screen and you want the word **Exit** to be a hotspot, you would have to specify an exclamation mark as a termination character.

3. Select the Function Type to view the available functions in the Function list box. Click **Help** to find a description of each function type.

4. In the Function box, select the function you want to assign to the hotspot. Descriptions of the functions will appear in the Description box as you scroll through the functions.

5. Click the **Set** button to map the function to the hotspot text.

   The new combination will be added to the **Hotspot Text** combination box and the selected action will appear in the **Hotspot Action box**.

6. When you have finished making changes, click the **Close** button.

   All Hotspot entries and options are automatically saved to a global profile. They are saved in the file *tnhost.ini* in your Windows directory. You do not need to save your user profile to save the hotspot entries.

There is no limit to the amount of hotspot entries that you can add.

The option **Case Sensitive** is a system–wide feature. Checking this option will affect all hotspot entries currently defined. A check in this box indicates case sensitivity is turned on.

To delete a hotspot definition, select the hotspot text in the list box and click the **Delete** button.

To view hotspots, check the **Show Hotspots** item in the Display category of the Session Profile options. This will display the hotspot texts as black text on a gray background.

## Creating/Using Poppads

Poppads are floating toolbars that display buttons that you can click to automate frequently typed text or functions. TNHOST includes a default poppad containing many frequently used keys.

You can also create your own custom poppads that contain buttons that perform actions you specify. You can set up poppads to automatically type action keys, editing keys, or characters, and execute system commands, macros, and Quick–Keys. For instance, you could create a poppad that contains buttons that automatically type your library card and phone number (along with the Enter key), for use on a library system that requires this information to verify your identity.

Items in the poppad are tiled from left to right and then down, as you write English text. Once you load the poppad, you can drag the border to resize it to the size you desire. You can display up to 5 different poppads concurrently.

To create a poppad:

1. In the Options menu, select **Terminal Settings–>Poppad**. The Configure Poppad dialog box appears.

2. Delete any of the buttons you do not want to have on your new poppad by clicking on the button name in the list at the top of the screen and clicking the **Delete** key.

3. You can now create a new button by typing the text you want to appear on the button in the Button Text box. Beware that the longer the text, the larger the buttons will be. All of the buttons in the poppad are the size of the largest button.

4. Select the Function Type to view the available functions in the Function list box. Click **Help** to find a description of each function type.

5. In the Function box, select the function you want to associate with this poppad button.

6. Click **Add** to add the the poppad button.

   The button will be added to the end of the list. You can use the **Move Up** or **Move Down** buttons to reposition it. You can add as many buttons as you want to this poppad.

7. Click **Save** to save the new poppad. The Save Profile dialog box appears and prompts you to name the poppad profile. You can specify a new name for the profile, or specify the name of an existing profile to save this poppad over an existing profile. Click **OK** to save the poppad.

---

**Note:**

Poppad profiles are not related to profiles that you create in the Session Profile dialog box, or by selecting Save Options from the Options menu. Any poppad you create can be used when you're connected to any profile.

---

To change a poppad:

1. In the Configure Poppad dialog box, click **Load** and specify the name of the poppad you want to change.

2. Click on the poppad button you want to change.

   The button text and function for the button appear in the Button Text and Function boxes.

3. Change the text or function as desired and click **Change**.

   To reposition the button on the poppad, use the **Move Up** and **Move Down** buttons.

   To delete a button, click on **Delete**.

4. Click **Save** to save your changes. The Save Profile dialog box appears. Select the name of the profile and click **OK**.

To display and use a poppad:

1. In the View menu, select **Poppad**.

2. Select one of the options: To load the default poppad, click **Default**; to load a custom poppad, click **Custom**, enter the name of the poppad, and then click **OK**.

   You can click on poppad buttons to activate the associated functions.

   You can move and resize the window using the standard Windows functions.

   You can open several poppads at once. Any poppads you display will stay open until you close them, regardless of which host you are connected to. You can close a poppad by double–clicking the upper left corner of the poppad.

## Printing Host Files

There are three print utilities that you can use to print host files to your a printer connected to your local PC:

- PCPRINT utility
- TPRINT utility
- TNPRINT PrintExplorer

### PCPRINT Utility

The PCPRINT utility, found on many host systems, is a program that runs on your host system that will allow you to print files from your host system to your PC printer. It is identical to downloading the file and then printing the file but it does it in one step. The PCPRINT syntax is listed below.

**PCPRINT for CMS**

For CMS, PCPRINT uses the following syntax:

PCPRINT *fn ft* [*fm*] [( [LPT1/LPT2/LPT3] [CC/NOCC] [FF] [BIN]

**PCPRINT for MUSIC**

For MUSIC, PCPRINT uses the following syntax:

PCPRINT *filename* [[LPT1/LPT2/LPT3] [CC/NOCC] [FF] [BIN]

**PCPRINT for TSO**

For TSO, PCPRINT uses the following syntax:

PCPRINT *datasetname* [[LPT1/LPT2/LPT3] [CC/NOCC] [FF] [BIN]

### Command Line Options

You can use the following options with the print command:

**CC**

Direct PCPRINT to use the first column of every line as the carriage control character

**NOCC**

Direct PCPRINT to not use the first column as the carriage control column. On CMS, TNHOST automatically enables the CC option for LISTING file types.

**FF**

Direct PCPRINT to add a form feed at the end of the print job.

**BIN**

Direct PCPRINT to download the file in binary mode. By default, an EBCDIC to ASCII conversion is performed but with the BIN option, the data is sent directly to the printer.

You can configure the output of PCPRINT jobs by using the options in the PC Print Category of the Session Profile dialog box.

### TPRINT Utility

TPRINT is another printing utility that uses 2048 byte blocks. PCPRINT is more efficient than TPRINT and should always be used if you have the choice.

TNHOST supports Yale's TPRINT facility by supporting the 7171 transparent data stream commands. In transparent mode, the program will support the VT100 Printer On/Off escape codes to direct transparent output to the logical printer port 1. TNHOST does support the 4994 inquiry command and will respond with a VT100 terminal type.

### TNPRINT PrintExplorer

The PrintExplorer is a TNHOST print utility that lets you print host files using your local system's Windows 95 or NT printer setup.

To display the PrintExplorer main window:

- In Windows 95 and NT 4.x, click the **Start** button and select **Programs–>TNHOST–>TN PRINT**.
- In Windows 3.x and NT 3.x, open the **TNHOST** folder and double–click the **TN PRINT** icon.

Refer to the TNPRINT PrintExplorer's help system for information on how to set up and print host files.

## Transferring Files

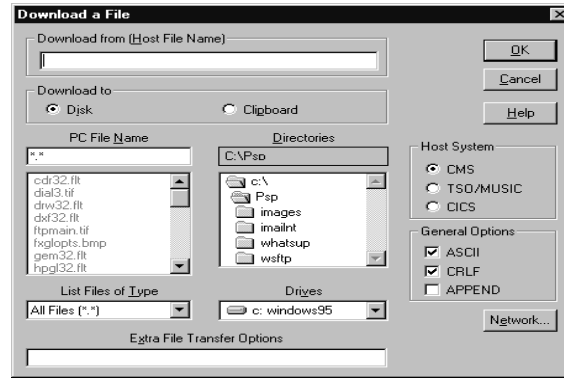
You can transfer files between your personal computer and the TNHOST host. The emulator includes an ASCII file transfer plus four popular protocols for error free file transfer:

### Receiving (downloading) Files

You can receive files on your PC from a TNHOST host as follows:

1. Click the **Download** button; or, from the **Transfer** menu, select **Receive** (download).

   The Download a File dialog box appears.




2. Enter the name of the file on your PC to which you will transfer a host file.

3. Enter the name of the host file to transfer.

4. In the **Host System** list box, select the host operating system from which you are downloading files.

   Select one of the operating system choices: CMS, TSO/MUSIC, CICS. This option must be selected for other options to work properly.

5. Enter any transfer options that you want to use.

   Each option is described at the end of this procedure.

6. Click the **Start** button to transfer the file.

   When the file transfer is completed, you will hear two “beeps.”

### Download to Options

You can use the following download options:

**Disk**

Download a file to your disk. The file can be on your local disk or any networked volume accessible to your machine.

**Clipboard**

Download the host file directly to your clipboard. The file is place in the clipboard in CF_TEXT format.

### General Options

You can use the following general option:

**ASCII**

Translates the file from EBCDIC (IBM Host character set) to ASCII while downloading the file. This option is normally required when transferring text files.

**CRLF**

Translates records on the host file system to CR–LF ( carriage return–linefeed) end of line characters. This option is normally required when transferring text files.

**APPEND**

Append the file to the existing file on the host.

### Extra File Transfer Options

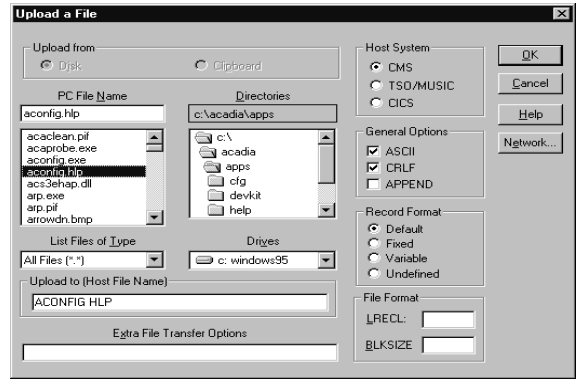
This edit field allows you to enter other operating system specific options which are not directly supported by the dialog box options. The options must be entered in the appropriate operating system format. No editing is performed on these parameters; they are appended directly to the file transfer command.

## Sending (uploading) Files

You can send file from your PC to a TNHOST host as follows:

1. Click the **Upload** button; or, from the **Transfer** menu, select **Send** (upload).

   The Upload a File dialog box appears.




2. Enter the name of the file.

3. Enter the name of the host file.

4. In the **Host System** text box, select the host operating system to which you are uploading files.

   Select one of the operating system choices: CMS, TSO/MUSIC, CICS. This option must be selected for other options to work properly.

5. Enter any transfer options that you want to use.

   Each option is described at the end of this procedure.

6. Click the **Start** button to transfer the file.

   When the file transfer is completed, you will hear two “beeps.”

## Upload to Options

You can use the following upload options:

**Disk**

Download a file to your disk. The file can be on your local disk or any networked volume accessible to your machine.

**Clipboard**

Download the host file directly to your clipboard. The file is place in the clipboard in CF_TEXT format.

## General Options

You can use the following general option:

**ASCII**

Translates the file from ASCII to EBCDIC (IBM Host character set) while uploading the file. This option is normally required when transferring text files.

**CRLF**

Translates CR–LF ( carriage return–linefeed) end of line characters to records on the host file system. This option is normally required when transferring text files.

**APPEND**

Appends the file to the existing file on the host.

## Record Format Options

You can use the following record format options:

**Default**

Lets the host portion of the file transfer use the default record format.

**Fixed**

Upload the file to a Fixed Record format file.

**Variable**

Upload the file to a Variable Record format file. Use this option if you are transferring a binary file (i.e. program file, such as .EXE, .COM, .DLL) and you want to preserve the exact file size.

**Undefined**

Upload the file to an Undefined Record format. This option is valid for the MVS operating system only.

**File Format Options**

You can use the following file format options:

**LRECL**

Enter the logical record size for the file that will be created on the host.

**BLKSIZE**

Enter the block size for the file that will be created on the host. This option is valid for the MVS operating system only.

**Extra File Transfer Options**

This edit field allows you to enter other operating system specific options which are not directly supported by the dialog box options. The options must be entered in the appropriate operating system format. No editing is performed on these parameters; they are appended directly to the file transfer command.

## Using Entry Assist Mode

TNHOST's Entry Assist function enhances the ability to create and edit text material such as memos, letters, reports, and lists. Unlike real 3270 or 5250 terminals, TNHOST does not require support from IBM host editors or the IBM host system.

Since TNHOST was designed for a PC, its implementation of Entry Assist is a superset of the standard IBM Entry Assist. When Entry Assist is enabled, the following extensions are available:

- Word wrap
- Columnar tabbing
- Audible end–of–line signal (Bell)
- Cursor position display
- Definable home position

TNHOST provides cursor word positioning, word delete, and tab to end–of–line functions without requiring Entry Assist to be enabled.

Unlike other emulators, the Word Wrap feature can work within preset margins, or can automatically use the field width as the left and right margins. This allows you to easily use Word Wrap from system to system, without constantly setting margins.

## Setting Entry Assist Options

You can set the values for the margins, tabs, and bell margin options as follows:

1. Click the **Edit Session Profile** button; or, from the **Options** menu, select **Edit Session Profile**. The Session Profile dialog box appears.
2. Select the **Entry Assist** category.
3. Select or enter values for any options you want to use. The following table describes each option.
4. When you have selected options, click **OK**.

You can choose any of the following options:

**Entry Assist Enabled**

When checked, enables Entry Assist mode for data entry on the 3270 screen. TNHOST will use the margins and parameters defined in this dialog.

**Word wrap enabled**

When checked, enables word wrap, if Entry Assist Enabled is checked.

**Margins**

Enter column numbers to specify the left, right, and bell margins. The bell margin is where a bell will sound when the cursor passes the column.

**Tab Stops**

Enter a column number and press the Set button to add a horizontal tab stop. To Clear an entry, first select the entry, then press the Clear button. To clear all tab stops, press the Clear All button.

### Enabling Entry Assist

To enable Entry Assist for the current session, enter Ctrl+E from any 3270 or 5250 session. Any of the word wrap, margin, or column settings that you specified in the **Entry Assist Category** of the Preferences dialog box are now enabled.

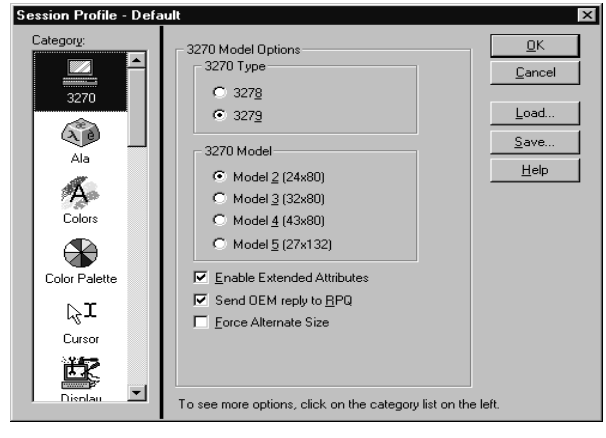
The DOC indicator appears in the message area (OIA) at the bottom of the screen. A cursor position indicator is also shown.

To interactively change the margins, tabs, or bell margin, select **Entry Assist Category** in the Preferences dialog and make the changes.

## Using Options to Customize TNHOST

TNHOST allows you to set each option independently for each terminal session. This allows you to customize each session and save the options to a profile.

To change the session options, display the Session Profile dialog box by selecting the **Edit Session Profile...** from the Options menu or by clicking on the **Edit Session Profile** button.




The **Category** list box allows you to choose which category of options you wish to change. When you select a new category, the dialog options will change to reflect options for this category.

Use the mouse or keyboard to toggle or change any of the options in the dialog box. Click **Help** in the Session Profile dialog box to display a description of each option in the Category.

The Session Option Categories include the following:

**3270 Category**

Sets options for 3270 sessions.

**5250 Category**

Sets options for 5250 sessions.

**ALA Category**

Sets the ALA options. See the “ALA Support” section in this chapter for more information.

**Colors Category**

Changes the colors assigned to 3270 or 5250 field types.

**Color Palette Category**

Changes the color mix for the base 16 colors that are available.

**Cursor Category**

Specifies options for the TNHOST cursor.

**Display Category**

Specifies options that affect editing and display capabilities in 3270 and 5250 sessions.

**Entry Assist Category**

Specifies the Entry Assist options. See the “Using Entry Assist” section in this chapter for more information.

**External Programs Category**

Sets the names of the external utility programs used in TNHOST.

**File Transfer Category**

Specifies the file transfer options.

**Font Category**

Specifies font preferences for TNHOST sessions.

**General Category**

Sets general options for the TNHOST sessions.

**Host Category**

Sets options used for the session hostname.

**Keyboard Category**

Specifies which keyboard profile should be used for the current session and profile.

**Mouse Category**

Specifies the mouse options. See the “Changing the Mouse Actions” section in this chapter for more information.

**PCPRINT Category**

Controls how 7171 and PCPRINT passthru printing is handled.

**Print Category**

Specifies options used when printing a screen using the Print–Screen command or menu option.

**Save Category**

Configures options for Save Screen to Disk and Capture commands.

**Toolbar Category**

Configures the toolbar to perform the actions you choose.

**Window Title Category**

Specifies the Window title.

**Translate Tables Category**

Edits the ASCII/EBCDIC translate tables that are used for characters in TNHOST.

## Saving Options

With TNHOST, you can save all of the session tailored options such as Session Profile, Entry Assist, Colors, Mouse, and ALA Options into a profile. When you create a session, you can use the information from the profile to tailor the session.

There are two types of profiles: user defined profiles and the default profile.

User defined profiles are those that you create yourself and save to disk. When you create a new session, you can still override the IP host/gateway name, terminal type, and terminal features in the Create Session dialog.

The second type is the default profile. When creating a session, TNHOST uses the profile called DEFAULT to set the session characteristics. You can tailor this profile to your liking by making the changing the required preferences and then saving them to a profile called DEFAULT.

## ALA Support

One of TNHOST's most powerful features is its ability to display the ALA character set for use with the NOTIS and DOBIS Library Systems. TNHOST fully supports the ALA character set as defined by ANSI standard Z39.47.

TNHOST achieves this support easily by providing two True Type fonts that contain the complete ALA character set. This allows it to display any 3270 or 5250 panel containing a mixture of EBCDIC and ALA characters at any screen size. The design also allows the screens to be printed to any Windows supported printer.

The workstation program currently supports up to 3 diacritics per base character (which can be a plain EBCDIC character or ALA standalone character). This enables it to support languages such as Thai or Vietnamese.

To enable ALA support, check the **Enable ALA Support** entry in the dialog ALA options from the Options menu. The support will be enabled only if the ALA fonts are installed in your Windows system. To verify this, check the Fonts dialog from the Control Panel and see if the fonts **ALA Courier New (True Type)** and **ALA Lucida Sans TypeWriter (True Type)** are present. If they are not, then reinstall the software from the installation disk so that the fonts are properly installed.

With the fonts installed and ALA enabled, your PC will now be able to display the ALA characters. You can now access NOTIS or DOBIS and try to display panels with ALA characters.

If the screens do not appear to contain any ALA characters, then it is most probable that your access methods to CICS are not properly setup to enable ALA support. Check with your NOTIS/DOBIS or CICS system administrator.

TNHOST supports independent input and output modes. You can instruct the emulator to display diacritic sequences in superimposed mode. For example, the German word “für” is display as “für”. In Side–by–Side mode, the word is displayed as “f¨ur”. For data entry, Superimposed can be though of as a “Compose” mode whereas Side–by–Side is a normal data entry mode.

To allow easy input of ALA characters, TNHOST supports an alternate keyboard map to access the full ALA character set. This map is nearly identical to the 3163 keyboard and TN3270 for DOS. This will make it easy for you to convert to TN3270.

However, if you prefer to change the keyboard, you can do so by pressing the Keyboard Mapping button. This will bring you into the Keyboard Mapping editor where you can assign any system function to a key combination. See the Keyboard Mapping section in this chapter for more information.

To access the alternate keyboard map, you must assign a key to be the alternate keyboard select function in the main keyboard layout.

TNHOST does not have a key assigned to the function ALA–Alternate–Input by default. This means that until you assign a key, you will not be able to access the default ALA alternate keyboard. To assign a key to this function, select the Keyboard Mapping... option from the Options menu. Then press the button with the key that you want to assign the ALA–Alternate–Input function and press Set. Then select the ALA–Alternate–Input from the list box and press OK.

### NOTIS and DOBIS

Both the NOTIS and DOBIS systems implement support for ALA by using the ’holes’ in the EBCDIC character set for the ALA character set. Although this is an efficient method, it precludes use of any alternate character set, basically anything but the plain US English code page.

The main difference between NOTIS and DOBIS from the workstation's point of view is that the ALA character set use different EBCDIC code points. For example, the beta character "ß" (ALA code point 0x3E) has an EBCDIC value of 0xFB for NOTIS but has an EBCDIC value of 0xAB for DOBIS.

To change the internal support for DOBIS, you must add the following line to the [System.Settings] section in the *tnhost.ini* file.

```
[System.Settings]
...leave current options...
Host ALA System = DOBIS
```

## EHLLAPI

TNHOST supports the EHLLAPI standard interface mechanism. This interface allows other Windows programs to communicate and control the emulator.

The ACS3EHAP.DLL included with TNHOST provides support identical to the Attachmate EHLLAPI. Since most vendor products support multiple EHLLAPI DLLs, always choose the Attachmate EHLLAPI entry since TNHOST emulates the functionality of that one.

The *acs3ehap.dll* file must be in your path so that it can be loaded by Windows when you run your client application.

Before you can use the EHLLAPI interface, you must set the Profile Name Association. TNHOST needs to know what EHLLAPI Short Name is associated with what profile. With this association, the EHLLAPI DLL can load the emulator and start sessions automatically.

To set a short name, select the short name letter, select the profile, and press the "<< Set <<" button. To clear a mapping, select the letter and press the ">> Clear >>" button. When you have completed your changes, press OK to save the settings to disk.

If you wish to develop EHLLAPI applications, we suggest you order the EHLLAPI development kit from Attachmate. This part comes with a complete reference for EHLLAPI and some sample programs.

It is not recommended to unload TNHOST before unloading the EHLLAPI client application. This will cause your system to crash since EHLLAPI will be attempting to communicate with a non–existent program.

A few EHLLAPI calls are not supported. Support will be added in a future release. They are:

| | |
|---|---|
| 50 | Start Keystroke Intercept |
| 51 | Get Key |
| 52 | Post Intercept Status |
| 53 | Stop Keystroke Intercept |

## Special Profile Options

There are a number of system tuning parameters which you can manually insert in the *tnhost.ini* in the Windows directory. These parameters allow certain default characteristics to be modified.

### System–wide Changes

System wide changes can be made by adding/changing an entry in the [System.Settings] section of the *tnhost.ini* file. The following options are available:

**Printer Font**

Allows you to change the default printer font used to print the keyboard template from Times New Roman to any True Type font of your choice. Example:

```
[System.Settings]
Printer Font = Arial
```

**ALA Host System**

Allows you to change the ALA host system type from NOTIS to DOBIS. Example:

```
[System.Settings]
ALA Host System = DOBIS
```

**Max Winsock Receive Size**

Allows you to change the default receive size issued to the Winsock TCP/IP stack. By default, TNHOST uses a 20,000 byte block to receive data. You can lower this value to solve problems in low memory situations. Example:

```
[System.Settings]
Max Winsock Receive Size = 4096
```

**Prompt on Close Windows**

Allows you to change the behavior of TNHOST when you either double–click or select the Close option from the System menu. By default, the program will close the window without prompting you to confirm exit. To force the program to prompt on close, add the following line to the System.Settings section:

```
[System.Settings]
Prompt On Close = On
```

**Large Toolbar**

By default, TNHOST use fairly small icons which are easily readable up to 800x600 resolution. However, at 1024x768 and higher, the icons get somewhat small. To use the larger set of icons in the toolbar, add the following line to the System.Settings section:

```
[System.Settings]
Large Toolbar = On
```

**Raw Print Screens**

By default, the Print–Raw–LPTx functions add a formfeed character to the end of the print screen job. To disable the formfeed, add the following line to the System.Settings section:

```
[System.Settings]
Print Raw Formfeed = Off
```

**Modify Tracing File**

By default, the tracing file is created in the root of the current drive as *tnhost.trc*. To change the location and name of trace file, add the following line to the System.Settings section:

```
[System.Settings]
         Trace Filename=F:\TESTPATH\FILE
```

## Host Language Support

You can change the host language after installation by changing the language name in the [System.Language] section. The valid language names are: USEnglish, UKEnglish, Swedish, AustrianGerman, CanadianFrench, and Norwegian. Example:

```
[System.Language]
Language = Swedish
```

## Session Options

You can change the following session parameters:

**Terminal Name Override**

You can override the default mechanism used to negotiate the telnet terminal type. By default, TNHOST will always try to create the most 'intelligent' device (using the options specified) and will work its way down a list to negotiate the telnet terminal type. For example, if EABs are enabled and a 3279 Model 3 is selected, the system will first send the terminal type "IBM–3279–3–E", next "IBM–3279–3", and finally "IBM–3278–3".

If you want to override the name with any completely arbitrary names, insert the list of names in the "Terminal Name Override" key and the program will use the names from left to right. Using regular telnet conventions, the system will always use the last name in the list as the final terminal type.

The key "Terminal Name Override" should be added to a profile section. The sample below uses the profile name VMCMS. Example:

```
[VMCMS]
...options currently defined...
Terminal Name Override = BIGTERM  SMALLTERM
 NVT
```

In this example, the system will first send the terminal name BIGTERM. If the host refuses this name, then it will send SMALLTERM. If the host refuses this name, then it will default to NVT.

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