

TS Network Basic™

Installation Guide



Version 8.6.0

285 Davidson Ave. • Ste. 302 • Somerset, NJ 08873
Telephone: 732-560-1377 • Outside NJ 800-524-0430
Fax: 732-560-1594

Internet address: <http://www.tbred.com>

Published by:
Thoroughbred Software International, Inc.
285 Davidson Ave., Suite 302
Somerset, New Jersey 08873

Copyright © 2007 by Thoroughbred Software International, Inc.

All rights reserved. No part of the contents of this document
may be reproduced or transmitted in any form or by any means
without the written permission of the publisher.

Document Number: TN8.6.0I101

The Thoroughbred logo, Swash logo, and Solution-IV Accounting logo, THOROUGHbred, IDOL, OPEN WORKSHOP, and VIP VISUAL IMAGE PRESENTATION are registered trademarks of Thoroughbred Software International, Inc.

Thoroughbred Basic, Thoroughbred Environment, OPENworkshop, IDOL-IV, Inquire-IV, Dictionary-IV, Script-IV, Report-IV, Query-IV, Source-IV, TS Network DataServer, TS ODBC DataServer, TS ODBC R/W DataServer, TS ORACLE DataServer, VIP (Visual Image Presentation), VIP for Dictionary-IV, VIP, GWW, Gateway for Windows™, TS ChartServer, TS ReportServer, TS WebServer, T-WEB, Thoroughbred OnDemand, TbredComm, WorkStation Manager, Solution-IV, Solution-IV Reprographics, TS/Xpress, and DataSafeGuard are trademarks of Thoroughbred Software International, Inc.

MS-DOS, Xenix, Windows, Microsoft Windows 2000, NT, and XP, Windows 2003 Server and MS SQL Server are trademarks of Microsoft Corp. IBM, IBM PC, OS/2, PS/2, and PC-DOS are trademarks of International Business Machines Corp.

DEC, OPEN VMS, and ULTRIX are trademarks of Digital Equipment Corp.

UNIX is a trademark licensed exclusively through X/Open Company

LTD.Novell is a registered trademark of Novell, Inc.

Oracle is a registered trademark of Oracle Systems Corporation

InstallShield is a registered trademark of Stirling Technologies, Inc.

Other names, products and services mentioned are the trademarks or registered trademarks of their respective vendors or organizations.

INTRODUCTION

TS Network Basic is an integral part of the Thoroughbred Software network solution. With a Thoroughbred Environment 8.4.1+, server data can be made available across platforms for uses in Dictionary-IV file maintenance, Report-IV, Query-IV, Script-IV, and Basic applications.

With TS Network DataServer software:

- Applications can now be configured to access a Network DataServer.
- New or existing applications can access and share data across a network.

When you access a file on another computer there is a large amount of network communication associated with accessing keys and locking records. This network traffic is in addition to the communication necessary to transfer the data.

Current file sharing capabilities with NFS, Netware, and Microsoft Network provide low level access to files on other systems. They do not, provide acceptable levels of performance or insure data integrity.

TS Network DataServer allows much of the logic required for distributed file I/O to reside on the system that contains the data. This process minimizes network exchanges and provides improved performance.

This guide first describes the Client side of TS Network DataServer, which is provided with every Thoroughbred Environment installation. It then provides specific information for Thoroughbred servers.

Requirements

To run TS Network DataServer your system must meet the following requirements:

- Windows 2000/NT/XP.

Once the installation is complete, server access is enabled by the addition of a number of configuration items. Refer to the sections that follow for instructions about creating or modifying the SERVER.MAP and IPLINPUT file, TERM.MAP file, and executing the Server startup program.

TS Network Basic with DataServer Components

The TS Network Basic for consists of three components:

- A Client enabled Thoroughbred Environment,
- A Startup Program (tsmgr), and
- A Server Process (tsserv) for each connection.

Client Enabled Thoroughbred Environment

The client side is enabled in a standard Thoroughbred Environment. When configured for data server access, it detects requests for data that reside on a server. When this event occurs, it sends the I/O request to the server for processing. The server responds with the resulting set and processing continues.

Startup Program (tsmgr)

The Startup Program (tsmgr) creates server processes for clients as needed. When the Startup Program detects a client attempting to connect, it tries to create a Server Process for the client. If a server process is created successfully, they can perform client/server communications.

A server system must have the Startup Program running before clients attempt to connect to it.
--

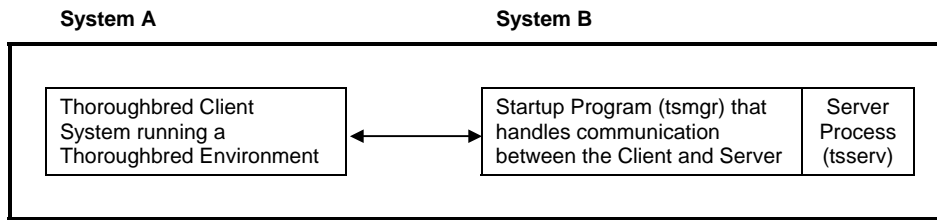
Server Process (tsserv)

The Server Process (tsserv) is triggered by requests from the client. Once a request is received, it is processed and the results returned to the client.

System Architecture

The following diagram describes the configuration of components for the Thoroughbred Client.

Client on System A and Server on System B.



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

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.

Begin the Windows Host Installation

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

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\Tbisc. 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

Begin the Windows Client Installation

Map the Client to the Host

The Host installation will create an Install folder on the server containing the installation files required for the Client installation. For example, if you installed Basic in C:\Program Files\Tbisc, you will now have a C:\Program Files\Tbisc\Install folder.

On the client, create a mapped drive to the server connecting to the directory where Basic was installed on the server. For example: H:\Program Files\Tbisc.

Install Client

On the client, open the **Install folder** residing on the server. For example C:\Program Files\Tbisc\Install. Double click on **Setup.exe** to start the installation for the client. InstallShield will put up a dialog box that contains a shortcut to the Basic on the server. Select **Ok** or edit the default shortcut.

CLIENT ENVIRONMENT

To set up TS Network DataServer software you must configure network communications and server access for the client.

The following files must be created or modified:

- SERVER.MAP
- IPLINPUT
- TERM.MAP

SERVER.MAP

The SERVER.MAP text file establishes a relationship between a 2-character Server ID used by Thoroughbred and the server system.

Thoroughbred uses the Server ID to reference the server system. Enter a line in the file for each server.

The syntax for an entry is:

server-id:[host-name]::PARENT

server-id

is a 2-character alphanumeric string used within Basic to reference a particular server system.

host-name

is the host name for the server system.

IPLINPUT

Once you establish the server ID you can make the required entries for the IPLINPUT file.

Each DEV line corresponds to a directory on the server. The syntax for a DEV line is:

DEV device-name,1,,server-flag,,,,server-id:path

device-name

is device ID used to reference logical disk directories. Valid values range from D0 through DZ.

server-flag

informs Basic that the disk directory is located on a server and defines the type of server. The value for the Thoroughbred server is 2.

server-id

is the two-character alphanumeric code assigned to this server. The server ID on the DEV line must match an entry in the SERVER.MAP file.

path

is the directory (on the server) where the data resides. The path may or may not be a fully qualified path. If it is not a fully qualified path, it is interpreted as relative to the directory where the server executable resides.

Example

The following are example of valid DEV lines (using the SERVER.MAP entries defined previously):

DEV D0,1,,2,,,S1:IDL4

An IPLINPUT file may contain DEV lines that point to directories on the Client system and DEV lines that point to directories on the Server system.

TERM.MAP

The Thoroughbred Environment and the Server Process (tsserv) uses terminal IDs to enforce data integrity (record and file locking). Terminal IDs must be unique not only with other client Basics but also with each server connection. The client and server(s) negotiate at startup to establish a terminal ID that is unique for the client Basic and all servers connected. Therefore it is not recommended that client Basics be initiated as follows:

./b T5

Terminal table assignment is accomplished using TERM.MAP. See the Thoroughbred Basic Customization and Tuning Guide for information on creating and maintaining the TERM.MAP file.

For Windows NT clients, the SETUP installation creates a TERM variable in AUTOEXEC.BAT and sets it to WIN. The SETUP installation also creates a TERM.MAP file with the one entry listed below:

WIN|win:WINNTCON

USING TS NETWORK DATASERVER

The following describes how to access and manage server connections.

Operating System Interface

The Thoroughbred server makes any Thoroughbred native file accessible to a client. This includes Programs and Object Libraries. Your entire application may reside on the server.

If your application does an operating system check, the results are based on the Client Basic. It is important to understand that instructions that are operating system specific may not generate expected results.

Server Process for Windows 2000/NT/XP

Starting the Server Process

The installation sets up the Thoroughbred server as an automatic service. The server process is initiated each time the system is started.

You can manually start and stop the Server Process through **Services** in the **Control Panel**.

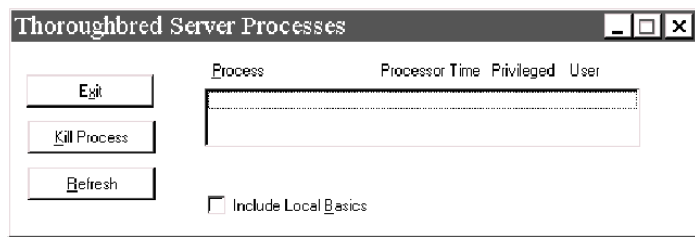
Managing the Server Processes

A server system that is running properly has one instance of the Startup Program (tsmgr) running and one instance of the Server Process (tsserv) running for every client that is connected.

For a given client machine and server system, there is a one-to-one correspondence between the client and server processes. When a client connects to a server, a Server Process is created for that client by tsmgr. When the client quits, the associated Server Process (tsserv) also terminates.

For Windows 2000/NT/XP operating systems the Thoroughbred utility tbpview.exe can be used to produce a listing of processes that are currently running. This program can be found in the Thoroughbred folder (e.g. c:\tbsc). When tsmgr is not running, the (empty) output should be similar to the following dialog box:

List of Processes Currently Running



Server Authorization

The Server Process requires an Activation Process similar to Thoroughbred Basic. If any server defined in the IPLINPUT file has not been activated, the user will be given the option to authorize that server.

Client Connection

Once the Server Process is up and running, clients can begin to connect. For each DEV line in the IPLINPUT file that specifies a connection to a server, an attempt is made to connect to that server.

- If an existing connection already exists, the existing virtual circuit will be used for communication.
- If no existing connection exists, a virtual circuit to the server will be created.
- If a connection cannot be made, an appropriate error message will be displayed. The device will be disabled.

If there are no servers defined in the IPLINPUT file or the client could not connect the defined servers, the client can still operate accessing local files.

Managing the Number of Connections

The server manages the number of connections. Each time a new connection is initialized, the user count will be incremented. When a user exits Basic (RELEASE), the user will be removed from the count.

OPENing Data Files

Thoroughbred client follows the same methodology as standard Basic when searching for files. The disk directories are searched in the order they are defined in the IPLINPUT file.

If the client Basic attempts to OPEN /home/data/filename, the search starts with the first hierarchical disk defined in the IPLINPUT file. The client and each server may have a hierarchical disk directory defined in the IPLINPUT file. Adding a server ID to the above path S1:/home/data/filename does not force access to the server. In this example the server ID S1 is ignored and the search is done as if the server ID did not exist.

Data Security

The server Process (tsserv) is installed with the set-UID bit set. Therefore, the client has the same permissions as the owner of the Server Process (tsserv) when accessing files on the server.

ERROR MESSAGES

The following describes startup and Client Error Messages.

Startup Messages

Unable to get host information for host name:

Explanation: The host name in the SERVER.MAP file is not valid.

Action: Verify that the SERVER.MAP file contains valid host name entries for all of the defined servers.

Unable to get host information for host address:

Explanation: The address in the SERVER.MAP file is not valid. Either the format is not correct or the address does not exist.

Action: Verify that the SERVER.MAP file contains valid addresses for all of the defined servers.

Invalid SERVER.MAP entry for Server:

Explanation: The entry in the SERVER.MAP file is not valid.

Action: Verify that the entries in the SERVER.MAP file are not missing any fields.

Unable to connect to Server:

Explanation: The client was unsuccessful in its attempt to connect to the server.

Action: Verify that the Startup Program (tsmgr) is running on the server. Verify that the port number in the SERVER.MAP file is 5680. Verify that the network is up and functional. Try alternate methods of communicating with the Server (e.g., ping, telnet, rlogin, rcp, ftp) or notify your network administrator.

Client Error Messages

Error 103

Explanation: Operating system error. When running TS Network DataServer, there might be an error from a call made to the Socket API. The cause may be a broken or lost connection to the server.

Action: The client must exit Basic and restart.

TROUBLESHOOTING

The following provides troubleshooting information for the Thoroughbred Server.

Server Crash

If the server crashes or the connection is lost, any attempt to access data on the server results in and Error 103. The client must exit Basic and restart.

Performance

Performance problems can be caused by network connection or by the hangs that occasionally occur in mixed operating system environments. Contact the network administrator to determine if network problems exist. To see if you are running into excessive “hang” conditions, type:

```
DUMP IPLDEVS "STATS=YES"
```

The listing shows the timeout errors for those servers to which the client is connected. The listing should look similar to:

Listing of Timeout Errors

*** IPL ENVIRONMENT INFORMATION											
*** TCP TIMEOUT INFORMATION											
	Level										
Server	1	2	3	4	5	6	7	8	9	10	Total
S1:Server1	1	0	0	0	0	0	0	0	0	0	1
S2:Server1	4	2	0	0	0	0	0	0	0	0	6
*** END OF DUMP2											

Remember that a Level 1 error is a timeout after one second, a Level 2 error is a timeout after two seconds, a Level 3 error is a timeout after four seconds, etc.

You should also contact the Server System Administrator to verify that the server is fully functional.