TS Environment™ for Windows
Installation and Upgrade Guide

INTRODUCTION

Overview

The TS Environment for Windows suite of software products allows developers to implement significant technological advances into their existing commercial applications.

Each Microsoft Windows Workstation must install TS Environment for Windows with a unique Serial Number. Thoroughbred supports multiple sessions on each workstation as well as data sharing via files and records.

Requirements

The TS Environment for Windows is designed for developers who want to take full advantage of the Microsoft Windows environment. The minimum hardware configuration is 486/386 with 8Mb of RAM. Each workstation must have Windows 2000/NT/XP.

INSTALLATION

Package Contents

Your CD is configured for a packaged bundle. Review the CD label to insure receipt of the correct packaged bundle.

- TS Environment for Windows
- Thoroughbred OPENworkshop
- VIP Host
- TS ReportServer
- TS ChartServer
- Gateway for Windows

On a Separate CD:

- VIP Client
- TbredComm
- Gateway for Windows
- TS ReportServer
- TS ChartServer

Back Up Existing Program and Data File Before Installing

If you plan to upgrade Thoroughbred products by copying over your current product files, you can use the following procedure to back up your program and data files:

- Use site procedures to back up your application and data files. Although the upgrade procedure will not affect any files you have created, you may want to take this precaution.

- Use site procedures to back up the IPL, IPLINPUT, and TERMINAL files from the Thoroughbred Basic directory. From the IDL4 subdirectory, back up the TCONFIGW and TCONFIG8 files. The upgrade process will overwrite these system files, which describe how Thoroughbred products interact with your hardware and operating system.

Only Thoroughbred product files will be replaced during the upgrade procedure.

Installing the Files to Your Hard Drive (Windows 2000/NT/XP)

Insert the CD

If TS Environment for Windows is installed on Windows 2000/NT/XP there are special installation instruction that can be viewed in our 8.6.0 Release Notes in the Helpdocs folder on the installation CD.

If the autorun doesn't begin, browse the CD, and run launch.exe.

When the Product Introduction is complete, you will have a window where you can access 8.6.0 Release Notes, Browse the CD, view Product Info (at http://www.tbred.com), find Contact Info, or Install your product.

1. Select **Install**.
2. The next screen will show a listing of Development Environments. Select the environment you purchased.

   Note: During installation you will enter a module code (found on the label). If you do not have the proper module code for the product you select here, you will not be able to run the product.

User Information

Enter your Name, Company, and Product Serial Number located on the label.

Thoroughbred Module Code

Enter the Module Code located on the label. You must enter the correct module code for your product. If you make a mistake you will not be able to activate your system.

Choose Destination Location

The default is C:\Program Files\Tbsc. Select the **Next** button if this is where you want to install. Type the path or press the **Browse** button to select a different installation folder.

Setup Type

Enter one of the following options:

- Typical – most common options (this is recommended).
- Compact – minimal installation.
- Custom – choose the products to install.

Custom allows you to select which product to install. Typical installs all products.

Setup Complete

Due to a problem with InstallShield, please do not restart your system. Select the **No** option, select **Exit**, remove the CD, and restart your system. Please refer to the Development Environment Installation Guide for the merge of the OPENworkshop.

Run Basic

You can run Basic from your Start button, Program Group, or by going to the `install-path\Tbsc\` and selecting **b.exe**. The first time you run Basic, the files will merge. See the Development Environment Installation Guide (OPENworkshop).

Activation

You will see a screen that contains your Serial Number and Installation codes. Please write them down. You will need both of these numbers to activate your system. Select the **Bypass** button for now.

Customize and Test

To customize your system, please refer to the Thoroughbred Basic Customization and Tuning Guide, which will provide additional information on setting up your system.

Running Thoroughbred Environments

At the Basic Console Mode type `RUN "ID"` or `RUN "OO"` To get to your particular product

For more information see the Dictionary-IV User Guide or the reference manual for the product you want to use.

VIP Installation

If you purchased VIP, please see that installation guide for the VIP Client.

TELNET BASIC INSTALLATION

When the TS Environment for Windows is installed on NT, Windows 2000, or XP, Thoroughbred Manager will also be installed as a service. This will allow terminal emulation products such as TbredComm to connect using Telnet to a Windows Basic. This is not a requirement, you may still start a Basic session using the standard shortcut; b.exe IPLINPUT.

> **Notes:** VIP and TbredComm software are not included with the new Thoroughbred TS (Terminal Server) Environment for Windows, but may be purchased separately.
>
> Please refer to the TS Environment for Windows Installation Instructions for detailed instructions. This section simply identifies differences between the standard Windows Basic and the Telnet Basic.
>
> The installation process will detect the target operating system and if installing on Windows NT, Windows 2000, or XP, the Telnet Basic option will automatically be installed.
>
> This does require that the user performing the install have administrative privileges. Privileges will be checked by the installation process and the install will not proceed if they are not at the administrative level.
>
> **IMPORTANT:** If Thoroughbred Manager or the Thoroughbred Server Manager (NT Server only) are running, they must be shut down. The installation process does not make this determination. If any Thoroughbred services are running the installation will not be successful. Typically InstallShield will return an error during the ComponentMoveData phase. If this error should occur, please shut down the Thoroughbred Services and then run the installation again. See Administrating the Thoroughbred Manager below. To shut down the Thoroughbred Server Manager follow the same instructions described for the Thoroughbred Manager.

In addition to the standard Basic files, the following will be installed:

<WindowBasic-Install-Path>\tbjsmgr.exe
Part of the Thoroughbred Manager

<WindowBasic-Install-Path>\tbpview.exe
Thoroughbred Server Status Manager utility. This will allow you to view and kill server processes.

\WINNT\System32\tbjevent.dll
Part of the Thoroughbred Manager

\WINNT\System32\tbjmgr.exe
Part of the Thoroughbred Manager

Once the installation has completed you must reboot. The Thoroughbred Manager will start automatically. Thoroughbred recommends starting any service manager as a specific user. By default, the user is set to 'SYSTEM'. To verify the service is running and to manage the service properties, see Administrating the Thoroughbred Manager below.

Uninstalling

Important: Before you uninstall the TS Environment for Windows you must first uninstall the Thoroughbred Manager. This is NOT done as part of the standard uninstall process. The standard uninstall removes all programs it has installed. This includes tbjsmgr.exe, which is required to uninstall the Thoroughbred Manager.

To uninstall the Thoroughbred Manager see Uninstalling the Thoroughbred Manager.

After the manager has been uninstalled you can uninstall the TS Environment™ for Windows following standard Window procedures.

Note that the uninstall does not remove the *<WindowBasic-Install-Path>* from the system PATH variable.

Starting Basic^{TM} as a Telnet Session

By default the Thoroughbred Manager will listen on port 23 for telnet like connections. If you have multiple Basics loaded, it will execute the first b.exe and its iplinput.txt found in your PATH variable. For more information see PATH Variable.

Using the terminal emulator of your choice simply connect to your workstation.

If you do not have a terminal emulator, install TbredComm, which may be purchased separately. TbredComm is Thoroughbred's terminal emulator designed specifically for the TS Environment for Windows.

The following illustrates starting a Basic session using TbredComm to connect to a TS Environment for Windows.
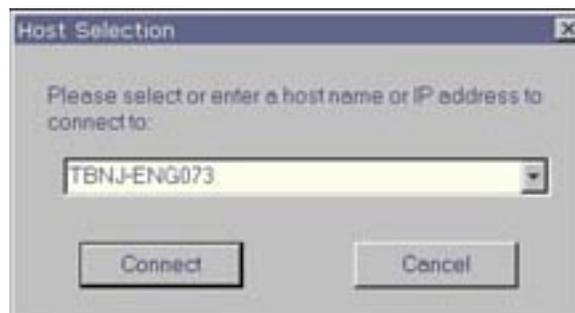
Setting the Port

The Thoroughbred Manager by default uses the telnet port. This is typically port 23. The Thoroughbred Manager can listen on another port by adding the port number to startup parameters (select **Services** from the Control Panel). For example: **-p7000**

In this example, the Thoroughbred Manager will listen for telnet-like connections on port 7000. Also note, in the startup parameter there is NO space between **-p** and the ***port-number***.

TbredComm™ supports the ability to connect on a specified port. The port number can be an optional argument to the shortcut startup. For example: **C:\TSI\BIN\Tbredcom.exe -P 7000**

In this example, the port is specified using an uppercase P with a space preceding the port number.

Administrating the Thoroughbred Manager

The Thoroughbred Manager is administered using the Windows Services dialog box.

- From the Windows Control Panel double click **Services**

- The Services dialog box will appear

- Locate and highlight **Thoroughbred Manager**
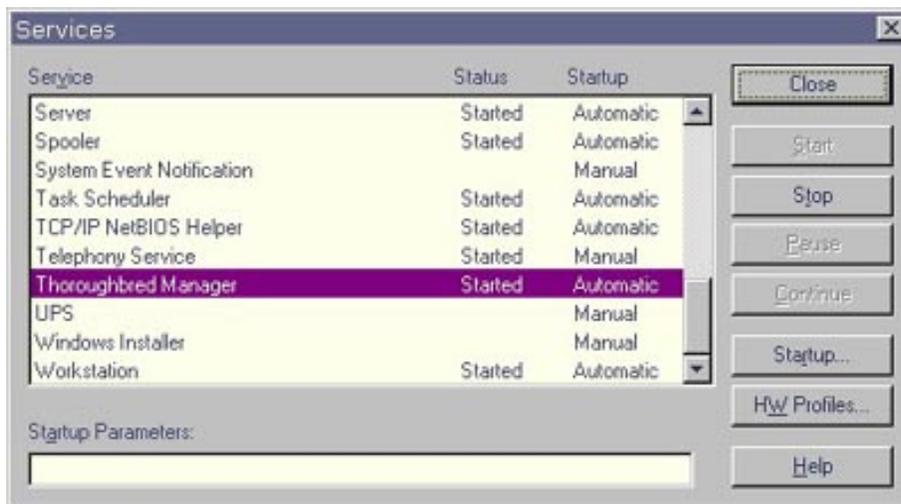
Starting the Manager as a Specific User

Thoroughbred recommends starting any service manager as a specific user. By default, the user is set to **SYSTEM**. To change this setting:

- From the Services dialog box locate and highlight **Thoroughbred Manager**

- Click on **Startup**

- Enable **This Account** and select the desired user account
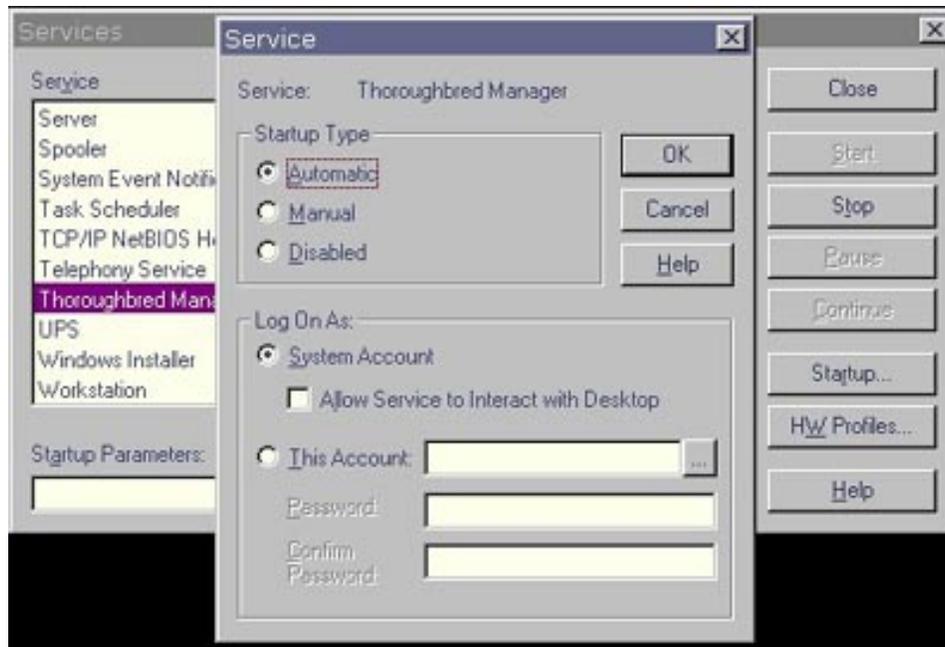
For more information please refer to Windows Help available on the Services dialog box.

Stopping and Starting the Thoroughbred Manager

The Thoroughbred Manager will start automatically when the computer is started. However at times it may be necessary to manually start or stop the service.

To stop the Thoroughbred Manager:

- From the Services dialog box locate and highlight **Thoroughbred Manager**
- Click the **Stop** button
- A confirmation prompt will be displayed, click **Yes** to stop the service or **No** to cancel the operation
- When the service has stopped the status column will be blank

To shut down the Thoroughbred Server Manager follow the same instructions described for the Thoroughbred Manager.

To start the Thoroughbred Manager:

- From the Services dialog box locate and highlight **Thoroughbred Manager**
- Click the **Start** button
- When the service has started the status column will read **Started**

Uninstalling the Thoroughbred Manager

The Thoroughbred Manager is not uninstalled as part of the TS Environment for Windows uninstall process. It is critical that the Thoroughbred Manager be uninstalled prior to uninstalling the TS Environment for Windows.

Before uninstalling the manager verify the service is not running. See Stopping and Starting the Thoroughbred Service Manager.

- From the Windows Start Button Select **RUN**

- Click on the **Browse** button and point to the folder where you installed the Basic. Typically this is **C:\Program Files\Tbsc**. Highlight the file named **tbjsmgr.exe** and press the **Open** button. Edit the Open option in the Run dialog appending the **-d** option. The run option is not quoted as is the path and file name. For example: **C:\Program Files\Tbsc\tbjsmgr.exe -d**
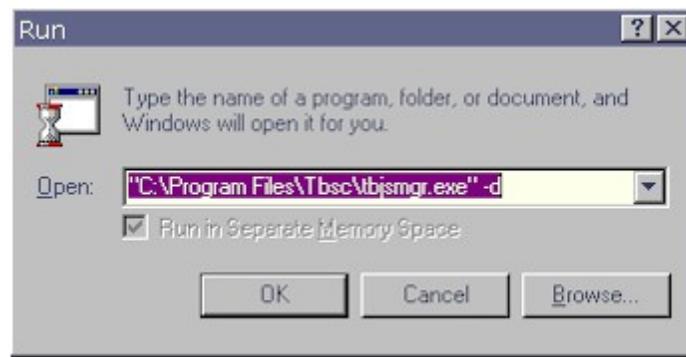
- From the Run dialog press **OK**

- When the Thoroughbred Manager is uninstalled the following prompt will display:

- Click the **OK** button

Managing Basic Tasks

The Thoroughbred Server Status utility allows you to view and kill tasks run by the Thoroughbred Manager. This utility is installed into your Basic directory, typically C:\Program Files\Tbsc. To start the Server Status utility, double click on **tbpview.exe**. Be sure **Show Local B.exe** is checked.
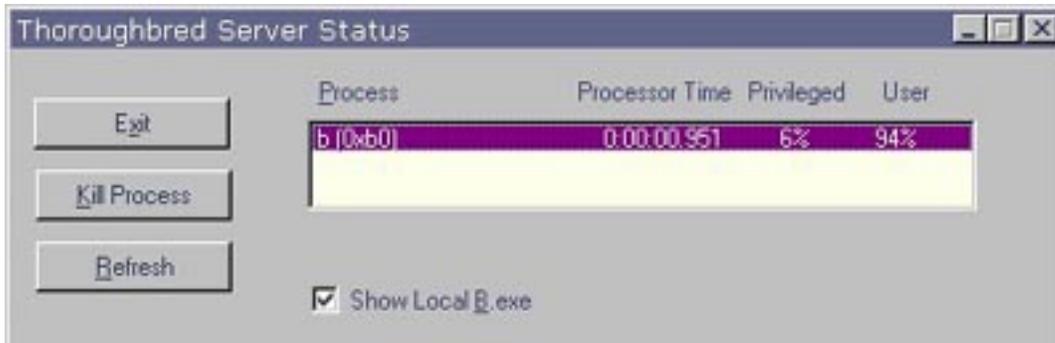
If for some reason you need to kill a task using tbpview, you may need to first correct the permissions.

Troubleshooting

Port Conflicts

There may be an occasion when the default telnet port 23 is not accessible. The Thoroughbred Manager can be started with an option to monitor an alternative port for telnet activity. Please refer to Setting the Port for details.

If you're using a port other than telnet, be sure your terminal emulation software supports it. Some terminal emulation products have the ability to use other ports rather than telnet (23). If you are using TbredComm™ you can start TbredComm™ with an option to connect on an alternate port. Please refer to Setting the Port for details.

Windows 2000

Our testing has uncovered some inconsistencies when used with Windows 2000, which differentiates between "telnet" and port 23. Because the new Thoroughbred Manager defaults to "telnet," Windows 2000 prevents users from connecting. We have successfully connected using other ports; starting the manager using -p7000 with TbredComm (as well as other terminal emulators) on port 7000 and using -p23. This avoids some Windows 2000 interception. We recommend anyone using Windows 2000 and the new Thoroughbred Manager do the same.

PATH Variable

The Thoroughbred Manager will execute the first b.exe found in the PATH variable. For this reason it is recommended that you only have one Basic installed. If it is necessary to have more than one Basic installed you must modify your PATH variable so that the appropriate b.exe is the first basic executable in your path. If it fails to make it the first, it will append it to the end. For information on modifying your PATH variable please refer to Window Help for "System Properties."

The following PATH variable will cause the Thoroughbred Manager to attempt to start an invalid version of Basic:

%SystemRoot%\system32;%SystemRoot%;C:\TSI\BIN;C:\Program Files\842TbredBasic;C:\Program Files\Tbsc

The following PATH variable will allow the Thoroughbred Manager to locate and start the correct Basic.

%SystemRoot%\system32;%SystemRoot%;C:\TSI\BIN;C:\Program Files\Tbsc;C:\Program Files\842TbredBasic

SYSTEM ARCHITECTURE

Thoroughbred Program Group

The software Setup will create a Thoroughbred Program Group. Two icons are created, one to execute the TS Environment and a second to allow editing of the IPL file. B.EXE will use IPLINPUT.TXT as the default IPL files.

Activation Process

The TS Environment for Windows requires an activation key. This process is identical to the activation process for TS Environment for UNIX. You will have 30 days to activate the TS Environment. During the initial startup, you can select the **Bypass** button to skip the activation process. If you do not activate the TS Environment within 30 days, you will operate in a restricted access mode.

To activate your installation, you will need to report the Serial Number and Installation Code to the Thoroughbred Activation Desk. You will receive an Activation Key. Enter the Activation Key and choose the **Authorize** button.

Restricted Access

A workstation in restricted access mode can still continue to execute an application. The Security Window, noting the unauthorized installation, will always be displayed. This window remains on the screen as long as Thoroughbred is active. You can move the location of this window to view your application, but you cannot close the window. To remove the Unauthorized Installation window, you will need to remove the Thoroughbred Basic security file. For example: C:\WINNT\Tbred85.bas and reinstall the TS Environment for Windows.

Menu Bar

The TS Environment for Windows includes a menu bar with five selections. While executing any Thoroughbred based application, you will have access to these five selections: Function Keys, File, Edit, Terminal, and Window.

Function Keys

This menu option allows the user to select function keys using a mouse. The Function Key Menu option is active for keyboard operation and, when selected, will be added to the input buffer.

File

The File menu option has three selections: Print Setup, Exit, and About Thoroughbred.

> **Print Setup** – If active (see Print Manager section in this guide), provides access to Windows Print Setup

E<u>x</u>it – if active (see Windows API section in this guide), allows the user to exit (**Ctrl-B** or **RELEASE**) back to the Windows Program Manager.

<u>A</u>bout Thoroughbred – provides workstation information including Version, User, and Serial Number.

<u>E</u>dit

This option enables the user to **Copy** marked text to the clipboard. Because some products require a break carrier other than "CR," you may have to switch to OEM Display format used by DOS applications when viewing the copied text with other products.

<u>T</u>erminal

This submenu is used to access options that support multiple font selection. The three items are <u>S</u>elect Font, <u>A</u>utosize, and <u>1</u>32 Column.

<u>S</u>elect Font – the user may select a font, style, and size using a Font Common Dialog. This font will be used for all subsequent screen displays.

<u>A</u>utosize – this option automatically calculates and resizes the Basic window after a new font has been selected. In addition, if the user resizes the Basic window by dragging one of the window's edges or corners, a new font size will be calculated to fit the screen. A check mark will be displayed next to the item when it is active.

<u>1</u>32 Column – this option will allow the Basic window to contain 132 columns. A check mark will be displayed next to the item when it is active. When 132 Columns mod is not active, the Basic window will contain 80 columns.

See **Font and Character Set** for additional details.

<u>W</u>indow

This option is reserved for future use.

Multiple Sessions

The TS Environment icon can be executed more than once, creating multiple sessions or tasks. The terminal id [FID(0)] for each session will be generated automatically using the TERMINAL file. This allows sequential id (T0, T1, T2, etc.) to be used. The number of Thoroughbred sessions or tasks on a single workstation is limited only by the Thoroughbred Basic Serial Number. The default is 3 sessions.

When executing multiple sessions of the TS Environment, the Window Menu title for the first task will be **Thoroughbred [S/C]**. All additional sessions will have a Window Menu title of **Thoroughbred [C]**.

When using the TS Environment for Windows with VIP/Gateway for Windows or any DDE conversation, please note the following.

- All TS Environment sessions can act as a client in a DDE conversation. For example one session may be poking data to a Microsoft Excel spreadsheet and a second session updating a Microsoft Word document.

- The session designated as Thoroughbred [S/C] can also act as a server in a DDE conversation. If your DDE application requires two-way communication, it can only interface with the Thoroughbred [S/C] session.

- See the VIP/Gateway for Windows Reference Manual for details on DDE Client/Server operations.

Window Task Control

The TS Environment provides two min/max buttons in the top right corner. TS Environment for Windows is Windows MDI compliant. To resize the entire Thoroughbred task window, select the top, minimize or maximize buttons.

Thoroughbred uses the TSICONST.INI file to store Basic's state prior to exiting. Subsequent Thoroughbred sessions will use these values for the Window size position, and font selection.

Font and Character Set

The Setup process will install the TBRED.FON file. This non-proportional font is similar to the Fixedsys font used by VIP/GWW to communicate to a UNIX host environment. The TBRED font is available in multiple sizes. For each of the four screen sizes (640x480, 800x600, 1024x768, and 1280x1024), there are font sizes for 80x25 character Full, Half Height, Half Width and Quarter Screens as well as a Full Screen at 132x25.

To return to the Full Screen Font size, select Terminal from the Menu Bar, turn Autosize on and then maximize the Basic Window.

The TBRED font uses the ISO 8859 symbol set standard, with the exception of the Thoroughbred Graphic Characters. The ISO 8859 symbol set standard does not define the characters between 80 and 9F. Using this font, the physical location for the Graphic Characters is 80 through 8A, though for compatibility with your existing applications, the Thoroughbred default Portable Graphic Character Base is C (characters CO through CA).

There are multiple data compatibility issues. If your data includes characters above 127, they may not be compatible with a UNIX application. Also, if you attempt to communicate via DDE with another Windows product, data containing characters between C0 and CA will not be compatible unless you change your Portable Graphic Character Base i.e., change to 8.

TS Environment for Windows uses a default base of C for the Portable Graphic Characters. If your language uses characters CO through CA, you will want to change your Portable Graphic Character base. When changing your character base, be sure to run the Dictionary-IV conversion utilities. The Dictionary-IV utility programs are 8ZUTO5 for Help Modules and 8ZUTO6 for Screens.

For the TBRED font to be able to draw graphic characters, the terminal mnemonics **BG** and **EG** (Begin/end Graphic Mode) had to be updated in TCONFIGW. For the TBRED font to be able to recognize 132 Columns, the terminal mnemonics **NS** and **WS** (Normal/Wide Screen0 had to be added to TCONFIGW. The updated value for these terminal mnemonics is as follows:

```
BG $1B4701      EG        $1B4700

NS 41B5B3F336C WS        $1B5B3F3368
```

When selecting 132 Columns or using the terminal mnemonics **NS** or **WS**, Basic clears the screen rather than trying to recalculate the current screen contents and font sizes. Applications using the **NS** and **WS** terminal mnemonics must also redraw the contents of the screen. This can often be accomplished with **WINDOW REFRESH**.

If your application requires a different symbol set or different ANSI values for various characters, you should select a compatible font. Different fonts will support different symbol sets. Care should be taken when selecting or recommending a font. To insure compatibility with other Window products or a UNIX application, you may want to use the same-shared font. When using a font other than TBRED, all graphic characters will come from the Microsoft Line Draw font.

Color

Two terminal tables are included in TCONFIGW with the TS Environment for Windows:

WINNTMON and WINNTCON

The default terminal table is WINNTCON. The WINNTCON terminal table uses the DOS color scheme. The WINTMON table uses the Microsoft Windows Color Settings for various video attributes. To maintain colors for this table, select Color Settings from the Windows Control Panel.

For example, the Dictionary-IV installation will display characters in normal video, reverse video foreground, and reverse video background. Those attributes will display using Color Settings from the Windows Control Panel.

TS Environment		Control Panel – Color Settings
SF foreground	uses	Window Text
SB background	uses	Disabled Text
BF reverse video foreground	uses reversed	Window Text
BR reverse video background	uses reversed	Disabled Text

FEATURES

Sharing Data between Environments

If TS Environment for Windows is installed on Windows 2000/NT/XP there are special installation instruction that can be viewed in our 8.6.0 Release Notes in the Helpdocs folder on the installation CD.

The TS Environment for Windows is capable of sharing data files between multiple Thoroughbred sessions on the same workstation as well as environments on other workstations. For file sharing to work properly, the TS Environment uses the TERMINAL file to assign unique identifications for each session. Executing multiple sessions will generate terminal identifications T0, T1, T2, etc. If environments from different workstations running TS Environment for Windows want to share files, each environment will require a unique Terminal ID.

All shared files, including TERMINAL and IPLINPUT.TXT, should be moved to the shared working directory. Your application files should also be installed into the shared working directory. Object libraries and the system dictionary may be copied to a shared directory or may be distributed to each workstation. An installation will have to weigh the benefits of performance versus the disk space overhead. Each workstation must modify the Properties of the Thoroughbred Icon in the Thoroughbred Program Group. The command line should specify the local directory that contains B.EXE. The working directory should specify the home directory, i.e. d:\tbsc, found on the server.

Each Workstation will have a unique Serial Number. Any application program or file that is serialized needs to reside locally on each workstation. For example, the VIP/GWW Host programs are locked with a serial number. These programs or object libraries must remain local to each workstation.

BTRIEVE Access

PRM BTRIEVE is supported in the Windows environment. This IPL file parameter enables Thoroughbred to create files in BTRIEVE format. This statement does not affect files that have already been saved in another format.

Data access can be improved dramatically by using BTRIEVE. The BTRIEVE Server must be configured properly. Thoroughbred requires that a Brequester is running on the workstation. The IPLINPUT.TXT file must have the parameter PRM BTRIEVE. This allows Thoroughbred to use the Brequester to send data to the BTRIEVE Server. The BTRIEVE.N>LM must be loaded on the BTRIEVE server as well as an appropriate communication driver (i.e. BSPXCOM.NLM).

To confirm that a data file is BTRIEVE, **OPEN** the file and test the first byte in the FID. BTRIEVE files will return a **B** in this byte.

READONLY Parameter

This IPL file parameter allows programs to READ data records that are currently EXTRACTed (locked) by another task (or the same task). This capability has been available for operating systems that support advisory locking. This capability requires a new locking scheme for DIRECT files. The new scheme is not compatible with previous releases. When sharing data files between multiple workstations, all workstations should be using TS Environment versions 8.40A and up regardless of the **PRM READONLY** feature being active. There is no change to the actual file format.

DDE

The TS Environment for Windows supports DDE. This is accomplished by either using Gateway for Windows (GWW) or new Thoroughbred Basic syntax.

DDE conversations are established using the file I/O subsystem. For detailed syntax and information, refer to the **OPEN** directive found in the Thoroughbred Basic Language Reference Volume II.

GWW

When using GWW, your interfaces built for UNIX host environments will execute with no program modifications.

Operating System Interface

Operating system interfacing is accomplished through Microsoft Windows, not DOS. Therefore SYSTEM instructions to the Windows environment may not have the same results as Thoroughbred Basic for DOS. Thoroughbred syntax designed to interface with the UNIX operating system such as XCALL and OPEN (ch, OPT="SHELL"…) is not supported. Access to the Windows system is accomplished using Windows API calls.

The SYSTEM command does include the following characteristics:

- SYSTEM by itself will execute the DOSPRMPT.PIF.

- SYSTEM followed by a string will attempt to RUN the string value. If it gets an error, it will then try **DOSPRMPT,PIF /C** *string-value*. Upon the conclusion of the process, control will be returned to your application.

- SYSTEM followed by a string that terminates with the character '&" will return control immediately to your application.

- Currently, the SYSTEM commands that fail do not return error codes.

- It is recommended that Window .PIF files be used to execute DOS programs. Within the .PIF file you can control display within a window, termination automatically closing the window, etc. Review the .PIF file settings in the Windows Program Manager for more details.

Window API

The TS Environment for Windows supports access to the Windows API. There are many books available that cover and explain the technological capabilities of the Windows API. It is recommended that you visit your local computer bookstore to acquire books on this topic.

For detailed syntax and information, refer to the API directive found in the Thoroughbred Basic Developer Guide.

Print Manager

Access to printer devices can be accomplished in either a raw or a spooled Print Manager mode.

Raw mode bypasses the Windows Print Manager and allows direct access to the device. This is the typical method used in your existing UNIX applications. It requires printer tables to be defined in Dictionary-IV that recognize unique escape sequences for unique printers.

The spooled Print Manager mode is the preferred Windows print access method. The Print Manager mode can run in either standard or pass-through mode. Both modes will spool all output to the Windows Print Manger. Standard mode uses a standard set of limited mnemonics that need to be defined in your system dictionary, while pass-through mode will use your existing Dictionary-IV printer tables.

To activate the Windows Print Manager, you need to set the spooler flag in IPLINPUT.TXT.

`DEV LP,4,,,,1,,LPT1`	Type 1 uses the existing Dictionary-IV Printer Tables. If you change printer types using the Printer Setup facility, you will have to reassign your printer table to the new type.
`DEV LP,4,,,,3,,LPT1`	Type 3 requires the creation of a standard Printer Table (see below). This table allows printing to any printer in the Windows Printer Setup facility without change.

Using Type 1 or 3 will send all LP output to the Windows Print Manager. Programs using escape sequences and mnemonics not recognized by the Print Manager will generate errors. When the print Manager is active, you will be able to access Printer Setup by clicking the File option from the Menu Bar.

Spooled printers will use the default font Courier New for text and Microsoft Line Draw for graphics. Thoroughbred Basic does not query the Windows Printer Drivers to determine supported fonts. If the font is not recognized, most printers will switch into graphics mode and print individual pixels.

To use a spooled printed (type 3); you will have to use the STNDRD Dictionary-IV printer table.

Mouse Controls

You can set your system to scroll and to enable mouse clicks by editing the Tsi.ini file located in your Windows folder.

To enable/disable scrolling edit the [BASIC] section of the Tsi.ini file.

window_hscroll=Y
Allows you to turn on or off horizontal scrolling of a window.

window_vscroll=Y
Allows you to turn on or off horizontal scrolling of a window.

For example:

```
[BASIC]
window_hscroll=Y
window_vscroll=Y
```

To enable mouse clicks to select Y/N and Control Keys edit the [MOUSE] section of the Tsi.ini file.

Yes/No Pattern
The Yes and No characters are identified by a starting, ending and separator character, for example (Y/N).

> (is the start character
>) is the end character
> / is the separator character

When the user clicks in an area encompassed by the starting and separator character or the separator and ending character, the text will be interpreted. If the text matches the yes/no pattern, the clicked character will be posted to the Basic INPUT statement. Only a single character is sent to INPUT, this is equivalent to an INPUT SIZ=1.

For example if you type "(Y/N)" in the Yes/No Pattern text box, clicking on the "Y" in (Y/N)? returns a Y. Clicking on the "N" (Y/N)? returns an N.

Control Keys
Control keys are identified by a starting and ending character, for example type **"<>"** in the Control Key text box. When the user clicks in an area encompassed by the start and end characters, the text will be interpreted. If the text contains a known control key code then that control key will be posted to the Basic INPUT statement.

Multiple Control Key values can be defined. Use a comma to separate entries. For example, type **"<>"**, **"()","{}"** in the Control Key text box.

For example if you type "<>" in the Control Key(s) text box, clicking on the "F" or the "4" in <F4> returns a CTL value of 4.

For example:

```
[MOUSE]
yesno=(*/*)?
controlkey=<>
```

CONFIGURING YOUR SYSTEM

This chapter describes terminal and memory configuration and open file table entries that you must set before running TS Environment for Windows.

Configure memory and OS parameters

Edit the IPL file used for TS Environment for Windows (normally IPLINPUT) and make the changes described below. The IPLINPUT file is a standard ASCII file that can be modified using any text editor that saves the file in ASCII format, such as **EDIT** in DOS. For more information on the IPLINPUT file, please refer to the Thoroughbred Basic Customization and Tuning Guide.

Change the PTN statement to set a minimum partition of 300000. The PTN statement should appear as follows:

```
PTN 1,300000
```

Open file table entries

The number of file table entries is set in the operating system as well as in the CNF statement of the TS Environment for Windows IPLINPUT file.

In most cases, it is recommended that you change the CNF statement to set a minimum of 40 for the open file table entries. The CNF statement should look like this:

```
CNF 1,6,1,40
```

Notes: In this statement, **6** specifies the number of DEV lines and **40** specifies the number of open file table entries.

The number specified in the CNF statement of the IPLINPUT file must be 3 less than the setting used by the operating system. TS Environment for Windows will not execute if this is not done.

To modify the number of file table entries in DOS see the **FILES**= parameter in the CONFIG.SYS file.

Sample IPLINPUT files

This section describes how to perform system administration functions such as adding directories or printers to TS Environment for Windows. For more information see the Basic Customization and Tuning Guide.

Adding Directories

This section describes how to make DOS directories accessible to TS Environment for Windows.

- If the directory does not exist, create it in DOS using the **MKDIR** command.

- Modify the IPLINPUT file using a text editor such as **EDIT**.

```
CNF 1,6,1,40
```
Increase the number of devices in the **CNF** line. If you add one **DEV** line, change the **6** to a **7**.

```
PTN 1, 300000
```

```
DEV D0,1,,,,,,IDL4
```
In the following three **DEV** lines, **D0**, **D1**, and **D9** specify the number of each available directory.

```
DEV D1,1,,,,,,WORK
```
Insert a DEV line after this one. The format is **DEV D***n***,1,,,,,,[***d:***][***path***].**
Example: **DEV D2,1,,,,,,C:\FILES**

```
DEV D9,1,,,,1,,
```

```
DEV LP,4,,,,,,LPT1
```

```
DEV T0,5,,,,,,CON
```
In this **DEV** line, **5** specifies Thoroughbred Basic Windows (TCONFIGW) and **7** specifies that Thoroughbred Basic Windows will not be used (TCONFIG8).

```
DEV T1,7,,,,,,TTY1
```

```
IPL 1,2,T0,ID
```

```
END
```

Save and exit to DOS, then re-execute TS Environment for Windows.

Adding Printers

This section describes how to make DOS system printers accessible to TS Environment for Windows.

• Install and set up printers.

• Modify the IPLINPUT file using a text editor such as EDIT.

```
CNF 1,6,1,40
```
Increase the number of devices in the **CNF** line. If you add one **DEV** line, change the **6** to a **7**.

```
PTN 1, 300000
```

```
DEV D0,1,,,,,,IDL4
```

```
DEV D1,1,,,,,,WORK
```

```
DEV D9,1,,,,1,,
```

```
DEV LP,4,,,,,,LPT1
```
The two-character printer-ID must be either **LP**, as it is here, or **P1** through **P***x*, where *x* is any alphanumeric character.

Insert a DEV line after this one.
Example: **DEV P1,4,,,,,,LPT2**

```
DEV T0,5,,,,,,CON

DEV T1,7,,,,,,TTY1

IPL 1,2,T0,ID

END
```

Save and exit to DOS, then re-execute TS Environment for Windows.

Sample of a Modified IPLINPUT File

Using the previously defined IPLINPUT file, this section shows an example of a modified file.

- Modify the IPLINPUT file using a text editor such as EDIT.

`CNF 1,9,1,40`	The total number of **DEV** lines is **9**.
`PTN 1, 300000`	
`DEV D0,1,,,,,,IDL4`	
`DEV D1,1,,,,,,WORK`	
`DEV D2,1,,,,,,TEST`	This directory specification has been added.
`DEV D3,1,,,,,,C:\DATA\FILES`	This directory specification has been added.
`DEV D9,1,,,,1,,`	
`DEV LP,4,,,,,,LPT1`	This printer specification has been added.
`DEV P1,4,,,,,,LPT2`	
`DEV T0,5,,,,,,CON`	
`DEV T1,7,,,,,,TTY1`	
`IPL 1,2,T0,ID`	
`END`	

Save and exit to DOS, then re-execute TS Environment for Windows.