THOROUGHBRED®
SOFTWARE INTERNATIONAL, INC.

TS ENVIRONMENT™ FOR WINDOWS

Installation and Upgrade Guide

Version 8.9.1

Thoroughbred Software International, Inc.

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INTRODUCTION

TS Environment for Windows (Telnet Basic) is an integral part of the Thoroughbred Software network solution. Dictionary-IV, OPENworkshop and Basic can be made available to workstations on the network via a telnet connection. This simplifies the installation and configuration by eliminating shared folders and mapped drives.

TS Environment for Windows can also be run as a single user installation when installed on a single workstation. When run locally a telnet connection is not required.

BEFORE INSTALLING THIS PRODUCT:
Please refer to the latest Release Notes found on the Thoroughbred website under Documentation and then Environment Release Notes:

https://www.thoroughbredsoftware.com/b_downloads.php

Package Contents

You should have received the following:

- An Order Confirmation email containing a License Assignment Card and a link for downloading the products in your order.

Download Thoroughbred Products

All Thoroughbred products are available for download via the Thoroughbred Download Center.

To download your product(s):

- Click on the link in the Order Confirmation email to open the Downloads page.
- On the Downloads page:
    - Enter your Customer ID and Order Number from the Order Confirmation email.
    - Enter your name and email address.
    - Click on the Lookup Order button to open the Verification page.
- On the Verification page:
    - Click on the product to download.
    - Click on the button to accept the Thoroughbred License Agreement.
    - Click on the Download button.
    - Repeat these steps until all products from your order are downloaded.

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- Once all products from your order are downloaded, copy them to the system where you will be installing your product(s).

Requirements

The TS Environment for Windows is designed for developers who want to take full advantage of the Microsoft Windows environment. The TS Environment for Windows supports:

- Windows 10
- Windows 11
- Windows Server 2016
- Windows Server 2019
- Windows Server 2022
- Windows Server 2025

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SYSTEM ARCHITECTURE

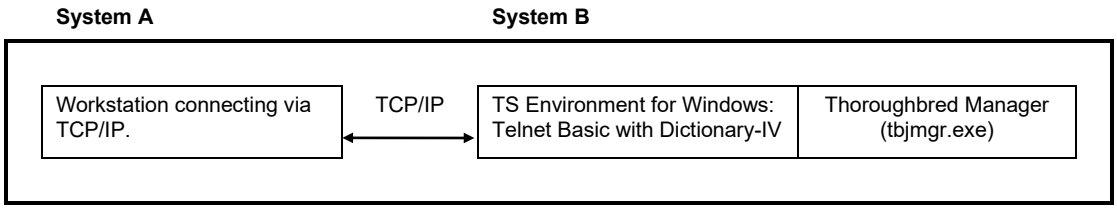
TS Environment for Windows Components

The TS Environment for Windows consists of two components:

- Thoroughbred Environment: Telnet Basic with Dictionary-IV
- Thoroughbred Manager (tbjmgr.exe) Service

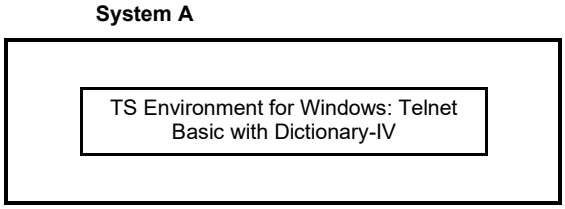
The Thoroughbred Manager will listen for TCP/IP connections on port 23 (default). When a TCP/IP connection is made, the Thoroughbred Manager will start a Basic session. For more information please see *Starting Basic as a Telnet Session* and *Administrating the Thoroughbred Manager* sections of this manual.

Telnet Session:



For more information, please see *Features*, *Starting Basic as a Telnet Session*, and *Administrating the Thoroughbred Manager* sections of this manual.

Local Basic (no telnet connection):



For more information, please see *Features* and *Starting a Local Basic* sections of this manual.

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INSTALLATION

NOTE: All Thoroughbred Windows based products prior to Version 8.8.0 must first be uninstalled and then the 8.9.1 release installed. **BEFORE** continuing with this installation, please see the *Uninstalling TS Environment for Windows* section below for instructions to properly prepare your system for 8.9.1.

Backup Existing Program and Data File Before Installing

- Use site procedures to back up your application and data files.
- Use site procedures to back up the IPL, IPLINPUT, and TERMINAL files from the Thoroughbred Basic directory. From the IDL4 directory, back up the TCONFIGW and TCONFIG8 files.

Uninstalling TS Environment for Windows – 8.5.x through 8.6.0

These instructions assume you previously installed using the default folder C:\Program Files (x86)\Tbsc. The folder names may vary slightly depending upon which products you have installed and where the products were originally installed.

1. **Login** using an **Administrator** account.
2. **Backup** your application data and programs.
3. From the Administrative tools select **Services** and stop the Thoroughbred Manager (tbjmgr.exe).
4. Uninstall the Thoroughbred Manager by running tbjsmgr.exe with the –d argument.

   From the Windows **Start** menu Select **RUN.**

   Click on the **Browse** button and point to the folder where you installed the Basic. Typically this is **C:\Program Files (x86)\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. For example: **C:\Program Files (x86)\Tbsc\tbjsmgr.exe –d**

   From the Run dialog press **OK**.

   If the service is deleted a message box will display saying: Service 'tbjmgr' successfully deleted! When the Thoroughbred Manager is uninstalled click the **OK** button and continue with the uninstall procedure.

   If the service could not be deleted, a message box will display saying: Unable to delete service 'tbjmgr'!. If the delete fails do not continue with the uninstall procedure, contact Thoroughbred Support for assistance.
5. From the Control Panel select the applet to add and remove applications. Remove TS Environment for Windows.

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6. Files not installed by the setup or files that have changed since the setup was run are not removed. If you have already uninstalled other Thoroughbred products some the following files may no longer exist. Erase the following folders and files:
   C:\Program Files (x86)\Tbsc
   C:\Windows\Tsi.ini
   C:\Windows\tsiconst.ini
   C:\Windows\TBRED8?.BAS

7. We **recommend running a reliable registry cleaner** at this point.

8. **Reboot** your system.

The system is now ready for the 8.9.1 TS Environment for Windows installation. When that is complete you can recover your application data and programs. Please be sure to review the *Installed Directories and Files* section of this manual before you recover your application files.

Uninstalling TS Environment for Windows – 8.7.x

These instructions assume you previously installed using the default folder C:\Program Files (x86)\Tbsc and C:\Program Data\Thoroughbred Software. The folder names may vary slightly depending upon which products you have installed and where the products were originally installed.

9. **Login** using an **Administrator** account.

10. **Backup** your application data and programs.

11. From the Administrative tools select **Services** and stop the Thoroughbred Manager (tbjmgr.exe).

12. Uninstall the Thoroughbred Manager by running tbjsmgr.exe with the –d argument.

    From the Windows **Start** menu Select **RUN.**

    Click on the **Browse** button and point to the folder where you installed the Basic. Typically this is **C:\Program Files (x86)\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. For example: **C:\Program Files (x86)\Tbsc\tbjsmgr.exe –d**

    From the Run dialog press **OK**.

    If the service is deleted a message box will display saying: Service 'tbjmgr' successfully deleted! When the Thoroughbred Manager is uninstalled click the **OK** button and continue with the uninstall procedure.

    If the service could not be deleted, a message box will display saying: Unable to delete service 'tbjmgr'!. If the delete fails do not continue with the uninstall procedure, contact Thoroughbred Support for assistance.

13. From the Control Panel select the applet to add and remove applications. Remove TS Environment for Windows.

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Files not installed by the setup or files that have changed since the setup was run are not removed. If you have already uninstalled other Thoroughbred products some the following folders and files may no longer exist. Erase the following folders or files:

Windows desktop workstation or **Windows Server class machine**
C:\Program Files (x86)\Tbsc
C:\Program Data\Thoroughbred Software\Tsi.ini
C:\Program Data\Thoroughbred Software\TBManager.ini
C:\Program Data\Thoroughbred Software\TBSCSYS.ini
C:\Program Data\Thoroughbred Software\TBRED8?.BAS
C:\ProgramData\Thoroughbred Software\Thoroughbred Environment
C:\ProgramData\Thoroughbred Software\Tbsc

14. We **recommend running a reliable registry cleaner** at this point.

15. **Reboot** your system.

The system is now ready for the 8.9.1 TS Environment for Windows installation. When that is complete you can recover your application data and programs. Please review the *Installed Directories and Files* section of this manual before you recover your application files.

Installed Directories and Files

NOTE: Starting with 8.7.0 the location of some TS Environment for Windows directories and files have changed. Unlike previous releases Thoroughbred files should not be moved as this will render various ini file entries and registry keys invalid.

Windows desktop workstation or Windows Server class machine

The installs follow Microsoft best practice rules. Some of the rules are: all executables must be installed in Program Files (x86), files that require read write access cannot be installed in Program Files (x86) or Window system folders. This required a new directory structure.

Application Data folder: This is where the Dictionary-IV and OPENworkshop environment will be installed. This includes IPLINPUT.TXT, SERVER.MAP, TERM.MAP, TERMINAL and the IDL4, UTILS, and WORK folders. All DEV lines defined in the IPLINPUT.TXT file are relative to the application data folder. The setup will install the Dictionary-IV merge files and all other merge files activated by the module code in the IDL4 folder. During the install process you will have the option to override the default folder C:\ProgramData\Thoroughbred Software\Tbsc. The application data folder requires read, write and modify permissions for all users.

Basic Executable folder: This is where the Network Basic with DataServer executables and dlls will be installed. During the install process you will have the option to override the default folder, we ***STRONGLY*** recommend selecting the default folder C:\Program Files (x86)\Tbsc. The Basic executable folder should limit permissions to read for all users.

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Thoroughbred system files will always be installed in common folder C:\ProgramData\Thoroughbred Software\Tbsc , there is no override option. This includes TSI.ini, Tsiconst.ini, and TBManager.ini and other Thoroughbred system files. The common folder requires read, write, and modify permissions for all users.

Installing the Files to Your Hard Drive

All installations and activations must be run with Administrator privileges. Once fully installed and activated the products can be run using standard user accounts.

If you are installing on Windows Server with Terminal Services in Execute Mode switch to Install Mode prior to running setup.exe.

- To set Install Mode, from a command line enter **chgusr /INSTALL**.
- After completing the install, switch back to Execute Mode. From a command line enter **chgusr /EXECUTE**.
- At any time, the current mode can be verified with chgusr /QUERY.

The chgusr command is a Terminal Services tool. For more information regarding installing applications with Terminal Services please refer to Microsoft documentation.

1. Login using an Administrator account.
2. We recommend closing all unnecessary applications before running the installation.
3. **Run setup.exe** located in the **Tsisetup** folder. This setup.exe will install TS Environment for Windows on all window platforms.
4. The **InstallShield Wizard** will start the installation and guide you through the rest of the process.

Microsoft Prerequisites

The installation will first check the target workstation to determine if the required Microsoft prerequisites are present. If they are not, you will be prompted to install them. You must install the prerequisites if the install dialog prompts you to do so. When that installation is complete, the TS Environment for Windows installation will continue automatically

User Information - All Platforms

Enter your Name and Company.

Thoroughbred Module Code - All Platforms

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.

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Choose Destination Location – Windows desktop workstation or Windows Server class machine

The first destination dialog will allow you to choose the Application Data folder. This is where the Dictionary-IV and OPENworkshop environment will be installed. Press **Next** to install into the default folder C:\ProgramData\Thoroughbred Software\Tbsc or press **Browse** to select an alternate folder. Example Application Data folders are:

C:\ProgramData\Thoroughbred Software\Tbsc
E:\MyApps\Tbsc

The second destination dialog will allow you to choose the Basic Executables folder. This is where the Basic executables and dlls will be installed. Press **Next** to install into the default folder. We ***STRONGLY*** recommend installing in the default folder.

Serial Number - All Platforms

The installation procedure will display a dialog box to collect the serial number.

Enter the Serial Number provided. If the operating system noted on the media does not match the target operating system, the serial number will not be validated. When internet access is available, you will have an option for Internet Activation. Press **Continue** to automatically activate over the internet. Automatic activation is easier and faster with no web forms to fill out and no delay waiting for an email reply. Activation is an immediate process using this method. Press **Skip** to activate manually; see the *Activation* section of this manual for details.

A serial number must be entered before TS Environment for Windows can be run. The serial number can be entered at any time by manually executing CollectSSN.exe:

- Locate **CollectSSN.exe** in the <*install-path*>\directory. For example C:\Program Files (x86)\Tbsc
- Double click to execute it and enter the serial number from the License Assignment Card in your Order Confirmation email.

If a serial number is not entered, then TS Environment for Windows will not run and an "Unauthorized Installation" message will be displayed.

Setup Complete - All Platforms

Click **Finish** and then **reboot** the system.

The installation will also install the Thoroughbred Manager as a service allowing terminal emulation products such as TbredComm to connect to a Basic using Telnet. The Thoroughbred Manager will start automatically when the system is restarted.

For more information see *Administrating the Thoroughbred Manager* and *Starting Basic as a Telnet Session* sections of this manual.

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Merge the Files

From the **Start** menu select **All Programs-->Thoroughbred Software-->TS Environment for Windows**.

The first time you run Basic, the files will merge. See the OPENworkshop/Dictionary-IV Installation Guide.

NOTE: TS Environment for Windows can only be run from a short cut with a target value pointing to the Basic executables and a start in value pointing to the application data directory. For more information, please see the *Configuring Your System* section of this manual.

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ACTIVATION

The TS Environment for Windows will be activated automatically by the install process when internet access is available.

Automatic activation is easier and faster with no web forms to fill out and no delay waiting for an email reply. Activation is an immediate process using this method.

If you have not activated automatically over the internet, you will have 30 days to activate the TS Environment manually.

To manually activate, request an activation key from our Activation page at http://apps.tbred.com/activate/. You will be required to enter the TbredComm Serial Number and Installation Code. An Activation Key will be sent to you immediately by e-mail.

If you are unable to access the Website, call Thoroughbred Software at 1-800-524-0430 and ask for Activation.

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CONFIGURING YOUR SYSTEM

Creating Desktop Shortcuts

Desktop shortcuts should be created using the Windows Shortcut Wizard.

Right mouse click on your desktop and select **New**, then select **Shortcut**.

The Target value must point to where the Basic executable is installed.

- On all platforms the default is C:\Program Files (x86)\Tbsc.

The Start In value must point to where Dictionary-IV/OPENworkshop is installed.

- On Windows desktop workstations or Windows Server class machines the default is C:\ProgramData\Thoroughbred Software\Tbsc.

Configure Memory and OS Parameters

Edit the IPL file used for TS Environment for Windows (normally IPLINPUT.TXT) and make the changes described below. The IPLINPUT file is a standard text file that can be modified using notepad.exe or any windows text editor. 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.

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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 Microsoft Windows directories accessible to TS Environment for Windows.

- If the directory does not exist, create it in Microsoft Windows using the MKDIR command.
- Modify the IPLINPUT file using a text editor such as EDIT.

```
CNF 1,6,1,40
PTN 1, 300000
DEV D0,1,,,,,,IDL4
DEV D1,1,,,,,,WORK
DEV D9,1,,,,1,,
DEV LP,4,,,,,,LPT1
DEV T0,5,,,,,,CON
DEV T1,7,,,,,,TTY1
IPL 1,2,T0,ID
END
```

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

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

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

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

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

Adding Printers

This section describes how to make Microsoft Windows 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
PTN 1, 300000
DEV D0,1,,,,,,IDL4
DEV D1,1,,,,,,WORK
DEV D9,1,,,,1,,
```

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

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

                      Insert a DEV line after this one.
DEV RS,4,,,,,NULL     Example DEV line for TS ReportServer
DEV RC,4,,,,,NULL     Example DEV line for Report-IV to PDF
DEV T0,5,,,,,CON
DEV T1,7,,,,,TTY1
IPL 1,2,T0,ID
END
```

Save and exit, 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 RS,4,,,,,NULL
DEV RC,4,,,,,NULL
DEV T0,5,,,,,CON
DEV T1,7,,,,,TTY1
IPL 1,2,T0,ID
END
```


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RUN TS ENVIRONMENT FOR WINDOWS

Starting a Local Basic Session

From the **Start** menu select **All Programs-->Thoroughbred Software-->TS Environment for Windows**.

From your Desktop, click on a custom shortcut. For more information on creating shortcuts see the *Creating Desktop Shortcuts* section of this manual.

Starting Basic as a Telnet Session

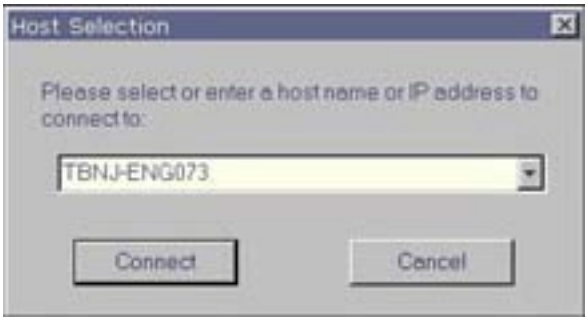
By default, the Thoroughbred Manager will listen on port 23 for telnet-like connections. If you have multiple Basics loaded, it will execute the first b.exe and its iplinput.txt found in your PATH variable. For more information see PATH Variable.

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

TbredComm is Thoroughbred's terminal emulator (telnet/ssh) designed specifically for the TS Environment for Windows. TbredComm may be purchased separately. For more information, please contact your sales representative.

When using TbredComm AutoLogons, check the Windows O/S option to populate INF(3,2) and INF(5,2) with the Domain User Name to provides a unique account name for each Basic session. For more information on AutoLogons please refer to the WorkStation Manager and TbredComm manuals.

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



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ADMINISTRATING THE THOROUGHBRED MANAGER

The Thoroughbred Manager is administered using the Services dialog box.

- From the **Start** menu select **Administrative Tools**-->**Services**
- The Services dialog box will appear
- Locate and highlight **Thoroughbred Manager**

Setting the Port

The Thoroughbred Manager by default uses the telnet port. This is typically port 23.

To change the port:

- From the Services dialog box locate and highlight **Thoroughbred Manager**
- The Services dialog box will appear
- Locate and highlight **Thoroughbred Manager**

The Thoroughbred Manager can listen on another port by adding the port number to startup parameters. From the Start menu select **Administrative Tools-->Services** and open the Thoroughbred Manager Properties. In the "Path to executable" box add the port number.

For example, if you want to listen on port 7000 add **-P7000**.

C:\Program Files (x86)\TSI\BIN\Tbredcom.exe -P7000

Note there is a space preceding the **-P**, but no space between **-P** and the *port-number*.

Starting the Manager as a Specific User

- 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.

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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 **Stop**
- 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:

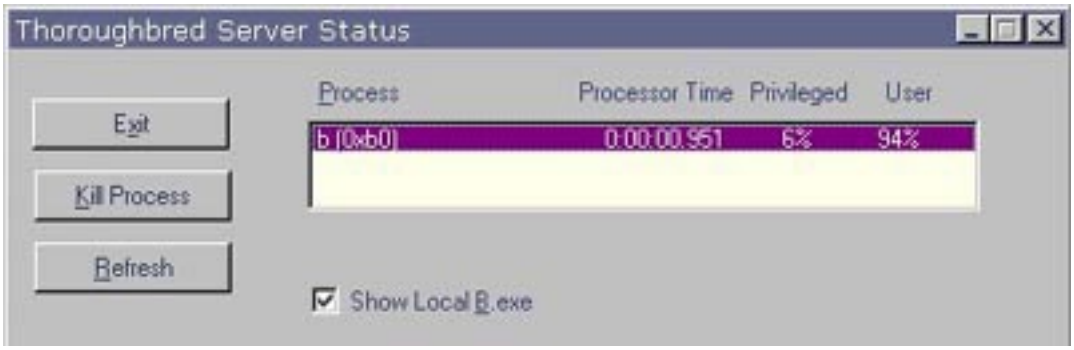
- From the Services dialog box locate and highlight **Thoroughbred Manager**
- Click **Start**
- When the service has started the status column will read **Started**

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THOROUGHBRED SERVER STATUS UTILITY

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 (x86)\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.

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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 are 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.

TS Environment for Windows does not use Windows telnet service. If the Windows telnet service is running, shut it down or start the Thoroughbred Manager on a port other than 23.

PATH Variable

The Thoroughbred Manager will execute the first b.exe found in the PATH variable. Only one Basic per workstation should be installed.

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

```
%SystemRoot%\system32;%SystemRoot%;C:\Program Files
(x86)\TSI\BIN;C:\Program Files (x86)\Tbsc
```


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FEATURES

Unless otherwise noted, the features documented below only apply to local Basic sessions. If you are connecting via telnet using TbredComm, please refer to the TbredComm and WorkStation Manager manuals for information on features.

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

Exit – if active (see *Windows API* section in this guide), allows the user to exit (**Ctrl-B** or **RELEASE**) back to the Windows Program Manager.

About Thoroughbred – provides workstation information including Version, User, and Serial Number.

Edit

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 Microsoft Windows applications when viewing the copied text with other products.

Terminal

This submenu is used to access options that support multiple font selection. The three items are Select Font, Autosize, and 132 Column.

Select 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.

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Autosize – 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.

132 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 mode is not active, the Basic window will contain 80 columns.

See the *Font and Character Set* section of this manual for additional details.

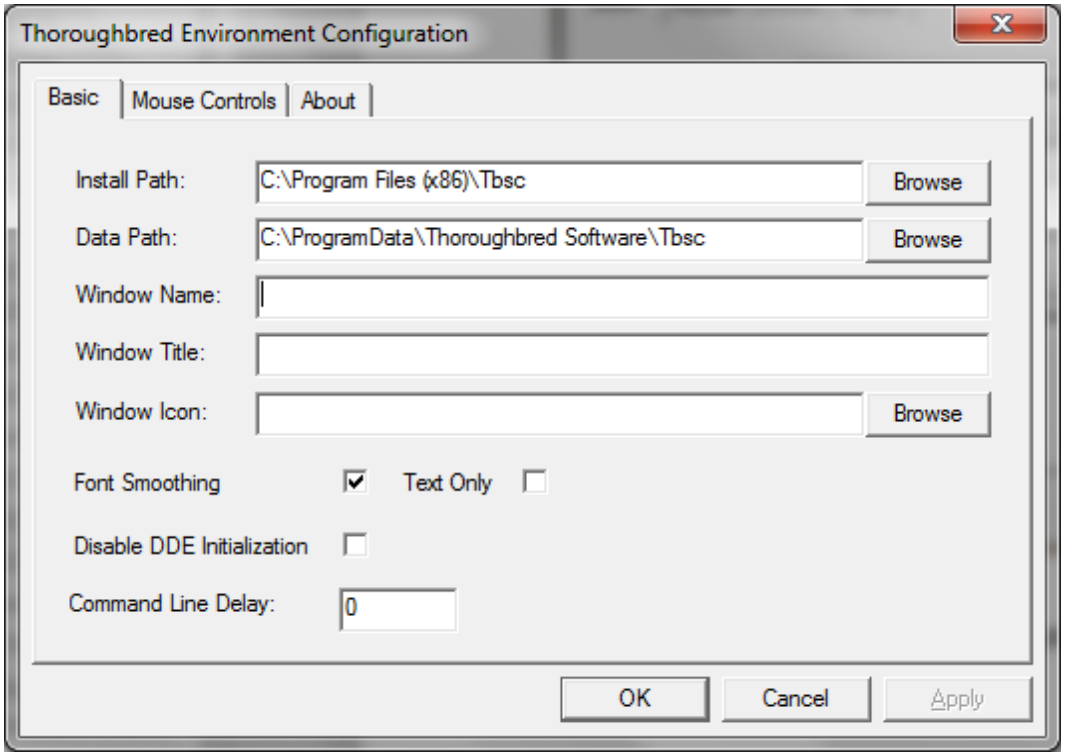
Window

This option is reserved for future use.

Thoroughbred Environment Configuration

Additional options are available through the Thoroughbred Environment Configuration by executing C:\Program Files (x86)\Tbsc\TBConfig.exe.

Basic Tab



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Install Path
This value should not be modified. Attempting to move the install location of Basic can cause unexpected results.

Data Path
This value should not be modified. Attempting to move the data path location for Basic can cause unexpected results.

Window Name
Set this to change the name that appears in the main Basic window.

Window Title
Set this to change the title that appears in the main Basic window.

Window Icon
Set this to change the icon that appears in the main Basic window.

Font Smoothing
Check this to enable ClearType. ClearType is a software technology developed by Microsoft to improve the display of fonts on LCD monitors. ClearType is enabled by default.

Text Only
Check this to disable ClearType for graphics characters, but leave it enabled for text.

Disable DDE Initialization
Check this to disable DDE initialization during Basic startup.

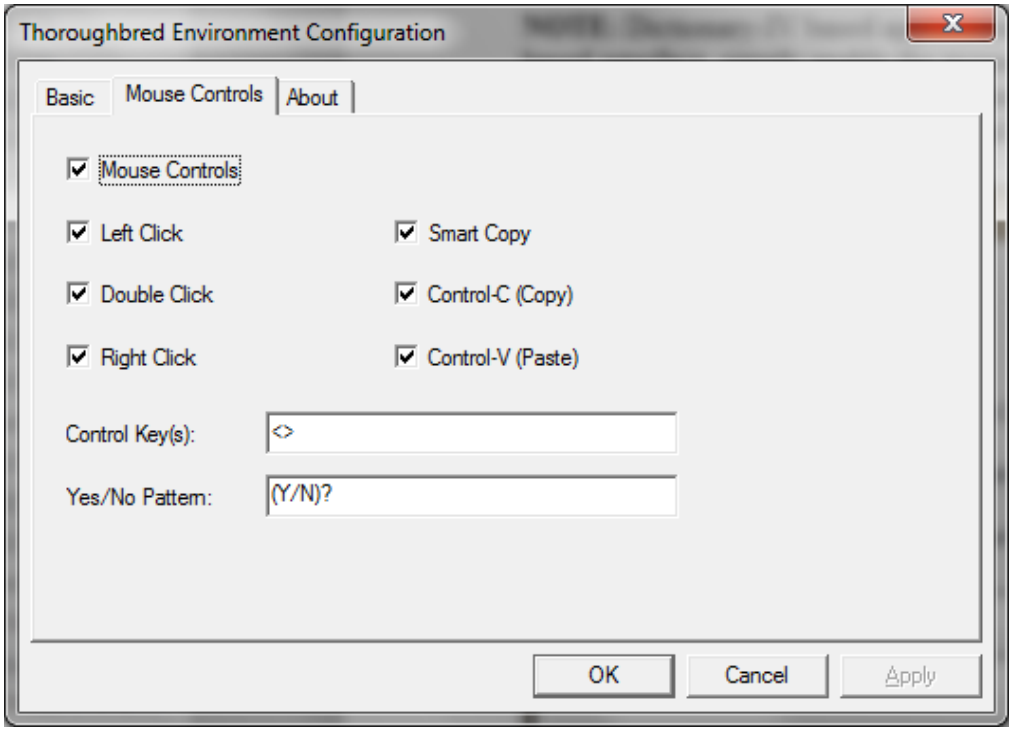
Command Line Delay
Enter the number of milliseconds for the Telnet Basic to wait at startup for the command line arguments from a remote TbredComm. The default value is 0 milliseconds.

Mouse Controls Tab

Click on the Mouse Controls tab to enable mouse events in Basic.

NOTE: Dictionary-IV based applications are fully mouse aware. For a mouse aware character-based interface, simply enable the mouse. 3GL applications **require** some programming to capture mouse events. For more information, please see the *How to Use a Mouse* section of the Thoroughbred Basic Customization and Tuning Guide – Devices.

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Mouse Controls
Check to enable the mouse.

Left Click
Check to enabled left click.

Double Click
Check to enable double click.

Right Click
Check to enable right click.

Smart Copy
Check to enable smart copy. This option determines how to highlight multiple lines of text. When smart copy is disabled, the selection of multiple lines of text will wrap around the end of each line. When smart copy is enabled, the selection of multiple lines of text will not wrap around the end of each line, allowing the selection of a column.

Control-C (Copy)
Check to enable the ability to copy text using the Ctrl+C keys.

Control-V (Paste)
Check to enable the ability to paste text using the Ctrl+V keys.

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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=<>
```

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.

Multiple Sessions

The TS Environment can be executed more than once, creating multiple local Basic sessions and multiple telnet sessions. 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 is limited only by the Thoroughbred Basic Serial Number. The default is 3 sessions.

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

When using a local session 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.

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- 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 Tbred font is not supported. TS Environment for Windows now use the DejaVu mono font as a default. This installation will also install the DejaVu font family along with a copy of its license agreement. The font is an open source project and has become the standard for many versions of Linux including recent releases of Red Hat Fedora, Ubuntu and SuSE. For more information, see http://dejavu.sourceforge.net/wiki/index.php/Main_Page.

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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 Microsoft Windows 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

Sharing Data between Environments

The TS Environment for Windows (local and telnet) is capable of sharing data files between multiple Thoroughbred sessions. 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.

BTRIEVE Access

PRM BTRIEVE is supported in the Windows environment (local and telnet). 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.

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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, (local and telnet) 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 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. 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 CMD.EXE.
- 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.

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.

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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.

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