THOROUGHBRED® BASIC™ FOR UNIX/LINUX

Installation and Upgrade Guide

Version 8.9.1

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INTRODUCTION

This guide instructs you how to install Thoroughbred Basic.

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

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INSTALLATION AND UPGRADE

Thoroughbred Basic is an implementation of Business BASIC that can act as a stand-alone product. It can also act as baseline software for Dictionary-IV, a data dictionary that provides the foundation for Thoroughbred products such as Query-IV, Report-IV, Script-IV, or Source-IV. Thoroughbred Basic and Dictionary-IV also form the basis for Thoroughbred Solution-IV Accounting products, Thoroughbred VIP (Visual Image Presentation), and Thoroughbred Gateway for Windows.

Linux Installations

When installing on Linux, it is recommended that Thoroughbred products are installed on stable or Long Term Solution (i.e. LTS) versions of Linux. Although Thoroughbred products can be installed on "rolling releases" of Linux, their functionality and performance cannot be guaranteed.

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 IPLINPUT and TERMINAL files from the Thoroughbred Basic directory. From the UTILS 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.

How to Install or Upgrade Thoroughbred Basic (Expert)

If you need more information, please refer to the *Detailed Installation and Upgrade* chapter in this manual.

1. Login root

   Use site procedures to login as root at the system console.

2. Clear your system

   If you have Thoroughbred Basic installed on your system, verify that all tasks and users have exited.

3. Check your hardware

   Minimal hardware configuration requires at least 6M of available disk storage.

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4. Establish the home directory

   To install Thoroughbred Basic for the first time, you can use the mkdir command to create a home directory. By convention, the Thoroughbred Basic home directory is /usr/lib/basic, but you can specify any valid path with one exception: you must not install Thoroughbred Basic in the root directory. After you create the home directory, use the cd command to move there.

   Note: Thoroughbred Basic will create the /usr/lib/basic directory as a depository for some of its system files. All other files will be placed in the home directory you specify.

   To upgrade Thoroughbred Basic, you can use one of the following procedures:

   - If you plan to have two versions of Thoroughbred Basic on the same system, you can create a new home directory for the new Thoroughbred Basic, then move to the new home directory.

   - If you plan to copy over your current Thoroughbred Basic files, you can move to the current Thoroughbred Basic home directory, back up your application and data files and back up the TERMINAL and IPLINPUT files. From the UTILS subdirectory, back up the TCONFIGW, TCONFIG8, and TCONFIG files; you may not have all three of these files.

   - You must remove the tbredbas***.****nn* file from the /usr/lib/basic directory if you are increasing the maximum number of users in the same version of Thoroughbred Basic or you are changing the current Thoroughbred Basic serial number.

   Only Thoroughbred Basic files will be replaced during the upgrade.

5. Set directory and file permissions

   Use the umask 0 command to maintain the current set of permissions for your users and yourself.

6. Copy the files

   UNIX/Linux Installations are accomplished using **cpio**. Sample cpio commands are as follows:

   ```
   cpio –icvBmud < TSI_ENV
   ```

   Note: Depending on your product you will enter TSI_ENV or TSI_OW.
   Note: Use **–ivBmud** if you are installing Linux

7. Check your system and environment

   Before you install or upgrade Thoroughbred Basic you can examine your system to find out how many file locks are available, how many operating system file channels exist, and so on. You can use **./install -e** where **-e** stands for environment. With this parameter the install utility will not install or upgrade Thoroughbred Basic.

8. Begin the installation or upgrade

   You can use **./install -w**, where **-w** stands for warning, to generate system information or warnings as you install or upgrade Thoroughbred Basic. If you don't want to generate system information or warnings use **./install**.

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9. Establish your system console

   The install utility will generate screens and messages you can use to define your system console so that Thoroughbred Basic can most efficiently use its display capabilities.

10. Test the system

    Make sure that both root and user logins can run Thoroughbred Basic. After you finish this task, login as root.

11. Get an Activation Key from Thoroughbred Software International

    If you do not activate Thoroughbred Basic, you have thirty days to validate your system. After thirty days, site use of Thoroughbred Basic will be restricted. Contact Thoroughbred Software for an Activation Key or go to www.tbred.com and select the Activation link to get your Activation Key online.

12. Customize and tune your system

    You can use the information in the Thoroughbred Basic Customization and Tuning Guides to tailor Thoroughbred Basic to meet site requirements. The manuals contain information on how to configure terminals, how to manipulate directories, how to specify printers, how to enable ghost tasks, and how to modify system files.

13. Restore your system

    The installation or upgrade is complete. You can use site procedures to inform everyone that Thoroughbred Basic is available.

Detailed Installation and Upgrade

This chapter is an expanded version of the installation or upgrade procedure listed in **How to Install or Upgrade Thoroughbred Basic**. Each numbered task in the procedure is mapped to its corresponding section in this chapter. For example, the task numbered 13 in **How to Install or Upgrade Thoroughbred Basic** is more fully described in **Check your system and environment**.

Before you begin, you need to decide when to install or upgrade Thoroughbred Basic. Please consider some of the issues that may affect your decision:

- You must clear your system of all other Thoroughbred Basic users and tasks during the installation or upgrade procedure.
- Most sites need between thirty minutes and three hours to complete the procedure.
- If you are not an experienced UNIX system administrator, and if you have not installed or upgraded previous versions of Thoroughbred Basic; you may need to call your Thoroughbred dealer for help. Many dealers can only provide technical support during normal business hours.

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You may find it most convenient to begin the installation or upgrade procedure before your site opens for business. It is easier to clear the system before work begins and you have a better chance of avoiding downtime. If you run into a problem, you can call for support just as soon as your dealer opens the phone lines; you can solve the problem and finish the job before midmorning.

To install or upgrade Thoroughbred Basic, you can use the procedure described in the following sections.

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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 IPLINPUT and TERMINAL files from the Thoroughbred Basic directory. From the UTILS 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.

Login as root

Use site procedures to login as root at the system console. You will need between thirty minutes and three hours to complete your installation or upgrade.

Clear Your System

If you have Thoroughbred Basic installed on your system, use site procedures to ensure that all tasks and users have exited from Thoroughbred Basic. Active tasks and users can interfere with the installation or upgrade procedure.

Check Your Hardware

To install or upgrade Thoroughbred Basic, you must meet or exceed the following requirement: at least six

Software Serial Number

You will need to enter your Software Serial Number during the installation or upgrade.

Validate the installation or upgrade by contacting Thoroughbred Software International to activate Thoroughbred Basic or go to www.tbred.com and select the Activation link to get your Activation Key online. The software serial number and installation will be part of the information you provide to receive an Activation Key.

Establish the Home Directory

Thoroughbred Basic requires a home directory. How you establish the home directory depends on whether you are installing or upgrading Thoroughbred Basic.

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For an installation

To install Thoroughbred Basic, you can use the following procedure:

1. To create the home directory, you can use:

   mkdir /*directory*[[/*directory*] . . .]

   directory is a valid directory name. By convention, the Thoroughbred Basic home directory is /usr/lib/basic. If you require a different home directory, there are only two restrictions:

   - The directory path you select must be a valid path. It must follow the naming standards set by your operating system.
   - You must not install Thoroughbred Basic in the root directory. The installation procedure will create a **.**profile file. If you install Thoroughbred Basic in the root directory, you will overwrite the **.**profile file common to many UNIX systems.

   Note**:** Thoroughbred Basic will create the /usr/lib/basic directory as a depository for some of its system files. All other files will be placed in the home directory you specify.

2. To move to the home directory, you can use:

   `cd` ***/directory[[/directory] . . .]***

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For an upgrade

To upgrade your current version of Thoroughbred Basic, you can use one of the following procedures:

- If you plan to test Thoroughbred Basic before you make it part of your production system, you can:

  1. Use the mkdir command to create a new home directory for Thoroughbred Basic files.

  2. Use the cd command to move to the new home directory.

     Your current production system will be unaffected by the upgrade. However, you must maintain a distinction between the current production system and the new system. Files saved under the current Thoroughbred Basic may not run under earlier versions of Thoroughbred Basic.

- If you plan to copy over your current Thoroughbred Basic files, you can:

  1. Use the cd command to move to the current Thoroughbred Basic home directory.

  2. 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.

  3. Use site procedures to back up the IPLINPUT and TERMINAL files from the home directory. From the UTILS subdirectory, which is below the home directory, back up the TCONFIGW, TCONFIG8, and TCONFIG files; you may not have all three of these files so back up as many as you find. The upgrade procedure will overwrite these system files, which define how Thoroughbred Basic interacts with your hardware and operating system.

  4. Remove the tbredbas**.***nn* file from the /usr/lib/basic directory if at least one of the following conditions is true:

     - You are increasing the maximum number of users in the same version of Thoroughbred Basic. For example, if you already have Thoroughbred Basic on your system and this upgrade will increase the maximum number of users from 32 to 128 you must remove the tbredbas**.***nn* file.

     - You are changing the current Thoroughbred Basic serial number.

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

Note: Before trying to downgrade any Thoroughbred product, contact your Thoroughbred Sales Representative.

Set the Directory and File Permissions

To maintain the current set of permissions for your users and yourself, you can use:

```
umask 0
```

Thoroughbred Basic directory, file, and execute permissions will not be modified during the installation or upgrade.

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Check Your System and Environment

Before you install or upgrade Thoroughbred Basic you can look into your system to determine:

- The number of available file locks
- The number of operating system file channels
- The maximum length of a filename
- Whether the system has advisory or mandatory locking
- The maximum number of ghost tasks you can run

The Install Utility

The Thoroughbred install utility can help you check your system before you install or upgrade Thoroughbred Basic. You can use:

./install -e

-e stands for environment. The install utility will check the system and environment but it will not install or upgrade Thoroughbred Basic.

If you enter this command, the install utility will display a series of system messages and, perhaps, warning messages. For more information on system and warning messages, please refer to **Messages**.

After you check your system and environment, you may want to use some of the information in the following subsection to help configure your operating system for Thoroughbred Basic.

Suggested Specifications for Tunable Parameters

If your operating system provides tunable parameters, you may want to change the values specified for some of these parameters so that your operating system can efficiently manage Thoroughbred Basic. A list of relevant tunable parameters and recommended specifications follows:

NFILE (files for entire system)	40 x number of users
NINODE (inodes for entire system)	40 x number of users
NOFILES (open files per user)	40
NPROC (processes for entire system)	10 x number of users
MAXUPRC (processes per user)	25
NFLOCKS (locks for entire system)	30 x number of users
NCLIST (character list structures)	15 x number of users
SEMMAP (entries in semaphore map)	1 per Ghost Task
SEMMNI (semaphore identifiers)	1 per Ghost Task
SEMMNS (semaphores in system)	3 per Ghost Task

You may also want to review current specifications for the ulimit parameter and shared memory settings.

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Some versions of UNIX do not provide tunable parameters, other versions provide some but not all of these parameters, and some versions use different naming conventions for the parameters listed above. For more information on tunable parameters, please review the information in your operating system's reference manual.

Begin the Installation or Upgrade

Use the install utility to install or upgrade Thoroughbred Basic.

./install [-w]

The **./install** command will install or upgrade Thoroughbred Basic, but the install utility will not generate and display system messages or warnings.

-w stands for warning. The **./install -w** command will install or upgrade Thoroughbred Basic and, if necessary, generate and display system information or warnings. For more information on system and warning messages please refer to **Messages**.

If you used the **./install -e** command described in the preceding section, and you are satisfied with the results of the system and environment check, you don't need to use the **-w** parameter. If, however, you changed the value of at least one tunable parameter you may want to use the **-w** parameter to make sure that your operating system can efficiently manage Thoroughbred Basic.

After you enter **./install** the install utility will display the Installation Setup screen.

You must enter valid values in two fields:

```
************************************************
*                                              *
*          Thoroughbred BASIC Installation Setup          *
*                                              *
************************************************
```

Enter the software serial number:

(-)

Enter the software serial number**.**

Type the serial number and press the **Enter** key. If you type an invalid value, the system will generate a message:

```
INVALID ssn. RETRY? (Y/N):
```

Y You can enter a valid value. If the install utility does not accept the software serial number, please contact your Thoroughbred dealer

N The install utility will return you to the operating system prompt. It will not install or upgrade Thoroughbred Basic.

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If you receive the message:

Invalid ssn for this product. Retry? (Y/N)

Y You can correct a tying mistake.

N The install utility will return you to the operating system prompt. It will not install or upgrade Thoroughbred Basic. Contact your Thoroughbred dealer to obtain a valid software serial number.

After the install utility validates the device name and serial number, it will display the following message:

```
Installing Thoroughbred Basic, Please Wait . . . .
```

Then, after some time elapses, the install utility displays the following message:

```
Thoroughbred Installation Part 1 Completed Successfully.
```

The install utility will display the Installation and Updating Procedures Menu:

```
     Thoroughbred BASIC Installation and Updating Procedures


                1)  Install New System
                2)  Install/Update User Logins
                3)  Install/Update BASIC Directories
                4)  Install/Update BASIC Printers
                5)  Install/Update BASIC Terminals
                6)  Install/Update BASIC Ghost Tasks


                Enter Selection (1 - 6) or <CR> to end:
```

This menu is described in the following section.

Establish Your System Console

You must configure Thoroughbred Basic to recognize your system console so that Thoroughbred Basic can make full and efficient use of all terminal features. How you accomplish this task depends on whether you are installing or upgrading Thoroughbred Basic:

- If you are installing, please use the information in the following subsection.
- If you are upgrading, please turn to “For an Upgrade”.

For an Installation

Note: You may need to provide the install utility with information about the system console. Knowing the value specified for your operating system's TERM variable may help you make informed decisions. For more information, please get the technical reference for the terminal and keep it handy as you perform this task.

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After you begin the installation, the install utility will display the Installation and Updating Procedures Menu:

```
    Thoroughbred BASIC Installation and Updating Procedures


                1)  Install New System
                2)  Install/Update User Logins
                3)  Install/Update BASIC Directories
                4)  Install/Update BASIC Printers
                5)  Install/Update BASIC Terminals
                6)  Install/Update BASIC Ghost Tasks


                Enter Selection (1 - 6) or <CR> to end:
```

You must enter a valid value in the following field:

```
Enter Selection (1 - 6) or <CR> to end:
```

To install and configure your system console, type **5** and press the **Enter** key.

For a full copy

If you are installing a full copy of Thoroughbred Basic, the following screen will be displayed.

```
            Thoroughbred BASIC Activation Procedure


       This system contains a temporary installation of
       Thoroughbred BASIC.
       You have less than 'nn' days before the number
       of active users is restricted to 3.


                   SSN = XXXXXXXXX-XX
                   Installation Code = XXXXXXXXX

       Do you want to enter the Activation Key? (Y/N):
```

You must enter a valid value in one field:

```
Do you want to enter the Activation Key? (Y/N)
```

Y If you plan to activate Thoroughbred Basic now, please refer to **Get an Activation Key from Thoroughbred Software International**. In most cases, you will want to wait until the installation is complete.

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N You do not want to enter the Activation Key now. You can finish the installation before you activate Thoroughbred Basic.

Note: To validate your copy of Thoroughbred Basic, you must get an Activation Key from Thoroughbred Software. You have thirty days to obtain and enter an Activation Key. If thirty days elapse without activation, site use of Thoroughbred Basic will be restricted.

If you select N the install utility will display the following message:

```
Thoroughbred BASIC   Level 8.9.1   nn User
DEPRESS THE CARRIAGE RETURN KEY:
```

Press the Enter key to display the Configuration Menu.

```
SELECT TCONFIG FILE TO EDIT


   1. TCONFIG8 (NON-WINDOWS)
   2. TCONFIGW (WINDOWS ONLY)


SELECT OPTION (1 OR 2):
```

You must enter a valid value in the following field:

```
SELECT OPTION (1 OR 2):
```

1 is the TCONFIG8 option, an option that does not enable you to use **Dictionary-IV 8.9.1** or Thoroughbred Basic Windows.

TCONFIG8 is the name of a file that is placed in the UTILS subdirectory under the Thoroughbred Basic home directory. This file contains specifications and definitions that enable Thoroughbred Basic to manage your terminal hardware.

Thoroughbred Dictionary-IV is the data dictionary component of the Thoroughbred OPENworkshop application development system. It can provide many resources to Thoroughbred Basic. For more information on these resources please refer to the chapter on the **Dictionary-IV Interface** in the Thoroughbred Basic Developer Guide.

Thoroughbred Basic Windows is a windowing system that enables you to create pop-up help systems, menu systems, and other program features commonly associated with windowing systems. For more information on Thoroughbred Basic Windows please refer to the Thoroughbred Basic Developer Guide.

If you have very old terminals, if you do not plan to use Dictionary-IV, or if you plan to develop applications that are text-based and linear, you may want to choose this option.

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2 is the TCONFIGW option, which enables you to use Dictionary-IV 8.9.1 and Thoroughbred Basic.

TCONFIGW is the name of a file that is placed in the UTILS subdirectory under the Thoroughbred Basic home directory. This file contains specifications and definitions that enable Thoroughbred Basic to manage your terminal hardware.

If you have terminals with graphics capabilities, if you plan to use Dictionary-IV, or if you plan to develop applications that make use of the Thoroughbred Basic Windows graphical user interface, you must choose this option.

After you select 1 or 2 and press the Enter key, the install utility will display the Terminal Menu:

```
1. MODIFY TERMINAL TABLES
2. MODIFY TERMINAL/MODEL CODE CONFIGURATION
3. LOAD TABLE INTO TERMINAL


2. SELECT OPTION (1, 2, OR 3):
```

You must enter a valid value in the following field:

```
2. SELECT OPTION (1, 2, OR 3):
```

To identify your terminal, type **1** and press the **Enter** key. The install utility will display the Defined Terminal Table List screen:

```
                  DEFINED TERMINAL TABLE LIST

   ADDSUP     ADDS VIEWPOINT        MICOTERM   MICRO TERM
   ADM-3A     LSI MODEL ADM-3A      PIXEL      PIXEL CONSOLE TERM
   ALTOS-II   ALTOS-II TERMINAL     PROGTERM   BURROUGHS/CONV.PT
   ALTOS-V    ALTOS-V TERMINAL      PT200      PRIME PT200

   FASTRK30   4-PHASE FASTTRAK 30   TVI920     TELEVIDEO 920
   FORTUNE    FORTUNE               TVI950     TELEVIDEO 950
   HP-2392    HP2392 DISPLAY        VT100      DEC VT100
   HP-98785   HP98785A DISPLAY      VT131      DEC VT131

3. C-CREATE M-MODIFY D-DELETE L-LIST TABLE - ENTER C, M, D, OR L:
```

Each terminal definition has two parts: the Model Code and the terminal description. The Model Code precedes the description. For example, the Model Code for a DEC VT100 terminal is VT100.

If the terminal type of your system console is listed, please write down the Model Code.

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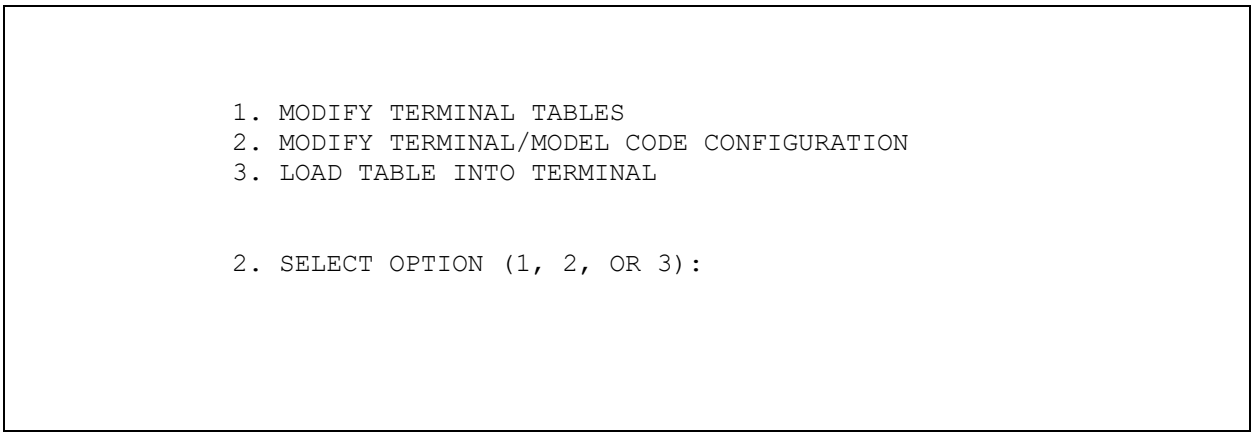
If your terminal type of your system console is not listed:

- You can determine whether your terminal emulates one of the listed terminals, then write down the Model Code of the listed terminal. If you have to adjust the settings on your system console, you may have problems with other programs and applications.
- You can determine whether your terminal is analogous to one of the listed terminals, then write down the Model Code of the listed terminal. Even if your terminal is a good match for one of the listed terminals, you may have minor display problems when you run Thoroughbred Basic.
- You can temporarily use one of the options above, then create a terminal type when you customize and tune Thoroughbred Basic. To learn how to create or modify terminal types and terminal tables, please refer to the information in the Thoroughbred Basic Customization and Tuning Guide.

After you identify your terminal and write down its Model Code, check the field at the bottom of the screen:

```
3. C-CREATE, M-MODIFY, D-DELETE, L-LIST TABLE - ENTER C, M, D, OR L:
```

Type END and press the Enter key. The install utility will return you to the Terminal Menu:



You must enter a valid value in the following field:

```
2. SELECT OPTION (1, 2, OR 3):
```


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Thoroughbred Basic needs a terminal ID to finish terminal configuration. To associate your terminal ID with the terminal table, type **2** and press the **Enter** key. The install utility will display the Terminal/Model Codes screen:

```
                    TERMINAL/MODEL CODES


 T0 WY-60  WYSE 60 IBM KEYBOARD   T4 WY-60  WYSE 60 IBM KEYBOARD
 T1 WY-60  WYSE 60 IBM KEYBOARD   T5 WY-60  WYSE 60 IBM KEYBOARD
 T2 WY-60  WYSE 60 IBM KEYBOARD   T6 WY-60  WYSE 60 IBM KEYBOARD
 T3 WY-60  WYSE 60 IBM KEYBOARD   T7 WY-60  WYSE 60 IBM KEYBOARD

                    THIS TERMINAL IS T0


      22. ENTER TERMINAL ID:
```

You must enter a valid value in the following field:

```
22. ENTER TERMINAL ID:
```

Since you are configuring this terminal, type the terminal ID displayed on the screen and press the **Enter** key. You have associated the terminal ID with the terminal table. The **install** utility will generate a message:

```
23. DELETE (Y/N)?:
```

Type **N** and press the **Enter** key. The **install** utility will generate a message:

```
24. ENTER MODEL CODE (8 CHARACTERS MAX):
```

Type the terminal model code you wrote down earlier and press the **Enter** key. The following message will be displayed.

```
22. ENTER TERMINAL ID:
```

To return to the Terminal Menu, type **END** and press the **Enter** key.

Because you have created a new terminal table the **install** utility will display the following message:

```
SAVE NEW TERMINAL/MODEL TABLE (Y/N):
```


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Type **Y** and press the **Enter** key. The Terminal Menu will be displayed:

```
        1. MODIFY TERMINAL TABLES
        2. MODIFY TERMINAL/MODEL CODE CONFIGURATION
        3. LOAD TABLE INTO TERMINAL


        2. SELECT OPTION (1, 2, OR 3):
```

You must enter a valid value in the following field:

```
2. SELECT OPTION (1, 2, OR 3):
```

You have associated a terminal ID with a terminal table. Now, you must load the terminal table into the current operating environment so Thoroughbred Basic can make full and efficient use of your terminal. Type **3** and press the **Enter** key. The **install** utility will display the Load Terminal with New Terminal Table screen.

```
                LOAD TERMINAL WITH NEW TERMINAL TABLE

   ADDSUP     ADDS VIEWPOINT         MICOTERM   MICRO TERM
   ADM-3A     LSI MODEL ADM-3A       PIXEL      PIXEL CONSOLE TERM
   ALTOS-II   ALTOS-II TERMINAL      PROGTERM   BURROUGHS/CONV.PT
   ALTOS-V    ALTOS-V TERMINAL       PT200      PRIME PT200

   FASTRK30   4-PHASE FASTTRAK 30    TVI920     TELEVIDEO 920
   FORTUNE    FORTUNE                TVI950     TELEVIDEO 950
   HP-2392    HP2392 DISPLAY         VT100      DEC VT100
   HP-98785   HP98785A DISPLAY       VT131      DEC VT131

         25. ENTER MODEL CODE TO LOAD (CR = WY-60):
```

Check the value displayed in the following field:

```
25. ENTER MODEL CODE TO LOAD (CR = XXXXXXXX):
```


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If *XXXXXXXX* is the model code you wrote down earlier, press the **Enter** key. The **install** utility will return you to the Terminal Menu:

```
        1. MODIFY TERMINAL TABLES
        2. MODIFY TERMINAL/MODEL CODE CONFIGURATION
        3. LOAD TABLE INTO TERMINAL


        2. SELECT OPTION (1, 2, OR 3):
```

You must enter a valid value in the following field:

```
2. SELECT OPTION (1, 2, or 3):
```

Type **END** and press the **Enter** key. The **install** utility will display the Installation and Updating Procedures screen:

```
    Thoroughbred BASIC Installation and Updating Procedures


                1)  Install New System
                2)  Install/Update User Logins
                3)  Install/Update BASIC Directories
                4)  Install/Update BASIC Printers
                5)  Install/Update BASIC Terminals
                6)  Install/Update BASIC Ghost Tasks


                Enter Selection (1 - 6) or <CR> to end:
```

You must enter a valid value in the following field:

```
Enter Selection (1 - 6) or <CR> to end:
```

To leave the **install** utility and return to the operating system prompt, press the **Enter** key.

You have configured Thoroughbred Basic to use your system console. The values you specified have been placed in the TERMINAL file in the Thoroughbred Basic home directory.

Please turn to Test the system, to continue your installation.

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For an upgrade

You can establish your system console, as well as eliminate most customization and tuning tasks, by copying or restoring a set of files that contain information about how your site configured the previous version of Thoroughbred Basic.

After you begin the upgrade, the **install** utility will display the Installation and Updating Procedures Menu:

```
    Thoroughbred BASIC Installation and Updating Procedures


                1)  Install New System
                2)  Install/Update User Logins
                3)  Install/Update BASIC Directories
                4)  Install/Update BASIC Printers
                5)  Install/Update BASIC Terminals
                6)  Install/Update BASIC Ghost Tasks


                Enter Selection (1 - 6) or <CR> to end:
```

You must enter a valid value in the following field:

```
Enter Selection (1 - 6) or <CR> to end:
```

To leave the **install** utility and return to the operating system prompt, press the **Enter** key.

You can use one of the following methods to configure your system console:

- If you loaded Thoroughbred Basic files into a new home directory so that you could run two systems, you can copy the IPLINPUT and TERMINAL files from the old home directory into the new home directory. Then, copy the TCONFIG, TCONFIG8, and TCONFIGW files from the old UTILS subdirectory, which is under the old Thoroughbred Basic home directory, to the new UTILS subdirectory. You may not have all three of the TCONFIG files.
- If you overwrote a previous version of Thoroughbred Basic with Thoroughbred Basic you can restore some backup files: first, restore the IPLINPUT and TERMINAL files and put them in the Thoroughbred Basic home directory; then, restore the TCONFIG, TCONFIG8, and TCONFIGW files and place them in the UTILS subdirectory, which is under the Thoroughbred Basic home directory. You may not have all three of the TCONFIG files.

Test the System

After you establish your system console, you must make sure that both root and user logins can run Thoroughbred Basic. If you run into display problems when you test Thoroughbred Basic, please return to establish your system console, and redefine your terminal to Thoroughbred Basic.

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How to Start Thoroughbred Basic

You are still logged in as root. Make sure you are in the Thoroughbred Basic home directory. You can use the following command to start Thoroughbred Basic:

```
./b [taskID] [IPLfile]
```

./ tells the operating system to search the current directory, in this case the Thoroughbred Basic home directory.

b is the command to start Thoroughbred Basic.

taskID is the name of the task ID, which is also called the terminal ID. A task ID is automatically assigned to your terminal depending on the position of the terminal device name in the TERMINAL file. For more information on the TERMINAL file, please refer to the Thoroughbred Basic Customization and Tuning Guide.

In a multi-user environment, all of the users at your site must agree to start Thoroughbred Basic in just one of the following ways:

- Allow Thoroughbred Basic to assign task IDs, in which case no user specifies a value for taskID.
- Use a unique task ID, in which case every user specifies a value for *taskID*.

  Site procedures must specify just one of these ways to start Thoroughbred Basic. If both methods are used, more than one user may have the same task ID, which can cause problems such as file corruption.

IPLfile is the name of the initial program load (IPL) file, which contains specifications and commands that are automatically executed when you start Thoroughbred Basic. The default is IPLINPUT, a file in the Thoroughbred Basic home directory. For more information on the IPL files, please refer to the Thoroughbred Basic Customization and Tuning Guide.

Type the command to start Thoroughbred Basic and press the **Enter** key. If you have not entered a Thoroughbred Basic Activation Key, the Thoroughbred BASIC Activation Procedure screen will be displayed:

```
        Thoroughbred BASIC Activation Procedure


   This system contains a temporary installation of
   Thoroughbred BASIC.
   You have less than 'nn' days before the number
   of active users is restricted to 3.


              SSN = XXXXXXXXX-XX
              Installation Code = XXXXXXXXX

   Do you want to enter the Activation Key? (Y/N):
```


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You must enter a valid value in the following field:

```
Do you want to enter the Activation Key? (Y/N):
```

Y If you plan to activate Thoroughbred Basic now, please refer to **Get an Activation Key from Thoroughbred Software International**. Since you are testing the product now, it may be best to wait until this task is done.

N You do not want to enter the Activation Key now. You can finish testing the installation or upgrade before you activate Thoroughbred Basic.

Note: To validate your copy of Thoroughbred Basic, you must get an Activation Key from Thoroughbred Software. You have thirty days to obtain and enter an Activation Key.

If thirty days elapse without activation, site use of Thoroughbred Basic will be restricted. To get an Activation Key and remove the restriction you will have to reinstall Thoroughbred Basic.

If you select N the install utility will display the following message:

```
Thoroughbred BASIC   Level x    nn User
```

Thoroughbred Basic begins by displaying the DICTIONARY INSTALL screen. Follow the on-screen instructions to install or upgrade other Thoroughbred products such as Dictionary-IV and the Thoroughbred Basic Utilities. This screen is displayed the first time Thoroughbred Basic is executed after an installation or upgrade.

After the first execution, Thoroughbred Basic displays the copyright screen. For more information on the copyright screen, please refer to the Dictionary-IV Administrator Guide.

How to Exit from Thoroughbred Basic

Whenever possible, exit from Thoroughbred Basic to the operating system before you shut down the computer. There are two ways to exit from Thoroughbred Basic:

- If you are displaying the Thoroughbred Basic Utilities Menu screen, you can find the following option:

  ```
  EXIT TO OPERATING SYSTEM
  ```

  Type the option number and press the **Enter** key. You will return to the operating system prompt.

- If your system is in Thoroughbred Basic Console Mode, you can type

  ```
  RELEASE
  ```

  and press the **Enter** key. You will return to the operating system prompt.

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Conduct Tests as a User

You have tested Thoroughbred Basic under the root login. Now, you can log off the operating system, login on the same terminal as a user, and make sure that users have appropriate sets of permissions for Thoroughbred Basic.

After you are done, login as root. To continue your installation or upgrade, please go to the next section.

Get an Activation Key from Thoroughbred Software

If you have not activated Thoroughbred Basic, you have thirty days to validate your system. After thirty days your installation or upgrade will be restricted. Contact Thoroughbred Software for an Activation Key or go to www.tbred.com and select the Activation link to get your Activation Key online.

If you are not currently using the **install** utility, go to the Thoroughbred Basic home directory type **./b** and press the **Enter** key. The Thoroughbred BASIC Activation Procedure screen will be displayed:

```
        Thoroughbred BASIC Activation Procedure


This system contains a temporary installation of
Thoroughbred BASIC.
You have less than 'nn' days before the number
of active users is restricted to 3.


            SSN = XXXXXXXXX-XX
            Installation Code = XXXXXXXXX

Do you want to enter the Activation Key? (Y/N):
```

Until you enter a valid Activation key, this screen will be displayed every time you start Thoroughbred Basic. Before you contact Thoroughbred Software International make sure you have the following information handy:

- Your Dealer Code.
- The software serial number, which you can find on the displayed Thoroughbred BASIC Activation Procedure screen.
- The Installation Code, which is also displayed on the Thoroughbred BASIC Activation Procedure screen.

To get an Activation Key you can:

- Go to http://www.tbred.com/activation and select the Activation link to get your Activation Key immediately online.
- Call Thoroughbred Software International at (800) 524-0430 or (732) 560-1377 and ask for the Activation Desk.

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After Thoroughbred Software International provides the Activation Key, you must enter the valid value in the following field:

```
Do you want to enter the Activation Key? (Y/N):
```

Type **Y** and press the **Enter** key. The following message will be displayed:

```
Enter Activation Key:
```

Type the Activation Key you received from Thoroughbred Software International and press the **Enter** key. The following messages will be displayed:

```
Performing final installation of BASIC . . .
```

After some time elapses the following message will be displayed:

```
INSTALLATION COMPLETE
```

One of the following events will occur:

- If this is the first time Thoroughbred Basic has been started since the installation or upgrade, it begins by displaying the DICTIONARY INSTALL screen. Follow the on-screen instructions to install or upgrade other Thoroughbred products such as Dictionary-IV and the Thoroughbred Basic Utilities.
- After the first execution, Thoroughbred Basic displays the copyright screen. For more information on the copyright screen, please refer to the Dictionary-IV Administrator Guide.

You have fully installed or upgraded Thoroughbred Basic. Please go to the next sections to finish up.

Customize and Tune Your System

You can use the information in the Thoroughbred Basic Customization and Tuning Guides to tailor Thoroughbred Basic to meet site requirements. The manuals contain information on:

- How to configure terminals
- How to manipulate directories
- How to specify printers
- How to enable ghost tasks
- How to use system files

Immediate uses for this information depend on site requirements and on whether you installed or upgraded Thoroughbred Basic.

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For an Installation

To this point you have established your system console as a terminal that Thoroughbred Basic can efficiently use. Now, you can define the other site terminals to Thoroughbred Basic and make sure that other users will not experience display problems. You may also want to define site printers to Thoroughbred Basic.

Apart from those two tasks, you may have no immediate need for customization and tuning. Because site requirements will change as you develop Thoroughbred Basic applications, it is a good idea to skim through the Thoroughbred Basic Customization and Tuning Guide so that you can anticipate and use the information to help plan future modifications to the Thoroughbred Basic environment.

For an Upgrade

Because you copied or restored the IPLINPUT, TERMINAL, and up to three TCONFIG files as part of your upgrade, you have preserved the environment your site established for previous releases of Thoroughbred Basic.

In all likelihood, you have no immediate need for customization and tuning, but you may want to review the information in the Thoroughbred Basic Customization and Tuning Guide to determine whether further modifications will enhance your system.

Restore Your System

You can use site procedures to inform everyone that Thoroughbred Basic is available.

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MESSAGES

This chapter contains descriptions of the messages generated and displayed as the direct result of an installation or upgrade. Some messages are generated by the **install** utility when it is executed with the **-**e or **-**w parameter; Thoroughbred Basic generates some after it is installed or upgraded. All messages are alphabetically ordered.

`BASIC Installation corrupt. Please reload from media`

Explanation**:** Thoroughbred Basic cannot read at least one of its system files. You cannot run Thoroughbred Basic.

Action**:** If you have validated Thoroughbred Basic by entering an Activation Key please report this problem to your Thoroughbred dealer.

If you have not validated Thoroughbred Basic by entering an Activation Key you can perform the installation or upgrade procedure described in **The installation or upgrade procedure** or in **Installation and Upgrade Tasks**.

As part of the procedure you must remove the tbredbas**.***nn* file from the Thoroughbred Basic home directory. When you reuse the **install** utility, take notes on what procedures you follow, what messages are displayed, and so on.

If this error recurs, please write down the Thoroughbred Basic software serial number, your operating system, how your system is configured, the actions you took that preceded the error, the error message, and all other relevant information. Please report this problem to your Thoroughbred dealer.

`c_chns: was able to open` *n* `system channels`

Explanation**:** The **install** utility displays how many operating system file channels are available for Thoroughbred Basic:

n is the number of available operating system file channels.

Most UNIX systems have at least 20 file channels available.

Action**:** Because this is an informative message, no action is required.

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`c_fnl: File name length was found to be n characters`

Explanation**:** The **install** utility displayed the maximum number of characters your operating system allows in one file name:

n is the maximum length of a file name on your system.

Most UNIX systems enable you to specify file names that are from 1 through 14 characters long, but some enable file names that can be up to 1024 characters long.

Action**:** Although Thoroughbred Basic can accept file names that are more than 14 characters long, you must consider portability issues when you name files. If you plan to run Thoroughbred Basic under more than one UNIX system, you may need to establish or follow site-naming conventions for files.

`c_fnl: System did not return a "Filename too long" error message`

Explanation**:** The install utility determined that your operating system did not generate a warning message when a file name was too long. For example, if your UNIX system allows you to specify file names that are from 1 through 14 characters long, your system will not generate an error message if you create a file name that is at least 15 characters long: your system will just truncate the file name by removing the rightmost characters.

If you use long file names, especially names that differ only in the rightmost positions, such as PLYMOUTHOLDSMOBILE88 and PLYMOUTHOLDSMOBILE98, truncated file names can cause your system to overwrite needed files.

Action**:** You can determine whether your system can generate a "Filename too long" message. If the system is capable, you may need to reconfigure your system so that it consistently generates this message. In any event, you may need to establish or follow site-naming conventions for files to help avoid the problems this condition can cause.

`c_fnl: System does not return "Filename too long" error message`

Explanation**:** The **install** utility determined that your operating system cannot generate a warning message when a file name is too long. For example, if your UNIX system allows you to specify file names that are from 1 through 14 characters long, your system will not generate an error message if you create a file name that is at least 15 characters long: your system will just truncate the file name by removing the rightmost characters.

If you use long file names, especially names that differ only in the rightmost positions, such as PLYMOUTHOLDSMOBILE88 and PLYMOUTHOLDSMOBILE98, truncated file names can cause your system to overwrite needed files.

Action**:** You can determine whether your system can generate a "Filename too long" message; if the system is capable, you may need to reconfigure your system so that it consistently generates this message. In any event, you may need to establish or follow site naming conventions for files to help avoid the problems this condition can cause.

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`c_fnl: System returned a "Filename too long" error message`

Explanation**:** The **install** utility determined that your operating system can generate a warning message when a file name is too long. For example, if your UNIX system allows you to specify file names that are from 1 through 14 characters long, your system will generate an error message if you create a file name that is at least 15 characters long.

Action**:** Because this is an informative message, no action is required. However, you may need to establish or follow site-naming conventions for files to avoid the delays or problems this condition can cause.

`c_gh: Created 1 shared memory segment for` *n* `ghosts.`

Explanation**:** The **install** utility created a shared memory segment through which background tasks can communicate. This message displays how many ghost tasks can operate through one such segment:

n is the number of ghost tasks that can communicate through the shared memory segment.

Action**:** Because this is an informative message, no action is required.

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`c_gh: Created n semaphore ID's`

Explanation**:** The install utility displayed the number of available semaphore IDs:

n is the number of available semaphore IDs.

Each Thoroughbred Basic ghost task requires one semaphore ID, so *n* is equivalent to the number of background tasks one copy of Thoroughbred Basic can run on your system. Thoroughbred Basic enables you to specify up to 36 concurrent ghost tasks.

If you have a second copy of Thoroughbred Basic on your system with a different Inter-Process Communication (IPC) key that copy can have its own set of up to 36 ghost tasks.

Action**:** If the displayed number of semaphore IDs seems low, check your system. If other tasks and users are active, some other processes may be using some of the semaphore IDs. You can use a system program such as ipcs to check current semaphore ID use.

You can also check the values specified for some tunable parameters against the recommended values listed below:

SEMMAP (entries in semaphore map): 62
SEMMNI (semaphore identifiers): 62
SEMMNS (semaphores in system): 186

If other software products require shared memory, you can use the PRM IPCKEY statement to enable Thoroughbred Basic and the other products to concurrently use memory resources. For more information on the PRM IPCKEY statement, please refer to the Thoroughbred Basic Customization and Tuning Guide.

After you get the relevant information, you can decide how to configure your system so that you can run more ghost tasks.

`c_gh: Failed to create shared memory segment`

Explanation**:** The **install** utility could not create a shared memory segment through which background tasks can communicate. Thoroughbred Basic cannot run ghost tasks without this segment.

Action**:** If you plan to run ghost tasks, you can review your operating system documentation and current configuration to determine why your system could not create a shared memory segment. After you fix the problem, you can use the install **-**e command to verify that the problem is solved.

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`c_gh: System cannot support ghosts!`

Explanation**:** The **install** utility determined that your system cannot currently support Thoroughbred Basic background tasks.

Action**:** Because each Thoroughbred Basic ghost task requires one semaphore ID, the number of background tasks you can run is equivalent to the number of semaphore IDs currently available on your system. Check your system: if your system is not clear of other tasks and users, some other processes may be using the semaphore IDs. You can use a system program such as ipcs to check current semaphore ID use.

You can also check the values specified for some tunable parameters against the recommended values listed below:

SEMMAP (entries in semaphore map): 62
SEMMNI (semaphore identifiers): 62
SEMMNS (semaphores in system): 186

After you get the relevant information, you can decide how to configure your system so that you can run more ghost tasks.

`c_gh: System should support` *`n`* `ghosts`

Explanation**:** The **install** utility displayed the number of background tasks Thoroughbred Basic can currently support:

n is the number of ghost tasks.

Thoroughbred Basic enables you to specify up to 36 concurrent ghost tasks.

Action**:** Because each Thoroughbred Basic ghost task requires one semaphore ID, the number *n* is equivalent to the number of semaphore IDs currently available on your system. If the displayed number of ghost tasks seems low, check your system. If other tasks and users are active, some other processes may be using some of the semaphore IDs. You can use a system program such as ipcs to check current semaphore ID use.

You can also check the values specified for some tunable parameters against the recommended values listed below:

SEMMAP (entries in semaphore map): 62
SEMMNI (semaphore identifiers): 62
SEMMNS (semaphores in system): 186

If other software products require shared memory, you can use the PRM IPCKEY statement to enable Thoroughbred Basic and the other products to concurrently use memory resources. For more information on the PRM IPCKEY statement, please refer to the Thoroughbred Basic Customization and Tuning Guide.

After you get the relevant information, you can decide how to configure your system so that you can run more ghost tasks.

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`c_lcks: Warning: Need x locks, system supports y locks`

Explanation**:** The **install** utility has determined that your system does not have enough system locks. It displayed the number of system locks your operating system requires and the number of locks it could create:

x is the number of locks.
y is the number of users Thoroughbred Basic can support.

The **install** utility assumes that each user requires 30 locks, which is the recommended value for Thoroughbred Basic.

Action**:** If the number *y* seems low, check your system. If your system is not clear of other tasks and users, some other processes may be using the locks.

You can also check the value specified for the NFLOCKS tunable parameters against the recommended value listed below:

NFLOCKS (locks for entire operating system): 30 per user

After you get the relevant information, you can decide how to configure your system so that your operating system and Thoroughbred Basic can support more users.

`c_lcks: Warning: Not enough locks to fully support this BASIC`

Explanation**:** The **install** utility has determined that your operating system does not have enough system locks to reliably support Thoroughbred Basic. The **install** utility assumes that each user requires 30 locks, which is the recommended value for Thoroughbred Basic.

If you don't have enough system locks, Thoroughbred Basic will run but it will generate Error 0 messages.

Action**:** Check your system: if your system is not clear of other tasks and users, some other processes may be using the locks. You can also check the value specified for the NFLOCKS tunable parameters against the recommended value listed below:

NFLOCKS (locks for entire operating system): 30 per user

After you get the relevant information, you can decide how to configure your system so that your operating system and Thoroughbred Basic can support more users.

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`c_lcks: We were able to create x locks, this should support y users`

Explanation**:** The **install** utility displayed the number of system locks it could create and the number of users your operating system can manage with that number of locks:

x is the number of locks.
y is the number of users Thoroughbred Basic can support.

The **install** utility assumes that each user requires 30 locks, which is the recommended value for Thoroughbred Basic.

Action**:** If the numbers *x* and *y* seem low, check your system. If your system is not clear of other tasks and users, some other processes may be using the locks.

You can also check the value specified for the NFLOCKS tunable parameters against the recommended value listed below:

NFLOCKS (locks for entire operating system): 30 per user

After you get the relevant information, you can decide how to configure your system so that your operating system and Thoroughbred Basic can support more users.

`c_mlck: Advisory Locking in effect`

Explanation**:** The **install** utility determined that your operating system can support advisory file locking.

Action**:** Because this is an informative message no action is required. For more information on advisory locking, please refer to the description of the PRM READONLY statement in the Thoroughbred Basic Customization and Tuning Guide.

`c_mlck: Mandatory locking in effect`

Explanation**:** The **install** utility determined that your operating system can support mandatory file locking.

Action**:** Because this is an informative message no action is required. For more information on mandatory locking, please refer to the description of the PRM READONLY statement in the Thoroughbred Basic Customization and Tuning Guide.

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`c_mlck: Unable to fork`

Explanation**:** The **install** utility could not create a child process to test mandatory or advisory locking procedures. If this condition persists, Thoroughbred Basic cannot run on your system.

Action**:** Check your system: if your system is not clear of other tasks and users, some other processes may be using too many system locks. You can also check the value specified for the NFLOCKS tunable parameters against the recommended value listed below:

NFLOCKS (locks for entire operating system): 30 per user

If your system has too few system locks, specify a new value for NFLOCKS before you try to reuse the **install** utility. If your system has enough system locks, reuse the **install** utility and take notes on what procedures you follow, what messages are displayed, and so on.

If the error recurs, please write down the Thoroughbred Basic software serial number, your operating system, how your system is configured, the actions you took that preceded the error, the error message, and all other relevant information. Please report this problem to your Thoroughbred dealer.

`c_mlck: Unable to lock test record`

Explanation**:** The **install** utility could not secure a lock on a file to test mandatory or advisory file locking. If this condition persists, Thoroughbred Basic cannot run on your system.

Action**:** Check your system: if your system is not clear of other tasks and users, some other processes may be using too many system locks. You can also check the value specified for the NFLOCKS tunable parameters against the recommended value listed below:

NFLOCKS (locks for entire operating system): 30 per user

If your system has too few system locks, specify a new value for NFLOCKS before you try to reuse the **install** utility. If your system has enough system locks, reuse the **install** utility and take notes on what procedures you follow, what messages are displayed, and so on.

If the error recurs, please write down the Thoroughbred Basic software serial number, your operating system, how your system is configured, the actions you took that preceded the error, the error message, and all other relevant information. Please report this problem to your Thoroughbred dealer.

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`c_use: Cannot determine user/validity count`

Explanation**:** The **install** utility could not determine just how many users Thoroughbred Basic can support on this system.

Action**:** Leave the **install** utility, return to the operating system prompt in the Thoroughbred Basic home directory, and enter install **-**e or install **-**w. Take notes on what procedures you follow, what messages are displayed, and so on.

If the error recurs, please write down the Thoroughbred Basic software serial number, your operating system, how your system is configured, the actions you took that preceded the error, the error message, and all other relevant information. Please report this problem to your Thoroughbred dealer.

`c_use: ok status`

Explanation**:** The **install** utility reported positive results for internal diagnostic tests.

Action**:** Because this is an informative message, no action is required.

`c_use: Unable to fork`

Explanation**:** The **install** utility could not create a child process to test mandatory or advisory locking procedures. If this condition persists, Thoroughbred Basic cannot run on your system.

Action**:** Check your system: if your system is not clear of other tasks and users, some other processes may be using too many system locks. You can also check the value specified for the NFLOCKS tunable parameters against the recommended value listed below:

NFLOCKS (locks for entire operating system): 30 per user

If your system has too few system locks, specify a new value for NFLOCKS before you try to reuse the **install** utility. If your system has enough system locks, reuse the **install** utility and take notes on what procedures you follow, what messages are displayed, and so on.

If the error recurs, please write down the Thoroughbred Basic software serial number, your operating system, how your system is configured, the actions you took that preceded the error, the error message, and all other relevant information. Please report this problem to your Thoroughbred dealer.

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```
c_use: Unable to lock test record
```

Explanation**:** The **install** utility could not secure a lock on a file to test mandatory or advisory file locking. If this condition persists, Thoroughbred Basic cannot run on your system.

Action**:** Check your system: if your system is not clear of other tasks and users, some other processes may be using too many system locks. You can also check the value specified for the NFLOCKS tunable parameters against the recommended value listed below:

NFLOCKS (locks for entire operating system): 30 per user

If your system has too few system locks, specify a new value for NFLOCKS before you try to reuse the **install** utility. If your system has enough system locks, reuse the **install** utility and take notes on what procedures you follow, what messages are displayed, and so on.

If the error recurs, please write down the Thoroughbred Basic software serial number, your operating system, how your system is configured, the actions you took that preceded the error, the error message, and all other relevant information. Please report this problem to your Thoroughbred dealer.

```
ERROR occurred during installation. Installation must be done as root from a
      terminal.
```

Explanation**:** You did not log in as root before you installed or upgraded Thoroughbred Basic. The installation or upgrade is not valid and Thoroughbred Basic will not run.

Action**:** You can use the information in Installation and Upgrade Tasks, to perform a valid installation or upgrade.

```
ERROR: TERMINAL file cannot be opened. Contact your authorized Thoroughbred
      Dealer or Thoroughbred's Product Support department at: phone:
      (800)524-0430 or (732)560-1377.
```

Explanation**:** Thoroughbred Basic cannot read its TERMINAL file. The TERMINAL file contains specifications for the site terminals available to Thoroughbred Basic.

Action**:** The Thoroughbred Basic home directory contains the TERMINAL file. If the file exists make sure that the user who received this error message has the set of permissions needed to run Thoroughbred Basic.

If the file does not exist and you have a backup copy of the TERMINAL file, you can restore the file, check the sets of permissions for the TERMINAL file and the user, and try again. If you do not have a backup copy of the TERMINAL file you can use the information in **Installation and Upgrade Tasks** to reinstall Thoroughbred Basic.

If the error recurs, you can use the information in the Thoroughbred Basic Customization and Tuning Guide to check or recreate the TERMINAL file. If the TERMINAL file and the necessary permission sets are valid and you continue to receive this message, please write down the Thoroughbred Basic software serial number, your operating system, how your system is configured, the actions you took that preceded the error, the error message, and all other relevant information. Please report this problem to your Thoroughbred dealer.

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ERROR: TERMINAL file cannot be opened

Explanation**:** Thoroughbred Basic cannot read its TERMINAL file. The TERMINAL file contains specifications for the site terminals available to Thoroughbred Basic.

Action**:** In most cases, this message is the result of a permissions violation.

Make sure that the user who received this error message has the set of permissions needed to run Thoroughbred Basic. If the set of permissions is valid and you have a backup copy of the TERMINAL file, you can restore the file, check the sets of permissions for the TERMINAL file and the user, and try again. If you do not have a backup copy of the TERMINAL file you can use the information in the Thoroughbred Basic Customization and Tuning Guide to create a TERMINAL file. As a last resort, you can use the information in **Installation and Upgrade Tasks** to reinstall Thoroughbred Basic.

If the error recurs, you can use the information in the Thoroughbred Basic Customization and Tuning Guide to check the TERMINAL file. If you continue to receive this message, please write down the Thoroughbred Basic software serial number, your operating system, how your system is configured, the actions you took that preceded the error, the error message, and all other relevant information. Please report this problem to your Thoroughbred dealer.

ERROR: TERMINAL FILE IS NOT PRESENT

Explanation**:** Thoroughbred Basic cannot read its TERMINAL file. The TERMINAL file contains specifications for the site terminals available to Thoroughbred Basic.

Action**:** The Thoroughbred Basic home directory contains the TERMINAL file. If the file exists make sure that the user who received this error message has the set of permissions needed to run Thoroughbred Basic.

If the file does not exist and you have a backup copy of the TERMINAL file, you can restore the file, check the sets of permissions for the TERMINAL file and the user, and try again. If you do not have a backup copy of the TERMINAL file you can use the information in the Thoroughbred Basic Customization and Tuning Guide to create a TERMINAL file. As a last resort, you can use the information in **Installation and Upgrade Tasks** to reinstall Thoroughbred Basic.

If the error recurs, you can use the information in the Thoroughbred Basic Customization and Tuning Guide to check or recreate the TERMINAL file. If the TERMINAL file and the necessary permission sets are valid and you continue to receive this message, please write down the Thoroughbred Basic software serial number, your operating system, how your system is configured, the actions you took that preceded the error, the error message, and all other relevant information. Please report this problem to your Thoroughbred dealer.

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```
ERROR: TERMINAL file specifies too many terminals. Remove extra terminal
       specifications from file.
```

Explanation**:** The TERMINAL file contains too many terminal definitions. You can specify up to 930 terminals in the TERMINAL file.

Action**:** The TERMINAL file is located in the Thoroughbred Basic home directory. You can use the information in **Establish your system console** or the Thoroughbred Basic Customization and Tuning Guide to remove unnecessary terminal specifications from this file. Make sure the TERMINAL file contains no more than 930 terminal definitions before you run Thoroughbred Basic

```
ERROR: This terminal is not defined in TERMINAL file
```

Explanation**:** You tried to run Thoroughbred Basic on a terminal that is not defined in the TERMINAL file. Thoroughbred Basic cannot run on an undefined terminal.

Action**:** The TERMINAL file is located in the Thoroughbred Basic home directory. You can use the information in **Establish your system console** or the Thoroughbred Basic Customization and Tuning Guide to add relevant terminal specifications to this file. After you add a valid definition for the terminal you can run Thoroughbred Basic on that terminal.

```
ERROR: This terminal is not defined in TERMINAL file. This terminal cannot be
       used to execute BASIC since it is not listed in the TERMINAL file. The
       file must be modified if you wish to run BASIC from this terminal.
```

Explanation**:** You tried to run Thoroughbred Basic on a terminal that is not defined in the TERMINAL file. Thoroughbred Basic cannot run on an undefined terminal.

Action**:** The TERMINAL file is located in the Thoroughbred Basic home directory. You can use the information in **Establish your system console** or the Thoroughbred Basic Customization and Tuning Guide to add relevant terminal specifications to this file. After you add a valid definition for the terminal you can run Thoroughbred Basic on that terminal.

```
ERROR: Too many users running Basic.
```

Explanation**:** Only a certain number of users can concurrently run Thoroughbred Basic. When that limit is reached you cannot log on. For example, if your site has an eight-user version of Thoroughbred Basic and eight users are running the program, a ninth user will not be able to log on to Thoroughbred Basic.

Action**:** After another user stops running Thoroughbred Basic you can log on to the program. If this problem persists you may want to purchase an upgrade to increase the maximum number of users who can simultaneously run Thoroughbred Basic.

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