Installation and Configuration Guide

for UNIX

Informix Red Brick Decision Server

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Determining the Locale

During the installation process, you will be asked to specify a locale. A locale is the unique combination of a language and a location. The locale you specify will apply to all databases created for this installation.

For more information about locale speciÞcations, refer to the AdministratorÕs Guide

Locale Components

A locale consists of the following four components:

- Language
- Territory
- Code page
- Collation sequence

Each component is described brießy in the following sections.

Language

The language component, in conjunction with the territory, controls which translation is used. In general, text strings are accepted and displayed in the userÕs chosen language. These strings include information and warning messages, object names, month and day names, and character data returned in query results. However, the Þxed elements of a programming language, such as the keywords used in SQL statements, are not translated.

Territory

The territory component controls country-dependent information such as currency symbols, numeric and monetary formatting rules, and date and time formats. For example, although English is used in both the United States and the United Kingdom, and Spanish is used in both Spain and Mexico, the use of these languages differs according to location. (Sometimes, a single territory applies to more than one country in a region.)

Code Page

The code page component specifies the character encoding or code page used to format and display information.

Collation Sequence

The sort component of the locale, or collation sequence, defines the rules used to compare character strings and arrange them in the correct order. The two main types of character comparisons are binary and linguistic.

Defining the Locale

During the installation of the Red Brick Decision Server software, a locale specification is requested for the data warehouse. The locale supplied during installation is stored as the NLS_LOCALE LOCALE parameter in the rbw.config file. If no locale is supplied, the default value of this parameter is used:

```
English_UnitedStates.US-ASCII@Binary
```

This locale specification applies to the whole Red Brick Decision Server installation, regardless of the number of databases that will be created for that installation. (An installation is defined by the contents of the rbw.config file in the directory referenced by the RB_CONFIG environment variable.)

To specify a locale that is different from the default locale specification, you must define each of its four components—language, territory, code page, and collation sequence. Refer to Appendix B for a list of locale specifications that Red Brick Decision Server supports. Record your locale specification in the following table.

Locale specification (English_UnitedStates.US-ASCII@Binary BY DEFAULT):

Language:

Territory:

Code page:

Collation sequence:

Selecting a Warehouse Logical Name

The default for the warehouse logical name is the literal name RB_HOST. This name corresponds to the IPC key (SHMEM) in the rbw.configfile. For a full description of the rbw.configfile, refer to the Administrator's Guide.

For standard installations, the installation script provides a default value for the warehouse logical name (RB_HOST). If you are planning to run two versions (for example, Version 5.1 and Version 6.0) simultaneously or if you want to use a name that is different from the default value, record a different warehouse logical name in the following table.

Logical name of daemon (RB_HOST by default):

Selecting an IPC Key for the Daemon

Red Brick Decision Server uses a shared memory segment for interprocess communication. During the installation process, you must supply an interprocess communication (IPC) key value for Red Brick Decision Server to use for its shared memory communication.

The Red Brick Decision Server daemon allocates IPC resources based on the IPC key value, which is supplied by the user for the RB_HOST SHMEM entry in the rbw.conÞgÞle during the installation process. This value allocates additional IPC resources for each additional server that will be supported by the daemon, as speciÞed by the MAX_SERVERS entry in the rbw.conÞgÞle. The IPC key value has two requirements:

- The number must be different from any other IPC key value so that Red Brick Decision Server processes do not conßict with other processes.

Important: When running two versions of Red Brick Decision Server simultaneously for new-release testing purposes, you must use unique IPC key values for each version.

- The number forms the base for a list of IPC entries in the shared memory environment. This list must allow at least as many entries as the maximum number of users who will have concurrent access to the warehouse. (This value includes concurrent Web users.) Therefore, select an IPC key that allows at least that many free IPC slots before the next reserved entry.

Suppose MAX_SERVERS is set to 50, and 100 is speciÞed as the base IPC key:

```
RBWAPI MAX_SERVERS 50
RBW_HOST1 SHMEM 100
```

Then any additional IPC key values speciÞed must be greater than 100 by at least 32 (50 in decimal is 32 in hexadecimal). For example, a new IPC key value of 120 might result in a resource conßict, while a value of 140 would provide sufÞcient range between the IPC keys to accommodate the speciÞed MAX_SERVERS value:

```
RBW_HOST2 SHMEM 140
```

You can examine the current shared memory settings and IPC configuration using the operating-system ipcs command. For most system environments, the default value of 0x100 (hexadecimal) is an appropriate selection.

Record the selected IPC key here for use during installation; the installation procedure requires that you specify this value with a hexadecimal number:

Base IPC Key (base 16 integer):

Example

The daemon logical name and IPC key value that you specify during the installation procedure are stored in the rbw.config file as follows:

```
# The following is used for IPC key values. Note that for shared memory
# and semaphores, the key values will range from the IPC key number to
# IPC key + MAX_SERVERS.
#
RB_HOST SHMEM 100
#
É
```

Daemon logical name IPC key value

For more information about the rbw.config file, refer to the Administrator's Guide

Determining the TCP/IP Ports

The Red Brick Decision Server installation process prompts you for a base TCP/IP port number. The daemon uses this base port and the next consecutively numbered port for its network connection. For example, if you specify port 5050, the daemon uses 5050 and 5051.

To determine the base port number:

1. Ensure that the operating-system command netstat is in your path (typically /usr/etc/netstat).
2. Determine whether the default Red Brick Decision Server daemon TCP/IP ports are in use:

   ```
   $ netstat -an | egrep '5050|5051'
   ```

   The system responds with a list of information about the default ports, if any.

   If the system returns no information, the default ports (5050, 5051) are not currently in use and can be used for this Red Brick Decision Server daemon configuration. If information is returned, at least one of the ports is in use, and you must select another base port. For information about using the netstat command to display a list of available ports, refer to your operating-system documentation.

Important: The netstat command lists only those ports currently in use; it does not list ports used by processes that are not currently active. If you are uncertain about obtaining a unique number, ask your system administrator for advice.

Use the default ports, if they are not already in use. Otherwise, use a base number between 2048 and 65535 that is not being used. Because numbers between 1024 and 2048 are commonly used for standard system ports, Red Brick Decision Server installation and configuration utilities do not accept values below 2048. Use a number above 4098 to minimize the chance of conflict.

If you plan to run two versions of Red Brick Decision Server simultaneously, you must specify a different base port number for each one.

3. Record your Red Brick Decision Server daemon base port in the following table.

Red Brick Warehouse Daemon base port:

Creating the redbrick Account

Before you begin installing Red Brick Decision Server, you must create a user account to be used for installation and all subsequent database administration activity. This account is also used as the effective execution user ID for warehouse server processes (bwsvr), and all database files and directories are owned exclusively by this user. The default name for this account is redbrick, although you can choose any name. Throughout the Red Brick Decision Server documentation, this user account is referred to as redbrick, and this user ID is used for all administration activities at the operating-system level.

As a superuser, create the redbrick account using the appropriate system management tool, depending upon your platform. The following table lists the system management tools for each platform; for more information about each tool, refer to your operating-system documentation or online reference pages.

Platform	System Management Tool
AIX	AIX System Management Interface Tool (SMIT)
Digital UNIX	Digital UNIX adduser script
HP-UX	System Administration Manager tool (SAM)
NCR UNIX SVR4 MP-RAS	NCR UNIX SVR4 MP-RAS sysadm tool

(1 of 2)

Platform	System Management Tool
DYNIX/ptx	ptx/ADMIN tool
Solaris	Solaris Administration Tool
Silicon Graphics IRIX	Graphical system manager tool

(2 of 2)

You do not need to create additional operating-system user accounts if all users of the data warehouse will connect via client tools. However, if the warehouse will be accessed by local users via the RISQL Entry Tool or RISQL Reporter, you need to create accounts that give those users login access to the system. Also, you must provide database access for all Red Brick Decision Server users (whether they connect via client tools or the RISQL tools) by using the SQL GRANT authorization command. For details, refer to the Administrator's Guide

Tip: Users connecting to a Red Brick Decision Server database via RISQL Entry Tool or RISQL Reporter running on a remote system do not need operating-system user accounts.

Access to the redbrick Account

To ensure that files created by the redbrick user have the correct access, make sure that umask for this account is set to 077. Look for the following line at the end of both the .cshrc and .profile files for the redbrick user:

```
umask 077
```

If this line is not present in both files, enter it as shown previously. This umask setting provides the following file access for the redbrick user:

```
redbrick:       rwx   (read, write, execute)
group:           ---   (none)
other:           ---   (none)
```

Creating the redbrick Directory

The redbrickuser must have read, write, and execute access to the directory where the warehouse software will be installed. Throughout this document, this directory is referred to as the redbrickdirectory (redbrick_dirin examples), although you can name it whatever you choose.

Create this directory in the Þle system where you have decided to install the warehouse software. In most cases, this directory is the home directory for the redbrickuser created in the previous section.

Providing License Keys

Red Brick Decision Server requires that you provide a valid license key before you start the daemon. In addition, if you purchased optional Informix Red Brick products (for example, the Vista option), you must enable these products with license keys before using them.

The menu-driven installation script provides an interface for entering license keys directly into the Red Brick Decision Server conÞguration Þle. This procedure is described in Chapter 2, ÒInstalling Informix Red Brick Decision Server.Ó A license key for a licensed option is provided on a one-page document that is delivered with Red Brick Decision Server when an optional product is purchased.

Choosing an Installation Procedure

If you are installing Red Brick Decision Server for the Þrst time, you are ready to begin the installation procedure described in Chapter 2, ÒInstalling Informix Red Brick Decision Server.Ó

If you already have Red Brick Decision Server and want to install and work with a new version of the software before converting your existing databases to that new version, refer to Chapter 3, ÒInstalling a New Release.Ó

Checklist of Preparation Steps

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7.	Select an IPC key for the daemon.	1-13
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9.	As a superuser, create the redbrick account and verify Þle access for the redbrick user (umask 077 should appear in the .cshrc and .proÞleÞles).	1-16
10.	Create the redbrick directory in the Þle system where you will install the software.	1-17
11.	Have your license keys ready; one for each product or option you have purchased is provided in a separate document delivered with the CD-ROM.	1-18
12.	Go to Chapter 2, ÒInstalling Informix Red Brick Decision ServerÓ or Chapter 3, ÒInstalling a New ReleaseÓ for installation instructions: n First-time warehouseÑ Chapter 2 n Existing warehouseÑ Chapter 2 and Chapter 3	

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2

Installing Informix Red Brick Decision Server

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In This Chapter

This chapter explains how to install Red Brick Decision Server or Red Brick Decision Server for Workgroups. The procedures in this chapter apply to both products unless otherwise stated. The installation procedure installs the software, as well as a sample database named Aroma, a utility directory named util , and all optional Informix Red Brick products. As part of the installation procedure, you also must enable the license keys for Red Brick Decision Server and any optional products you purchased.

The installation procedure uses a script named INSTALL.ISO which displays a menu of installation options. You can use the script to perform any of the following tasks:

- Install a full-feature or maintenance release of Red Brick Decision Server.
- Install a partial update, or "patch" release.
- Enable optional Informix Red Brick products with a license key.

For more information about installing an update release, refer to the release notes distributed with your update release CD-ROM and Chapter 3, "Installing a New Release."

Red Brick Decision Server installation is typically done by the system or database administrator and should be done from the redbrickuser account.

Before You Begin

Read the release notes delivered with the software and complete the preinstallation tasks described in Chapter 1, ÒPreparing for Installation.Ó

The procedures described in the following sections describe the basic installation process for Red Brick Decision Server. If you plan to run two concurrent releases of Red Brick Decision Server or if you are replacing the current release with a new release, refer toChapter 3, ÒInstalling a New ReleaseÓfor additional information.

The following conditions will prevent you from successfully installing the software:

- Incorrect user privileges
- Insufficient disk space
- Media failure (damaged CD-ROM)

If you see an error message during installation, make sure you have read/write privileges on the redbrickdirectory and that you have sufficient disk space for the warehouse software. For more information about system requirements, refer to ÒVerifying Operating-System Version and Disk SpaceÓ on page 1-6.

If you are still unable to install the warehouse and the sample database, or if the CD-ROM is damaged, contact Informix Customer Support as described in ÒCustomer SupportÓ on page 1-0

Preview of Installation Tasks

To install Red Brick Decision Server, perform the following tasks:

- As the superuser, mount the CD-ROM device.
- Log in as the redbrickuser and change to the directory where you want to install the Red Brick Decision Server software. If you are installing a new release of Red Brick Decision Server, you must use a directory other than the existing redbrickdirectory.
- Run the installation script, responding to the prompts as required.
- Enable Red Brick Decision Server with a valid license key.
- Enable additional products or options with valid license keys, if applicable.
- As the redbrickuser, start the daemon processesrbwapid, rbwadmd, and rbwlogd).
- As the redbrickuser, run the verification script to verify your Red Brick Decision Server software installation.
- If you are installing a new release of Red Brick Decision Server, follow the additional instructions in Chapter 3, ÒInstalling a New Release.Ó Chapter 3contains information about running two releases of Red Brick Decision Server, replacing an existing warehouse with a new release, upgrading databases, and migrating users to a new release.

Mounting and Unmounting the CD-ROM Device

This section describes the procedure for mounting and unmounting your CD-ROM device. You must be the superuser to mount and unmount the CD-ROM. To install Red Brick Decision Server, you must first mount the CD-ROM for your platform. When you have completed the installation, you can unmount the CD-ROM for other uses.

Important: If you need additional information about mounting your CD-ROM device, refer to your operating-system documentation.

Mounting the CD-ROM Device

Use the appropriate mount command, depending on your platform, to mount your CD-ROM device where *device_name* is the name of your CD-ROM device, and */cdrom* is an existing directory where you want to mount the device, as the following table shows.

Platform	Mount Command
AIX	$ /etc/mount -v cdrfs -o ro device_name /cdrom
Digital UNIX	$ /usr/sbin/mount -t cdfs -o noversion device_name /cdrom
HP-UX 10.0	$ /usr/sbin/mount -F cdfs -o cdcase device_name /cdrom
Solaris	No mount command is needed; mounting occurs automatically when the CD-ROM is inserted into the device. The Logical Volume Manager must be running.
Silicon Graphics IRIX	$ /usr/etc/mediad -r device_name $ /sbin/mount -t iso9660 -o notranslate device_name /CDROM
DYNIX/ptx	$ /etc/mount -f cdfs -o toupper /dev/dsk/cd0 /cdrom
NCR UNIX SVR4 MP-RAS	$ /etc/mount -F cdfs device_name /cdrom

Unmounting the CD-ROM Device

To unmount your CD-ROM device, use the appropriate command for your platform from the following table, where device_name is the name of your CD-ROM device.

Platform	Unmount Command
AIX	umount device_name
Digital UNIX	/usr/sbin/umount device_name
HP-UX 10.0	/usr/sbin/umount device_name
Solaris	eject cdrom
Silicon Graphics IRIX	umount device_name
DYNIX/ptx	umount /cdrom
NCR UNIX SVR4 MP-RAS	umount /cdrom

Running the Installation Script

To install Red Brick Decision Server, use the script named INSTALL.ISO. This script contains a menu interface that calls the supporting installation files during the installation. Run the same script from the CD-ROM device to install either Red Brick Decision Server or Red Brick Decision Server for Workgroups. You can run this script as any user; however, that user will be the owner of the database and executable files, referred to throughout the Red Brick Decision Server documentation as theredbrickuser.

Starting the Installation

Start the installation process by entering:

```
$ cd redbrick_dir
$ /cdrom/platform_name/INSTALL.ISO
```

Always include the full pathname for the INSTALL.ISO script. In this example, redbrick_diris the directory in which you want to install Red Brick Decision Server; /cdromis the directory where your CD-ROM device is mounted; and platform_nameis the appropriate platform from the following table.

Platform	platform_name
AIX	aix, aix64
Digital UNIX	dec
HP-UX	hpx, hpx64
NCR UNIX SVR4 MP-RAS	NCR
DYNIX/ptx	PTX
Solaris	sol, sol64
Silicon Graphics IRIX	sgi

The aix64, hpx64, and sol64names specify the 64-bit version of Red Brick Decision Server. When you use a 64-bit machine and run a 64-bit version of the operating system, you can choose either version of Red Brick Decision Server; otherwise, you must use a 32-bit version of the server.

For example, if your platform is HP-UX, enter:

```
$ /cdrom/hpx/INSTALL.ISO
```

If your platform is Silicon Graphics IRIX, enter:

```
$ /cdrom/sgi/INSTALL.ISO
```

The command is case sensitive.

The main Red Brick Decision Server Installation Menu is displayed.

```
############################################################
#                                    #
#           Red Brick Installation Menu          #
#                                    #
############################################################
     1. Install Full or Maintenance Release
     2. Install Update Release
     3. Install Client Connectivity Products
     4. Enable Red Brick Products
          Enter "q" to quit.
Enter item number and press Return. >
```

To install a full or maintenance release, type 1 and press RETURN. The following output is displayed.

```
Installation Script for Red Brick Warehouse
(C) Copyright 1991-1999 Informix Software, Inc.
All rights reserved.
Starting installation on Fri Sep 17 10:05:32 PDT 1999.
Current directory is          redbrick_dir     .
```

From this point on, the installation script prompts you for information and takes the necessary actions as you respond.

Default values appear in brackets ([ ]) throughout the installation procedure. To use a default value, press RETURN. To use another value, type that value and press RETURN.

Tip: If you have not logged in as the recommended default user redbrick, the installation script displays the following warning:

```
You are not logged in with the recommended default user
'redbrick.' You may continue, but all future UNIX
administration tasks for this installation must be done as
user <  username >.
Continue? (y|n) [n]:
```

You can choose to continue the installation using the user name specified in the message, or stop the installation, log in as the redbrick user, and restart the installation.

Stopping the Installation

You can stop the installation and return to the main installation menu at any time by entering the interrupt key, which is CONTROL-C on most systems.

You can then type q to quit the installation script and return to the operating-system prompt. If you stop the installation, the Þles that have already been installed are not removed automatically; you must remove them manually before you run the installation script again.

Specifying the Warehouse Directory

The installation script asks you to verify that you want the warehouse software to be installed in the current directory:

1. Install Red Brick Warehouse in current directory? (y|n) [y]:

To install Red Brick Decision Server in the directory shown (the current directory), press RETURN.

Important: If you are installing a new release of Red Brick Decision Server, make sure that new_redbrick_dir is different from the production redbrick directory and is not a subdirectory of that directory.

If the directory name is not correct, stop the installation by entering CONTROL-C, type q to quit the installation script, and return to the operating-system prompt, change to the correct directory, and begin the procedure again.

Typing n allows you to bypass this prompt so you can use the INSTALL.ISO script just to install the administration database or the sample Aroma database.

The installation script displays the following prompt.

```
If you are installing a maintenance release of Red Brick
Warehouse the installation can use some of the information
used by the existing installation to help with this new
installation.
Is there a previous installation of Red Brick Warehouse on
this machine? (y|n) [n]:
```

Important: If you are installing Red Brick Decision Server in a directory that already contains anrbw.conÞg Þle, this prompt does not appear.

If you are installing a new release of Red Brick Decision Server, typey and press RETURN. The script displays the following message.

```
Enter the directory where the current Red Brick Warehouse
is installed:
```

Type the full pathname of the directory where the software for the current Red Brick Decision Server is installed and press RETURN.

Specifying the Locale

The installation script asks you to supply a locale for the installation.

```
Specify a locale for this warehouse installation; this locale will apply to
all databases created for this installation.
Do you want to use the following default locale?
English_UnitedStates.US_ASCII@Binary (y|n) [y]:
```

To use the default locale, press RETURN. If you speciÞed a different locale in the section ÒDeÞning the LocaleÓ on page 1-11, type n and press RETURN.

Specifying the Language

If you choose not to use the default locale for the installation, the script asks you to supply a language.

```
    1) English
    2) German
    3) French
    4) ...
Enter the number of the language component to use [1]:
```

The list contains the names of all the languages that are supported by Red Brick Decision Server.

To select the default language, English, press RETURN. To select another language, type the number of the language and press RETURN.

Specifying the Territory

The installation script asks you to specify a territory for the installation. The recommended territories for the language you choose are shown; for example, if you choose Japanese, the prompt displays the following choices.

```
The supported territories for the language Japanese are:
      1) Japan
Enter the number of the territory component to use [1]:
```

Type the number of the territory and press RETURN.

Specifying the Code Page

The installation script asks you to specify a code page. The recommended code pages for the language you choose are shown; for example, if you choose Japanese, the prompt displays the following choices.

```
The supported code pages for the language Japanese are:
      1) JapanEUC
      2) MS932
      3) UTF-8
Enter the number of the code page component to use [1]:
```

Specifying the Sort Component

The installation script asks you to specify a sort component. The recommended sort components for the language you choose are shown; for example, if you choose Japanese, the prompt displays the following choices.

```
The supported sort components for the language Japanese are:
      1) Binary
Enter the number of the sort component to use [1]:
```

Verifying the Locale Specification

After you supply the locale specification (either by choosing the default specification or by selecting components from the displayed lists), the script displays your choices and asks you to verify them. For example, if you choose Japanese as your language, Japan as your territory, IBM-932 as your code page, and Binary as your sort component, the script displays the following prompt that displays your selection.

```
Language: Japanese
Territory: Japan
Code page: JapanEUC
Sort: Binary
These components correspond to the following locale:
Japanese_Japan.JapanEUC@Binary
Do you want to change this specification? (y|n) [n]:
```

If you do not want to change the specification, press RETURN. If you do want to change the specification, enter y. The script then prompts you for the language, territory, code page, and sort component again.

Installing the Administration Database

The installation script asks if you want to build the administration database. An administrator can use this database to monitor and control multiple databases across an enterprise.

```
2.  Would you like to build an administration database? (y|n)
    [y]:
```

For detailed information about the uses of this database, refer to the Administrator's Guide

Installing the Sample Database

The installation script asks if you want to install the sample database Þles.

```
3.  To verify the installation, you must install the sample
    database (Aroma). Install the sample database? (y|n) [y]:
```

The installation veriÞcation procedure requires the sample database named Aroma, which is also used extensively in the examples provided in Red Brick Decision Server documentation. Therefore, most sites should install the sample database. The Aroma scripts, data, and database require approximately 16 megabytes of disk space and can be removed later if they are no longer needed. This database does not count against the two-database limit for Red Brick Decision Server for Workgroups.

To install the sample database Þles, press RETURN. If you do not want to install the sample database Þles, type n and press RETURN.

Providing IPC Key and User Information

The installation script asks you for the logical name of the IPC key that the Red Brick Decision Server daemon will support.

```
4.  Enter the logical name of the base IPC key to be supported
    by the Red Brick Warehouse daemon [RB_HOST]:
```

To use the default logical name (RB_HOST), press RETURN. Alternatively, type the name you recorded in the section ÒSelecting a Warehouse Logical NameÓ on page 1-12 and press RETURN.

Providing the IPC Key Number

The installation script asks you to specify the IPC key number, which forms the base for a list of IPC entries in the shared memory environment.

If you are installing a new release and you intend to run two releases of Red Brick Decision Server simultaneously during the test period, choose a different IPC key from the one used for your existing installation. The new key must be different from other reserved IPC keys and must allow at least as many entries as the maximum number of concurrent warehouse users, including concurrent Web users.

```
5.  Enter the base IPC key used for shared memory
    (base sixteen integer) to be used by the Red Brick
    Warehouse daemon [100]:
```

Specifying the Base TCP/IP Port for the Daemon

The installation script asks for the base TCP/IP port to be used to connect to the Red Brick Decision Server daemon.

```
7.  Enter the TCP/IP port number used to connect to the Red Brick
    Warehouse daemon [5050]:
```

Informix recommends using the default port (5050) for the Red Brick Decision Server daemon. To use the default port, press RETURN. The daemon uses the default port and the next consecutively numbered port, for example, 5050 and 5051. Alternatively, type the number you recorded in ÒDetermining the TCP/IP PortsÓ on page 1-15 and press RETURN.

If you are installing a new release, you must use a set of ports other than the one you used for your existing installation. For example, use 5052 and 5053.

Specifying the Maximum Number of Servers

Enter the maximum number of servers, one server per user for which the warehouse is licensed. This value includes Web users.

```
8.  Enter the maximum number of servers (base ten integer)
     to be supported by the Red Brick Warehouse daemon [50]:
```

To use the default number (50), press RETURN.

The installation script now builds directories, copies files, sets permissions, builds the rbw.config configuration file, and installs Red Brick Decision Server, the sample database, and the utility files.

Finishing the First Phase of Installation

You have completed the user-input phase of the installation process. The installation script now uses the information you supplied to create and configure Red Brick Decision Server files and scripts. For a description of these files, refer to Appendix A, "Warehouse Directories and Files."

When the Red Brick Decision Server installation is complete, the script returns a message such as the following one:

```
To start the Red Brick Warehouse daemon, the redbrick user must issue the
following command:
redbrick_dir /bin/rbw.start redbrick_dir RB_HOST

Installation completed successfully on Fri September 17 10:12:40 PDT 1999.

You must enable Red Brick Warehouse with a license key before
proceeding. Select option #4 in the Red Brick Warehouse Installation Menu to
enable Red Brick products.
Press Return to display the Red Brick Installation Menu.
```

When the installation process is finished, the installation script adds execute permissions for group and others to the Red Brick Decision Server directories. These permissions allow third-party applications to access the interfaces file as needed.

You must now enable Red Brick Decision Server with a license key. Press RETURN to display the main installation menu.

Enabling Red Brick Decision Server and Optional Products

Before you can use Red Brick Decision Server, you must enable it by providing a license key, which is entered into the rbw.conf file by the installation script. Option 4 of the Red Brick Installation Menu allows you to enable Red Brick Decision Server and any options that you purchased.

Important: The Red Brick Installation Menu should be displayed as shown below. If it is not, refer to the instructions in the section "Running the Installation Script" on page 2-7 to display it.

```
############################################################
#                                  #
#           Red Brick Installation Menu         #
#                                  #
############################################################
     1.  Install Full or Maintenance Release
     2.  Install Update Release
     3.  Install Client Connectivity Products
     4.  Enable Red Brick Products
     Enter "q" to quit.
Enter item number and press Return. >
```

Type 4 and press RETURN. You will see the following prompt.

```
     1.  Enable Red Brick Warehouse Products
     2.  Enable Red Brick Warehouse for Workgroups Products
     Enter item number and press Return. >
```

Type 1 or 2, as appropriate, and then press RETURN. One of two different menus of products and options is displayed, depending on your choice.

Product Licenses for Red Brick

If you select option 1, Enable Red Brick Products, a list similar to the following is displayed. The list shows the product license options for Red Brick Decision Server.

```
   ################################################################
#                                  #
#          Red Brick Product License           #
#                                  #
################################################################


          1. RED_BRICK_WAREHOUSE
          2. RED_BRICK_WAREHOUSE_10
          3. RED_BRICK_WAREHOUSE_25
          4. RED_BRICK_WAREHOUSE_50
          5. RED_BRICK_WAREHOUSE_75
          6. RED_BRICK_WAREHOUSE_100
          7. RED_BRICK_WAREHOUSE_150
          8. RED_BRICK_WAREHOUSE_200
          9. RED_BRICK_WAREHOUSE_250
          10. RED_BRICK_WAREHOUSE_500
          11. PTMU_OPTION
          12. BACKUP_RESTORE
          13. AUTO_AGGREGATE
          14. RED_BRICK_DATA_MINE
          15. RED_BRICK_VISTA
          16. WEB_CONNECTIONS

           Enter "q" to quit.


  Enter item number and press Return. >
```

Product Licenses for Web Connections

If you select item 16 from the Red Brick Products list above, the installation program returns the following list.

```
#################################################################
#                                 #
#          Enable Web Connection License          #
#                                 #
#################################################################

          1. WEB_CONNECTIONS_5
          2. WEB_CONNECTIONS_10
          3. WEB_CONNECTIONS_20
          4. WEB_CONNECTIONS_30
          5. WEB_CONNECTIONS_50
          6. WEB_CONNECTIONS_75
          7. WEB_CONNECTIONS_100
          8. WEB_CONNECTIONS_150
          9. WEB_CONNECTIONS_250
          10. WEB_CONNECTIONS_500
          11. WEB_CONNECTIONS_UNLIMITED

           Enter "q" to quit.


  Enter item number and press Return. >
```

Product License for Red Brick Decision Server for Workgroups

If you select option 2, Enable Red Brick Decision Server for Workgroups Product, a list similar to the following one is displayed. The list shows the product license options for Red Brick Decision Server for Workgroups.

```
   ################################################################
#                                  #
#          Red Brick Product License           #
#                                  #
################################################################


      1. RED_BRICK_WAREHOUSE_FOR_WORKGROUPS_5
      2. RED_BRICK_WAREHOUSE_FOR_WORKGROUPS_10
      3. RED_BRICK_WAREHOUSE_FOR_WORKGROUPS_20
      4. RED_BRICK_WAREHOUSE_FOR_WORKGROUPS_30
      5. PTMU_OPTION
      6. BACKUP_RESTORE
      7. AUTO_AGGREGATE
      8. RED_BRICK_VISTA

      Enter "q" to quit.


  Enter item number and press Return. >
```

Entering License Keys

If you purchased Red Brick Decision Server, enter one of the RED_BRICK_WAREHOUSE license keys first (the option you select depends on the number of named users). If you purchased Red Brick Decision Server for Workgroups, enter one of its product license keys first (the option you select depends on the number of named users). Then repeat the procedure for any other products or options you purchased.

Tip: You can enable additional products and options at any time by running the rb_setup script located in the redbrick directory.

For example, to enable Red Brick Decision Server for Workgroups for a 20-user license, type the appropriate number (3 in the example list shown) and press RETURN.

The script prompts you for a license key.

```
Enter your license key for RED_BRICK_WAREHOUSE_FOR_WORKGROUPS_20
and press Return. >
```

Enter your license key (a string of characters, numbers, or both), as printed on the one-page document delivered with the software. Each product listed in the menu has a separate license key document. You must enter the key exactly as it appears in the document.

If you enter a valid license key, the system responds.

```
LICENSE_KEY RED_BRICK_WAREHOUSE_FOR_WORKGROUPS_20
license_string      entered in ./rbw.config
Press Return to continue.
```

The license key you provide is entered in the rbw.conÞgÞle by the installation script. If you enter the license key incorrectly, a message like this is displayed.

```
Key  license_string      not valid for RED_BRICK_WAREHOUSE_FOR_WORKGROUPS_20
Enter your license key for
RED_BRICK_WAREHOUSE_FOR_WORKGROUPS_20 and press Return. >
```

Re-enter the license key and press RETURN.

After you enter all the license keys for the products and options you purchased, type q to exit the Red Brick Product License menu, and type q again to exit the rb_setupscript. You can now start the Red Brick Decision Server daemon, as described in the following section.

Starting the Red Brick Decision Server Daemons

To run Red Brick Decision Server, you need to start the warehouse daemon process (rbwapid), which in turn starts the administration and log daemon processes (rbwadmdand rbwlogd). The warehouse, administration, and log daemons are described in the Administrator Õs Guide.

To start the daemons as a background task

1. To exit the installation menu, type q and press RETURN.
2. Log in as the redbrickuser.
3. To ensure that you are in the redbrickdirectory, enter:

   ```
   # cd  redbrick_dir
   ```

   redbrick_diris the full pathname of the directory containing the Red Brick Decision Server directories and Þles.
4. To start the daemons, type:

   ```
   # ./bin/rbw.start  config_path  RB_HOST_name
   ```

conÞg_path	Full pathname (beginning with /) to the directory containing the rbw.conÞgÞle. The installation procedure installs this Þle in the redbrickdirectory.
RB_HOST_name	Logical name for the warehouse daemon process. This value isRB_HOSTby default, but it can be any value that matches the value you speciÞed on page 2-14. This name corresponds to the name assigned to the IPC key (SHMEM) in the rbw.conÞgÞle.

   After the daemons have started successfully, a message reßecting your speciÞc installation parameters is returned to both the terminal where the rbw.start script was run and the rbwapid.logÞle.

Tip: The util directory, which is installed with Red Brick Decision Server, contains a utility named op that allows users to start Red Brick Decision Server daemons or to run other privileged scripts or programs without superuser (root) access. For more information about the op utility, refer to the README file in the directory redbrick_dir/util/op .

```
Red Brick Warehouse API Daemon Version 6.0.y(zzzz)
(C) Copyright 1991-1999 Informix Software, Inc.
All rights reserved

      Process Id          :13201
      Config File Directory :/          redbrick_dir
      Connection Name       :RB_HOST
      Port number                 :5050
      Base IPC key          :100
      Maximum Connections   :50
      Server Program Name   :/          redbrick_dir     /bin/rbwsvr
      Log File Name         :/          redbrick_dir     /rbwapid.log
      Log File Size         :1000
      Global Lock File Name :/          redbrick_dir     /.RB_HOST.lockfile
      Maximum Parallel Tasks:
        Across All Servers  :0
        Per Server          :0
```

5. To display the operating-system prompt, press RETURN.

Tip: Red Brick Decision Server provides administrative scripts that manually start, automatically start, and stop daemons. The rbw.show script returns information about a specific daemons identified by the RB_HOST environment variable. For more information about these scripts, refer to the appendix that corresponds to your platform.

Verifying the Red Brick Decision Server Installation

After the installation script runs and you have started the daemon processes, run the veriÞcation script to verify that Red Brick Decision Server was installed correctly.

To verify the installation, change to the redbrickdirectory and enter:

```
$ ./bin/rbw.verify config_path RB_HOST_name
```

where:

conÞg_path	Full pathname (beginning with /) to the directory containing the rbw.conÞgÞle. The installation procedure installs this Þle in the redbrickdirectory.
RB_HOST_name	Logical name for the warehouse daemon process. This value is RB_HOST by default, but can be any value that matches the value you speciÞed inÒProviding IPC Key and User InformationÓ on page 2-14 This name corresponds to the name assigned to the IPC key (SHMEM) in the rbw.conÞgÞle.

The veriÞcation script returns a message that begins like this.

```
Red Brick Warehouse Version..
Installation Verification
(C) Copyright 1991-1999 Informix Software, Inc.
All rights reserved.
Starting installation verification on Fri Sep 17 10:35:05 PDT 1999.
Creating an empty AROMA database...
(C) Copyright 1991-1999 Informix Software, Inc.
All rights reserved.
Version 6.0.y(zzzz)
Creation of an empty AROMA database finished.
Creating tables in the AROMA database...
(C) Copyright 1991-1999 Informix Software, Inc.
All rights reserved.
RISQL Entry Tool Version 6.0.y(zzzz)
> create table market (
>     mktkey         integer not null,
>     hq_city        char (20),
>     hq_state       char (20),
>     district       char (20),
>     region         char (20),
>     constraint mkt_pkc primary key (mktkey));
      ...
```

The veriÞcation script creates and loads Aroma, generates load statistics for each table, and veriÞes the contents of the database. After a successful run, the veriÞcation script issues the following message.

```
Installation verification completed successfully on Wed Jan 28 10:35:26 PST
1999.
```

Checklist of Installation Tasks

	Action	Page
1.	First complete the preparation tasks in Chapter 1, ÒPreparing for Installation.Ó	
	Log in as the superuser and mount the CD-ROM.	2-6
2.	Run the installation script, choose option 1 from the main menu, and respond to the prompts.	2-7
	You must be logged in as redbrickto run the script.	
3.	Choose option 4 from the installation menu to enable the software and options you purchased. Start by licensing either Red Brick Decision Server or Red Brick Decision Server for Workgroups.	2-17
4.	Start the Red Brick Decision Server daemonsrbwapid, rbwadmd, and rbwlogd. Log in as redbrickto start the daemons.	2-21
5.	Verify the Red Brick Decision Server installation.	2-24

Chapter

3

Installing a New Release

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Checklists of Installation Tasks 3-12

In This Chapter

This chapter is for existing Red Brick customers who want to install a new feature or maintenance release of Red Brick Decision Server or Red Brick Decision Server for Workgroups. The procedures in this chapter apply to both products unless otherwise stated.

The installation script installs the warehouse software, including the sample database named Aroma and the utility directory named util, as well as all optional Informix Red Brick products. The script also includes a licensing mechanism that you use to enable the software and any optional products you purchase.

To install Red Brick Decision Server over an existing installation, you can use either of the following methods:

- You can keep the existing release of Red Brick Decision Server running at your site and, for test purposes, install the new release in a separate directory with separate runtime conÞguration settings. For a description of this method, see ÒRunning Two Releases of Red Brick Decision ServerÓ on page 3-4
- You can replace the existing release with the new release. For a description of this method, see ÒReplace an Existing Warehouse with a New ReleaseÓ on page 3-9

To decide which method to use, consider the level of change in the release, the system resources, and the production status of the implementation at your site.

For example, suppose the new release represents a major upgrade to your existing software, you have room on your system to run two concurrent warehouse servers and store two databases, and your warehouse is in full-production mode. In that case, overwriting the existing system is unwise. Instead, you need to install the new release in a separate directory, test it to see how the changes affect your implementation, and then upgrade the production databases later.

On the other hand, if the new release is a maintenance release that contains few functional changes to the production environment, you might decide to skip the test step and overwrite the existing release immediately.

Depending on the level of change between your installed release and the new release, you might have to upgrade existing databases with the Table Management Utility before the new server can access them.ÒUpgrading DatabasesÓ on page 3-7 describes this operation in detail.

For more information about the level of change in this release and whether you need to upgrade your existing databases, refer to the release notes distributed with Red Brick Decision Server.

Warning: Earlier releases of the software cannot access an upgraded database, and Informix recommends that for test purposes you use newly loaded data or copies of your current databases.

Running Two Releases of Red Brick Decision Server

The procedure for installing and simultaneously running two releases of Red Brick Decision Server is similar to the Þrst-time installation procedure except for directory name and location and some conÞguration parameters.

You need not shut down any existing daemons to perform this installation. Full production use of the existing release can continue.

The installation procedure for Red Brick Decision Server uses a script named INSTALL.ISO, which displays a menu of installation options. These options let you do any of the following tasks:

- Install a full-feature or maintenance release of Red Brick Decision Server.
- Install a partial update, or *patch*, release.
- Enable an additional Informix Red Brick product with a license key.

For more information about installing an update release, refer to the release notes that are distributed with that release.

Red Brick Decision Server installation is typically done by the system or database administrator as the **redbrick** user.

As long as you do not overwrite the current installation with a new release, you can install a new release of Red Brick Decision Server while users are accessing the currently installed release.

Preview of Installation Tasks

To install a new release of Red Brick Decision Server, you perform the following tasks:

- Select an installation directory to hold the new release of Red Brick Decision Server (*new_redbrick_dir*). This directory must be different from the existing **redbrick** directory.
- Follow the installation instructions in Chapter 2 to install Red Brick Decision Server and verify your installation.
- Upgrade your test databases.
- Test the new features of Red Brick Decision Server, and then migrate production databases to the new release.
- Upgrade production databases to the new release.
- Migrate users to the new release.
- Optionally, replace the existing release of Red Brick Decision Server with the new release.

Warning: Database backups created with Red Brick Decision Server for the existing release might not be compatible with the new release you are installing. (For details, refer to the release notes.) If you might need access to backups, do not remove your existing warehouse software from your system.

Installing Red Brick Decision Server

The procedure for installing Red Brick Decision Server is described in Chapter 2, ÒInstalling Informix Red Brick Decision Server.ÓWhen installing a new version of Red Brick Decision Server in addition to your existing installation, you must select an installation directory that is different from your existing installation directory. For example, if your current installation is in redbrick_dir, then you might install your new installation in a directory named new_redbrick_dir

You must also select a warehouse logical name that is different from the logical name you used for your existing installation. For example, if your existing warehouse logical name is RB_HOST, you might choose RB_HOST_TESTas the logical name for your new installation.

Follow the instructions in ÒRunning the Installation ScriptÓ on page 2-7, and then continue with the instructions in the remainder of this chapter.

Redirecting Client Applications for Test Purposes

Redirect the client-application systems that you want to use for testing the new release by specifying the TCP/IP ports you chose during the installation (for example, 5052 and 5053). You can do this by adding a new Data Source Name (DSN) that points to the new port or by modifying an existing DSN to point to the new port.

At this point, you now have two independent warehouses running.

If you are going to use existing databases to test the new release, you must upgrade them to the new release as described in the following sections.

Migrating Databases to the New Release

After you test the new release of Red Brick Decision Server and become familiar with the new features and changes from previous releases, migrate your production databases to the new release. There are three ways to do this:

- Use the UPGRADE command provided with the new release to upgrade existing databases if necessary.
- Run an UNLOAD operation with the existing release of the TMU, re-create all tables and other database objects in the new server, and reload (LOAD) with the new TMU.
- Run a LOAD DATA operation with the data input files for the existing database using the new server release.

Only the UPGRADE procedure is described in this guide, in "Upgrading Databases" on page 3-7. For information about unloading and reloading data or loading from original data input files, refer to the Table Management Utility Reference Guide

Important: Databases created under previous releases are not always compatible with new server releases. For example, if you need to access a database backup that was created with a previous release of Red Brick Decision Server, you might need access to a compatible server release. To check compatibility, refer to the release notes for the new release.

Upgrading Databases

To upgrade an individual database, use the TMU and specify a control file containing the UPGRADE statement.

Important: Upgrades are not required for all new releases; check the current release notes for compatibility issues.

The upgrade operation creates backup copies of certain files for your database (such as the RB_DEFAULT_IDX file), which you can delete when you are satisfied that the upgrade process was successful. Which files are backed up varies from upgrade to upgrade.

Important: Make sure all database files (for example, system table files on NFS file systems) are online before upgrading.

To upgrade each database

1. Create a TMU control file that contains an UPGRADE statement as specified in the Table Management Utility Reference Guide or the release notes for the version you are installing.
2. Start the TMU, using a command of the form:

```
$ rb_tmu -d  db_name control_file dba_username dba_password
```

db_name	Database to upgrade. This is the logical database name, as defined in the new_redbrick_dir/rbw.config file. If you do not use the -d option, the TMU uses the logical database name specified by the RB_PATH environment variable.
control_file	Name of file that contains the UPGRADE statement.
dba_username, dba_password	Username and password for the user with DBA authorization for the database to be upgraded.

Depending on the releases involved in a given upgrade, you might have to perform a REORG operation on your databases after the upgrade. To find out whether this operation is necessary, refer to the current release notes.

For more information about TMU syntax, refer to the Table Management Utility Reference Guide.

Upgrade Messages

If a database referenced by a logical database name in the rbw.config file or a database named with the RISQL Entry Tool or RISQL Reporter -d startup option does not point to a valid database, the TMU issues a message such as the following.

```
** FATAL ** (519) Directory '/db/sample_db/aroma' does not contain a valid Red
Brick Warehouse database. Missing
'/db/sample_db/aroma/RB_DEFAULT_LOCKS'.
```

If the database is already a valid Version 6.0 database, the TMU issues a message such as the following message.

```
** ERROR ** (558) UPGRADE command does not need to be run on
database /db/sample_db/aroma.
```

After the database has been successfully upgraded, the TMU issues a message such as the following message.

```
** INFORMATION ** (559) UPGRADE of Red Brick Warehouse
database /db/sample_db/aroma successful.
```

Migrating Users to the New Release

You are now ready to migrate users to the new release. This takes only a few steps.

To migrate users to the new release

1. Back up your existing production databases.
2. Run the UPGRADE script, as described in previous sections, to make databases compatible with the new release.
3. If necessary, perform a REORG operation to ensure referential integrity and optimal performance. To find out whether you need to perform a REORG operation, refer to the release notes for the current release.
4. Redefine users' existing environment variables to point to the directory containing the new release software (new_redbrick_dir/bin).

The production version of the new Red Brick Decision Server release is now ready for use.

Replace an Existing Warehouse with a New Release

If the new release you are installing is a maintenance release that contains few substantial changes from the release running in your production environment, you can install the new release directly in the redbrickdirectory rather than set up a test directory. To install the new release in a directory that contains a previous release, you need to perform the following tasks:

- Shut down the Red Brick Decision Server daemons.
- Install the new software.
- Start the new Red Brick Decision Server daemons.
- Upgrade the existing databases, if necessary.
- Announce that the new release is available to the users.

These tasks are described in the following sections.

Shutting Down the Daemons

You can shut down the daemons in three steps.

To shut down the daemons

1. Log in as the redbrickuser.
2. Change to the directory that contains the Red Brick Decision Server binary Þles and stop the daemons (rbwapid, rbwadmd, and rbwlogd):

   ```
   # cd redbrick_dir /bin
   # ./rbw.stop RB_HOST
   ```

3. Continue as the redbrickuser.

Installing the New Release

Follow the instructions in Chapter 2, ÒInstalling Informix Red Brick Decision Server,Ó to install the new release in your redbrickdirectory. When you install a new release in the existing redbrickdirectory, use the same logical name and IPC key that you used for the existing installation.

As each program Þle is created during the installation process, you will be prompted to specify the location where you want the existing release backed up.

Tip: You might want to back up the existing release at this time in case you need access to backup copies of databases that were created with the earlier release. Thes Þles can eventually be removed from your system.

During installation, you are asked if you want to install a new rbw.conÞgÞle or retain the existing one. If you choose to retain the existing Þle, it will be saved asrbw.conÞgTIME. To use a parameter value from the existing rbw.conÞgÞle, copy the parameter from the old Þle and put it into the new one.

Enable each optional Informix Red Brick product you purchased with a valid license key at this time.

Starting the Daemons

After installing the software and entering license keys, start the daemon processes, as described underÒStarting the Red Brick Decision Server DaemonsÓ on page 2-22

Upgrading Existing Databases

Upgrade existing databases, as described underÒMigrating Databases to the New ReleaseÓ on page 3-6

Announcing the New Release

Finally, describe the changes and improvements this release offers the users at your site.

Checklists of Installation Tasks

The Þrst check list summarizes how to run two releases of the decision server concurrently, and the second summarizes how to replace an existing with a new release.

To run two releases concurrently, perform the following steps:

	Action	Page
1.	First complete the preparation tasks in Chapter 1, ÒPreparing for Installation.Ó	
	Install and verify Red Brick Decision Server.	Chapter 2
2.	Migrate your databases to the new release by performing an upgrade.	3-6
	Check the release notes for upgrade requirements.	
3.	Migrate users to the new release.	3-9

To replace an existing release with a new one, perform the following steps:

	Action	Page
1.	Stop the Red Brick Decision Server daemons for the existing release.	3-10
	Log in as redbrickto stop the warehouse daemon.	
2.	Install the new release.	Chapter 2
3.	Start the new warehouse daemons, as directed in Chapter 2.	2-22
4.	Upgrade existing databases, if necessary; check the release notes for details.	3-11
5.	Announce the availability of the new release to users.	3-11

Chapter

4

Installing Red Brick Client Products

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Checklist of Installation Tasks 4-9

In This Chapter

The client installation process allows you to install client products separately from the Red Brick Decision Server installation procedure. When Red Brick Decision Server is installed, the client products are automatically installed on the same computer; however, the client installation procedure described in this chapter lets you install Informix Red Brick client products on computers other than the computer where the Red Brick Decision Server is installed. This gives client users access to Red Brick Decision Server databases while eliminating the need for them to have accounts on the server computer.

This chapter explains how to install the following Red Brick Decision Server client products on UNIX platforms:

- RISQL Entry Tool, which lets you access Red Brick Decision Server databases on computers that run UNIX or Windows NT
- RISQL Reporter, which provides all the features of the RISQL Entry Tool and lets you format reports with data retrieved from databases
- Red Brick ODBCLib Software DeveloperÕs Kit (SDK), which provides the static libraries you need to build custom UNIX client applications

The client installation procedure installs the client software in a directory you deÞne.

The client installation procedure uses the INSTALL.ISO script, which displays a menu of installation options. You can install one or more client products.

Before You Begin

Read the release notes delivered with the software. The release notes discuss important information that was unavailable when this document was printed.

The procedures described in the following sections describe the basic installation process for Red Brick Decision Server client products.

These conditions can block an installation of the software:

- Incorrect user privileges
- Insufficient disk space
- Media failure (damaged CD-ROM)

If you see an error message during the installation, make sure you have read and write privileges on the directory into which you are installing the client products and that you have sufficient disk space for the software. For more information about system requirements, refer to "Verifying Operating-System Version and Disk Space" on page 1-6

If you are still unable to install the client products or if the CD-ROM is damaged, follow directions in "Customer Support" on page 1-10

Mounting and Unmounting the CD-ROM Device

To install Red Brick Decision Server client products, you must first mount the CD-ROM for your platform. After you complete the installation, you can unmount the CD-ROM for other uses.

For information, refer to "Mounting and Unmounting the CD-ROM Device" on page 2-6

Running the Installation Script

Use the INSTALL.ISO script to install Red Brick Decision Server client products. This script contains a menu interface that calls the supporting installation Þles during the installation. You can run this script as any user (that is, you do not need to be the redbrickuser).

To start the installation process, enter the following command:

```
$ cd  client_dir
$ /cdrom/  platform_name  /INSTALL.ISO
```

Always include the full pathname for the INSTALL.ISO script. In this command, client_dir is the directory in which you want to install client products, /cdromis the directory where your CD-ROM device is mounted, and platform_nameis the appropriate value as shown in the following table.

Platform	platform_name
AIX	aix, aix64
Digital UNIX	dec
HP-UX	hpx, hpx64
NCR UNIX SVR MP-RAS	NCR
DYNIX/ptx	PTX
Solaris	sol, sol64
Silicon Graphics IRIX	SGI

The aix64, hpx64, and sol64names specify the 64-bit version of Red Brick Decision Server. If you are using a 64-bit machine and are running a 64-bit version of the operating system, you can choose either version of Red Brick Decision Server; otherwise, you must use a 32-bit version.

For example, if your platform is HP-UX, type:

```
$ /cdrom/hpx/INSTALL.ISO
```

If your platform is Silicon Graphics IRIX, type:

```
$ /cdrom/SGI/INSTALL.ISO
```

The command is case sensitive.

The main Installation Menu is displayed.

```
############################################################
#                                  #
#           Red Brick Installation Menu          #
#                                  #
############################################################
     1.  Install Full or Maintenance Release
     2.  Install Update Release
     3.  Install Client Connectivity Products
     4.  Enable Red Brick Products
          Enter "q" to quit.
Enter item number and press Return. >
```

To install a client product, type 3 and press RETURN. The following menu is displayed.

```
############################################################
#                                  #
#     Red Brick Client Products Installation Menu     #
#                                  #
############################################################
     1.  Install RISQL Entry Tool and RISQL Reporter
     2.  Install Red Brick ODBCLib (SDK)
     3.  Install Red Brick ODBC Driver

          Enter "q" to quit.

Enter item number and press Return. >
```

Type the number of the client product you want to install and then press RETURN.

Stopping an Installation

To stop an installation and return to the main installation menu at any time, press your interrupt key, which is CONTROL-C on most systems.

You can then type q to quit the installation script and return to the operating-system prompt. If you stop the installation, the Þles that have already been installed are not removed automatically; you must remove them manually before you run the installation script again.

Installing Client Products

This section describes how to install the client software the Þrst time. For information about specifying the locale, refer to ÒSpecifying the LocaleÓ on page 2-11 and to Appendix B, ÒRecommended Locale SpeciÞcations.Ó If you have already installed a client product and you want to install other client products in the same directory, refer to ÒInstalling Additional Red Brick Client ProductsÓ on page 4-9

Specifying the Installation Directory

The installation script displays a prompt similar to the following prompt.

```
Install RISQL Entry Tool and RISQL Reporter in current
directory? (y|n) [y]:
```

Important: If you chose a client product other than RISQL Entry Tool and RISQL Reporter, the name of that product appears in the prompt.

To install the indicated client product in the current directory, press RETURN.

If the directory name is not correct, stop the installation by typing CONTROL-C, and then type q to quit the installation script and return to the operating-system prompt. Change to the correct directory and begin the procedure again.

Specifying the Host Name

The installation script displays the following prompt.

```
Enter the host name of the machine which is running the
Red Brick Warehouse to which you wish to connect:
```

Type the host name of the computer running the Red Brick Decision Server server (for example, spock) and press RETURN.

Important: If you do not know the host name of the computer running Red Brick Decision Server, ask your system administrator.

Specifying the Base TCP/IP Port for the Daemon

The installation script asks for the base TCP/IP port to be used to connect to the Red Brick Decision Server daemon.

```
Enter the TCP/IP port number used to connect to the Red
Brick Warehouse daemon [5050]:
```

Type the number of the port for the Red Brick Decision Server daemon and press RETURN. The default is 5050; if you do not know the TCP/IP port number, ask your system administrator. The daemon uses the default port and the next consecutively numbered port, for example, 5050 and 5051.

You can also find the base port number in the SERVER entry in the rbw.config file for Red Brick Decision Server, for example:

```
RB_HOST SERVER 5050
```

The server actually uses 5050 and 5051. The installation script now installs the client product. When the installation is complete, the installation script returns you to the Red Brick Client Products Installation Menu, where you can choose additional client products to install.

After you install client products, type q to exit the client installation process and return to the main installation menu. Then type q a second time to exit the installation script.

Installing Additional Red Brick Client Products

After you install one Red Brick client product, you can install subsequent client products in the same directory without having to specify the locale, host, and TCP/IP port information each time.

After you install one client product, the installation script returns you to the Red Brick Client Products Installation Menu. Type the number of the next product you want to install and press RETURN.

The script asks if you want to install the client product in the current directory. If you type y, the installation proceeds without asking you further questions. If you type n, you are prompted for the directory in which you want to install the software, and you must enter the locale, port, and host information in response to prompts from the installation script.

After you install client products, type q to exit the client installation process and return to the main installation menu. Then type q a second time to exit the installation script.

To run any UNIX ODBC applications that use DSNs (data source names), a file named .odbc.ini must exist in the home directories of each user of these applications. For more information about the .odbc.ini file, refer to the ODBC Connectivity Guide.

Checklist of Installation Tasks

To install Red Brick Client products, perform the following steps:

	Action	Pages
1.	Mount the CD-ROM device. For more information about mounting the CD-ROM device, refer to Chapter 2, "Installing Informix Red Brick Decision Server."	4-4
2.	Run the installation script, choose option 3 from the main menu, and respond to the prompts.	4-5

Chapter

5

Miscellaneous Administrative Tasks

In This Chapter 5-3

Administering Warehouse Daemons 5-3
- Checking the Status of an Active Daemon 5-3
- Stopping an Active Daemon 5-4
- ConÞguring Daemons for Automatic Startup 5-4

Changing the Simultaneous Connections Limit 5-4

Changing the redbrick User ID 5-5
- Adding a New User ID 5-5
- Changing the Name of the User ID 5-7

In This Chapter

This chapter contains some information that you might need during installation or conÞguration of Red Brick Decision Server. This information is common to all supported UNIX platforms. For platform-speciÞc system administration information, refer to the appropriate appendix.

This chapter explains the following administrative tasks:

- Administering warehouse daemons
- Changing the simultaneous connections limit
- Changing the redbrick user ID

Administering Warehouse Daemons

Red Brick Decision Server provides commands and conÞguration settings for checking the status of speciÞc rbwapid, rbwadmd, and rbwlogd daemons; stopping a speciÞc daemon; and conÞguring a daemon to start automatically whenever the operating system starts.

Checking the Status of an Active Daemon

To obtain information about an active daemon and its associated processes, set the environment variables RB_CONFIG and RB_HOST for that daemon and then run the script rbw.show

```
$ cd    redbrick_dir
$ ./bin/rbw.show
```

Stopping an Active Daemon

To stop an active daemon, run the script rbw.stopas the redbrickuser.

```
# cd    redbrick_dir
# ./bin/rbw.stop          RB_HOST
```

RB_HOSTis the logical name of the speciÞc daemon to be stopped.

Important: Theutil directory, which can be installed with Red Brick Decision Server, contains a utility namedop that allows users to start Red Brick Decision Server daemons or to run other privileged scripts or programs without superuser (root) access. For more information about theop utility, refer to theREADME Þle in theredbrick_dir/util/op directory.

Configuring Daemons for Automatic Startup

For information about how to conÞgure the Red Brick Decision Server daemon for automatic startup, refer to the appendix appropriate to your platform.

Changing the Simultaneous Connections Limit

Red Brick Decision Server limits the number of connections it accepts to the value speciÞed in the warehouse conÞguration Þle,rbw.conÞg This value includes Web users and is speciÞed as:

```
RBWAPI MAX_SERVERS
```

The default value is 50.

For more information about the connections limit and how to change it, refer to the AdministratorÕs Guide

Changing the redbrick User ID

You can designate any user to install the Red Brick Decision Server software and be the owner of the database files. By default, this user is named redbrick, but you can change the user ID that owns the software and database files at any time.

You can change the user ID that owns the software and database files in either of the two following ways:

- Add a new user ID and change the ownership of files.
- Change the name of the user ID.

These two methods are described in the following sections.

Adding a New User ID

Perform the following procedure to add a new UNIX user ID that owns the software and database files. It is easier to add this user ID before you install Red Brick Decision Server, but you can add a new user ID and change the ownership of the software and database files at any time.

1. Locate the directories of all the files that the database uses and record their names and locations. The following are locations where files are used by Red Brick Decision Server:
   - All files specified when you perform the query:

     ```
     select location from rbw_storage;
     ```
   - The database directories
   - The redbrick_dir/bin directory
   - The $RB_CONFIG directory
   - Any other directories owned by the user ID that owns the database files
   - Any other directories that contain files owned by the user ID that owns the database files

2. Create a new UNIX user ID (named redbrick, for example). The new user ID must belong to the same group as the previous user ID that owned the database files (goldmine, for example). For information about creating a new UNIX user ID, refer to your operating-system documentation.
3. Shut down all Red Brick Decision Server processes and daemons. These all run as the user ID that owns the database files.
4. As the root user, issue the following command:

   ```
   % find < directory_list > -user goldmine -print
   ```

   directory_list is the list of directories from step 1, and goldmine is the user ID that owns the database files. This command lists the files and directories for which ownership will be changed.

Important: Save the output from this command to a file and then verify that you have not inadvertently changed the ownership of any file.

5. Enter one of the following commands to change the owner of the files listed in step 4.

   ```
   % find < directory_list > -user goldmine -ok chown
   redbrick {} \;
   ```

   or

   ```
   % find < directory_list > -user goldmine -exec chown
   redbrick {} \;
   ```

   The only difference between these two commands is that the command with the -ok flag prompts you before each operation and the command with the -exec flag changes the owner without prompting you for approval.
6. Add a line to your rbw.config file similar to the following:

   ```
   # Changed <goldmine > to <redbrick> by < name> on <date >.
   ```
7. If you have not already installed the current version, do so now as the user you just created (for example, redbrick).

When you finish this procedure, run the rbw.start script to start the daemon processes.

Changing the Name of the User ID

To change the owner of the Red Brick Decision Server software and database Þles, edit the name Þeld in your UNIX user database. To do this, either edit the password Þle (and shadow Þle on some systems) directly or use an administrative tool supplied with your UNIX operating system. For more information about the UNIX user database, refer to your operating-system documentation.

Important: You must have superuser (root) privileges to perform these operations.

Although this method is quick and easy, the drawback is that it changes the original user ID deÞnition. To run previous versions of the server, you must use the goldmine user ID. If you changed the name of goldmine to redbrick, for example, you could no longer run Version 5.1 or earlier versions of the server.

Appendix

A

Warehouse Directories and Files

This appendix describes a typical warehouse directory structure, built using the standard conÞguration provided by the Informix Red Brick Decision Server installation procedure. Throughout the Red Brick Systems documentation, the warehouse directory is referred to as the redbrickdirectory or redbrick_dir

Directories and Files

The following illustration is a graphical representation of the directory hierarchy. A brief description of each signiÞcant Þle follows the illustration.

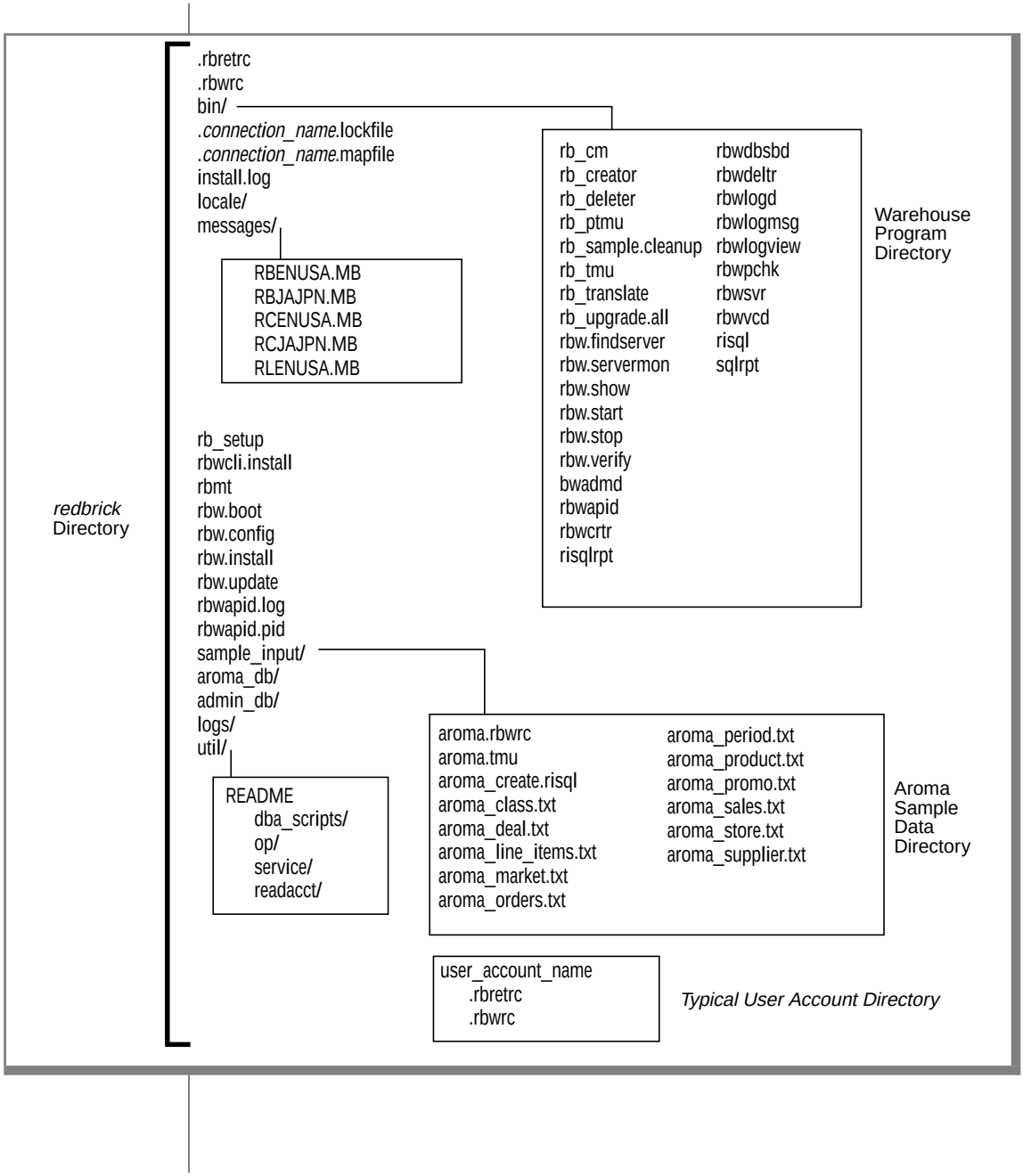
.rbretrc
.rbwrc
bin/
.connection_name.lockfile
.connection_name.mapfile
install.log
locale/
messages/
RBENUSA.MB
RBJAPJPN.MB
RCENUSA.MB
RCJAPJPN.MB
RLENUSA.MB
rb_cm
rb_creator
rb_deleter
rb_ptmu
rb_sample.cleanup
rb_tmu
rb_translate
rb_upgrade.all
rbw.findserver
rbw.servermon
rbw.show
rbw.start
rbw.stop
rbw.verify
bwadmd
rbwapid
rbwcrtr
risqlrpt
rbwdbsbd
rbwdeltr
rbwlogd
rbwlogmsg
rbwlogview
rbwpchk
rbwsvr
rbwvcd
risql
sqlrpt
Warehouse Program Directory
redbrick Directory
rb_setup
rbwcli.install
rbmt
rbw.boot
rbw.config
rbw.install
rbw.update
rbwapid.log
rbwapid.pid
sample_input/
aroma_db/
admin_db/
logs/
util/
README
dba_scripts/
op/
service/
readacct/
aroma.rbwrc
aroma.tmu
aroma_create.risql
aroma_class.txt
aroma_deal.txt
aroma_line_items.txt
aroma_market.txt
aroma_orders.txt
aroma_period.txt
aroma_product.txt
aroma_promo.txt
aroma_sales.txt
aroma_store.txt
aroma_supplier.txt
Aroma Sample Data Directory
user_account_name
.rbretrc
.rbwrc
Typical User Account Directory

Figure A-1 describes the directories and Þles in theredbrickdirectory. In the Name column, directories are marked with a slash (/) character, and their contents are indented.

Figure A-1
Directories and Files Under redbrick Directory

Name	Description
.rbretrc	Initialization Þles for the RISQL Entry Tool or the RISQL Reporter at warehouse and user levels.
.rbwrc	Initialization Þles for the server at the warehouse, database, and user levels.
bin/	Directory for warehouse server binary Þles and scripts.
rb_cm	Utility used to move data between warehouse databases across networks.
rb_creator	Script that creates the data dictionary and control tables for a warehouse by executing rbwcrtr.
rb_deleter	Script that deletes the default-named Þles for a warehouse database.
.RB_HOST.semaphore	Contains a list of semaphores used by a warehouse installation, where RB_HOST is the value of your RB_HOST environment variable.
.RB_HOST.shared-memory	Contains a list of shared memory keys used by a warehouse installation, where RB_HOST is the value of your RB_HOST environment variable.
rb_ptmu	Optional binary Þle for the Parallel Table Management Utility (Parallel TMU).
rb_sample.cleanup	Sample script to include in the startup Þle for automatic cleanup of temporary Þles.
rb_tmu	Binary Þle for the Table Management Utility (TMU).
rb_translate	Translation-support Þle.
rb_upgrade.all	Script that upgrades all databases built with previous releases to the current release.

(1 of 4)

Name	Description
rbw.Þndserver	Script that displays a list of all active warehouse server processes, using information gathered by rbw.servermon.
rbw.servermon	Server-monitoring daemon.
rbw.show	Script that shows whether rbwapiddaemon is running and lists all rbwsvr processes using that daemon.
rbw.start	Script that starts rbwapiddaemon.
rbw.stop	Script that stops rbwapiddaemon.
rbw.verify	Script that loads the Aroma sample database to verify the warehouse installation procedure.
rbwapid	Binary Þle for the warehouse daemon.
rbwadmd	Binary Þle for the administration daemon.
rbwcrtr	Binary Þle for the program that creates a new database; only for use by the rb_creatorscript.
rbwdsbd	Binary Þle for the database starter daemon that performs recovery operations whenever the decision server is started.
rbwdeltr	Binary Þle that removes information about a database from shared memory. Executed by the rb_deleterscript.
rbwlogd	Binary Þle for the log daemon.
rbwlogmsg	Utility that enables scripts to log events.
rbwlogview	Utility that allows viewing of binary logs generated in the logssubdirectory.
rbwpchk	Binary Þle for the process checker daemon that cleans up shared memory after the rbwsvr process ends (one per rbwapiddaemon).
rbwsvr	Binary Þle for the server program.
risql	Binary Þle for the RISQL Entry Tool.
risqlrpt	Binary Þle for the RISQL Reporter.

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Name	Description
rbwvcd	Binary Þle for the vacuum cleaner daemon.
.connection_ name.lockÞle	Temporary Þle created for warehouse use as the target of POSIX locks.
install.log	File containing identiÞcation number and date when the warehouse software was installed.
locale/	Directory containing the locale description.
messagęs	Directory containing the messages Þle for the language of choice (for example, English) and a corresponding log Þle.
rb_setup	Program used to install Informix Red Brick Decision Server and to activate Red Brick products with license keys.
rbwcli.install	Script used for installation of Red Brick client products.
rbmt	Script used for tape control.
rbw.boot	Script for automatic startup of rbwapid during system bootup.
rbw.conÞg	Text Þle containing conÞguration parameters.
rbw.install	Script used by rb_setup that controls the installation procedure.
rbw.update	Script used by rb_setup that runs the installation procedure for update releases.
rbwapid.log	File where log entries are written; an _old extension indicates the previous log Þle.
rbwapid.pid	File containing process ID (PID), product version, and rbwapid.log header information.

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Name	Description
sample_input/	Directory containing Þles used to create Aroma, the sample database. File contents are indicated by their extensions as follows: n .tmuÑControl statements for the Table Management Utility; for example, LOAD DATA n .risqlÑSQL and RISQL commands; for example, CREATE TABLE n .txtÑData input for the tables
aroma_db/	Sample database built by the rbw.verify program that results from the sample_input Þles.
admin_db/	Administration database built for the installation.
logs/	Default directory that contains log Þles created by the log daemon (rbwlogd).
util/	Directory containing collection of miscellaneous tools and utilities for use with Red Brick Decision Server. For information on contents and use, refer to the README Þle in this directory.

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Appendix

B

Recommended Locale Specifications

This appendix identiÞes the languages, territories, code pages, and collation sequences supported by the Informix Red Brick products. The following table lists the logical combinations of these locale components; however, you can use any combination in a locale speciÞcation.

Locales

The values shown in boldface in the following table are the default values for the corresponding language when you specify an incomplete locale. For example, the default code page for German is Latin1.

For more information on locales, see the AdministratorÕs Guide

Language	Territory	Code Page (Character Set)	Sort
English	UnitedStates Australia Canada South Africa UnitedKingdom	US-ASCII Latin1 MS1252 UTF-8 IBM037 IBM285	Binary Default
German	Germany Austria German-Switzerland	Latin1 MS1252 ISO-8859-9 UTF-8 IBM273	Default Binary
French	France French-Belgium French-Canada French-Switzerland	Latin1 MS1252 ISO-8859-9 UTF-8 IBM297	Default Binary
Spanish	Spain Argentina Chile Mexico	Latin1 MS1252 ISO-8859-9 UTF-8	Spanish TraditionalSpanish Binary
Italian	Italy Italian-Switzerland	Latin1 MS1252 ISO-8859-9 UTF-8 IBM280	Default Binary
Portuguese	Portugal Brazil	Latin1 MS1252 ISO-8859-9 UTF-8 IBM037	Default Binary
Norwegian	Norway	Latin1 MS1252 ISO-8859-9 UTF-8	Danish Binary

(1 of 5)

Language	Territory	Code Page (Character Set)	Sort
Swedish	Sweden	Latin1 MS1252 ISO-8859-9 UTF-8	Swedish Binary
Danish	Denmark	Latin1 MS1252 ISO-8859-9 UTF-8	Danish Binary
Finnish	Finland	Latin1 MS1252 ISO-8859-9 UTF-8	Finnish Binary
Japanese	Japan	JapanEUC MS932 UTF-8 IBM930	Binary
CanadianFrench	French-Canada	Latin1 MS1252 ISO-8859-9 UTF-8 IBM297	Default Binary
TraditionalChinese	Taiwan	EUC-TW MS950 UTF-8 IBM937	Binary
SimpliÞedChinese	China	MS936 UTF-8 IBM935	Binary
Albanian	Albania	ISO-8859-2 MS1250 Latin1 MS1252 ISO-8859-9 UTF-8	Default Binary

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Language	Territory	Code Page (Character Set)	Sort
Arabic	SaudiArabia	ISO-8859-6 MS1256 UTF-8	Default Binary
Bulgarian	Bulgaria	ISO-8859-5 MS1251 UTF-8	Default Binary
Byelorussian	Belarus	ISO-8859-5 MS1251 UTF-8	Default Binary
Catalan	Catalonia	Latin1 MS1252 ISO-8859-9 UTF-8	Default Binary
Croatian	Croatia	ISO-8859-2 MS1250 UTF-8	Croatian Binary
Czech	CzechRepublic	ISO-8859-2 MS1250 UTF-8	Czech Binary
Dutch	Netherlands Dutch-Belgium	Latin1 MS1252 ISO-8859-9 UTF-8 IBM037	Default Binary
Estonian	Estonia	ISO-8859-4 ISO-8859-10 MS1257 UTF-8	Estonian Binary
Farsi	Iran	ISO-8859-6 UTF-8	Default Binary
Greek	Greece	ISO-8859-7 MS1253 UTF-8	Default Binary

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Language	Territory	Code Page (Character Set)	Sort
Hebrew	Israel	ISO-8859-8 MS1255 UTF-8	Default Binary
Hungarian	Hungary	ISO-8859-2 MS1250 UTF-8	Hungarian Binary
Korean	Korea	MS949 MS1361 UTF-8	Binary
Latvian	Latvia	ISO-8859-4 ISO-8859-10 MS1257 UTF-8	Latvian Binary
Lithuanian	Lithuania	ISO-8859-4 ISO-8859-10 MS1257 UTF-8	Lithuanian Binary
Macedonian	Macedonia	ISO-8859-5 MS1251 UTF-8	Default Binary
Romanian	Romania	ISO-8859-2 MS1250 UTF-8	Romanian Binary
Russian	Russia	ISO-8859-5 MS1251 UTF-8	Default Binary
Serbian	Yugoslavia	ISO-8859-2 MS1250 UTF-8	Default Binary
CyrillicSerbian	Yugoslavia	ISO-8859-5 MS1251 UTF-8	Default Binary

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Language	Territory	Code Page (Character Set)	Sort
Slovak	Slovakia	ISO-8859-2 MS1250 UTF-8	Slovak Binary
Slovenian	Slovenia	ISO-8859-2 MS1250 UTF-8	Slovenian Binary
Thai	Thailand	MS874 UTF-8	Thai Binary
Turkish	Turkey	ISO-8859-9 ISO-8859-3 MS1254 UTF-8	Turkish Binary
Ukrainian	Ukraine	ISO-8859-5 MS1251 UTF-8	Ukrainian Binary
Vietnamese	VietNam	MS1258 UTF-8	Vietnamese Binary

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Notes

- The component strings in this table must be used in locale speciÞcations exactly as shown, with the exception that they are not case-sensitive.
- In the Sort column, anything that is not Binary is a linguistic sort deÞnition. Default refers to the sort deÞnition speciÞed by the CAN/CSA Z 243.4.1 Canadian ordering standard, which covers English and several Western European languages.
- All code pages include US-ASCII as a subset, so any of the listed code pages can safely be used when the language is English; however, the code pages listed for each language are the most appropriate choices.

- Code page conversions can reliably be performed between any two code pages listed for a given language. Conversions outside the scope of each language row in the table are not supported. For example, characters can be converted from Latin1 to MS1252 but not from Latin1 to JapanEUC.
- The MS932 code page, listed for Japanese, is a superset of Shift-JIS, excluding Shift-JIS codes 0x8160 0x8161 0x817c 0x8191 0x8192 0x81ca. A Shift-JIS character set is also available.
- Unicode is not a supported code page, nor are any shifted encoding schemes.

Appendix

C

Platform-Specific Information: IBM RISC System/6000

This appendix contains administration information for Red Brick Decision Server, much of which is speciÞc to the IBM RISC System/6000 under the AIX operating environment.

Configuring Operating-System Parameters

Red Brick Decision Server is a high-performance server designed to support the needs of tens or hundreds of users in a distributed client/server computing environment. To provide sufÞcient resources for this large number of client users, you might need to modify selected operating-system conÞguration parameters.

General Guidelines

- To run other applications concurrently on the same system as Red Brick Decision Server, you might need to increase selected parameter values as recommended in this section.
- If no speciÞc value for an operating-system parameter is speciÞed in this guide, Informix recommends that you use the default value.

- The parameter settings recommended here assume that only one version of Red Brick Decision Server is running on your system. If you plan to run two versions simultaneously (as described in Chapter 3, ÒInstalling a New ReleaseÓ) and both installations will be heavily loaded concurrently, you might need to modify your parameter settings.
- Modifying your AIX conÞguration is a complex system-administration task requiring superuser privileges. For information about the procedures used to make the necessary conÞguration changes, refer to ÒChanging Operating System ParametersÓ in the IBM AIX Hypertext Information Base publication.

Number of Users and Parallel Query Processes

Some conÞguration parameters depend on the maximum number of users licensed for your warehouse installation, the value of the parameter TOTALQUERYPROCS in the rbw.conÞg Þle, or both. If either of these parameters changes, you might have to adjust other operating-system parameters in turn. Therefore, you might want to conÞgure your operating system to support a projected number of users or a larger TOTALQUERYPROCS value. This allows you to expand your system without having to make adjustments later.

For AIX, you need to set the maximum number of processes allowed per user to the maximum number of concurrent users to be supported in your warehouse conÞguration, plus the value of TOTALQUERYPROCS in the rbw.conÞg Þle, plus 5. You can use the ÒSystem EnvironmentsÓ section of the System Management Interface Tool (SMIT) to make this change.

Limits File Settings

Ensure that there is no maximum Þle size limit set for the redbrickuser in the Þle /etc/security/limits. Also, the maximum soft data size must be set to 524288 and the maximum soft stack size to 16384. Be sure to check these settings for both the default user and the redbrickuser. If your system is properly conÞgured, you will see lines in the Þle like this:

```
fsize = -1
data = 524288
stack = 16384
```

Configuring Daemons for Automatic Startup

The following commands let you conÞgure the warehouse daemon for automatic startup, list entries in the /etc/inittabÞle (which contains instructions for automatic startup), and remove entries from the /etc/inittabÞle.

- To conÞgure the warehouse daemon for automatic startup when the operating system starts, log in as superuser and issue the following command:

  ```
  # mkitab 'rbwapid:2:once:/bin/sh -c "ulimit -d
  unlimited; \      redbrick_dir      /bin/rbw.start config_path
  RB_HOST > \
  /dev/console 2>&1"'
  ```

  This command modiÞes the /etc/inittabÞle. You must be superuser to modify this Þle.

- To list all entries in the inittab Þle, enter:

  ```
  # lsitab -a
  ```

- To remove the rbwapid entry from the inittab Þle, enter:

  ```
  # rmitab rbwapid
  ```

When you use this procedure, the warehouse daemon runs as the superuser. You can also conÞgure the warehouse daemon to automatically start but run as theredbrickuser.

Starting the Daemon as the redbrick User

To conÞgure the warehouse daemon to run as theredbrickuser, you must modify the rbw.bootscript by replacing the following line:

```
/ redbrick_dir      /bin/rbw.start /          redbrick_dir      RB_HOST
```

with

```
su -c "/      redbrick_dir      /bin/rbw.start /          redbrick_dir      RB_HOST"
```

where:

- redbrick_diris the directory for Red Brick Decision Server.
- RB_HOSTis the name of your server.

Appendix

D

Platform-Specific Information: Digital AlphaServer

This appendix contains administration information for Informix Red Brick Decision Server, much of which is speciÞc to the Digital AlphaServer under the Digital UNIX operating environment.

Configuring Operating-System Parameters

Informix Red Brick Decision Server is a high-performance server designed to support the needs of tens or hundreds of users in a distributed client/server computing environment. To provide sufÞcient resources for this large number of client users, you might have to modify selected operating-system conÞguration parameters.

General Guidelines

- To run other applications concurrently on the same system as Red Brick Decision Server, you might need to increase the parameter values recommended in this section.
- If no speciÞc value for an operating-system parameter is speciÞed in this guide, use the default value.

- The parameter settings recommended here assume that only one version of Informix Red Brick Decision Server is running on your system. If you plan to run two versions simultaneously (as described in Chapter 3, ÒInstalling a New ReleaseÓ) and both installations will be heavily loaded concurrently, you might need to modify your parameter settings.

Number of Users and Parallel Query Processes

Some conÞguration parameters depend on the maximum number of users licensed for your warehouse installation, the value of the parameter TOTALQUERYPROCS in the rbw.conÞgÞle, or both. If either of these parameters changes, you might have to adjust other operating-system parameters in turn. Therefore, you might want to conÞgure your operating system to support a projected number of users or a larger TOTALQUERYPROCS value. This will allow you to expand your warehouse system without having to make adjustments later on.

Kernel Parameters

ConÞguring Digital UNIX for Informix Red Brick Decision Server requires that you build and install a modiÞed operating-system kernel. Modifying the kernel is a complex system administration task requiring superuser privileges and system downtime to complete. For information about how to build and install a modiÞed operating-system kernel, refer to the Digital publication, System Administration.

Set the following kernel conÞguration parameters for Digital UNIX. Note that the values given are minimums required by Informix Red Brick Decision Server when it is the only application running on the server system. If other applications are used concurrently on your system, you might need different settings.

The recommended kernel parameters assume a single PTMU operation. If you are running more than one PTMU load at one time, you might need an increase in the resource requirement on your system.

Important: Check the release notes for any changes to the kernel parameters.

Parameter	Value
dßdsiz	268435456
dßssiz	8388608
maxproc	20 + 8 *maxusers + MAX (load_processes, 8 * max_rbw_users + max_parallel_tasks)
maxuprc	5 + MAX (59, load_processes, 8 * max_rbw_users + max_parallel_tasks)
maxusers	max_rbw_users + 8
msg-mnb	65535
msg-mni	52 + max_rbw_users + MAX [2 * MIN (max_parallel_tasks, max_rbw_users), load_processes]
msg-tql	40 + MAX (max_rbw_users * 40 + max_parallel_tasks * 2, load_processes * 10)
sem-mni	MAX (max_rbw_users, max_parallel_tasks) + (20 * num_cpus) + 30
num-of-sems (sem-mns in previous versions)	3 * MAX (max_rbw_users, max_parallel_tasks) + (20 * num_cpus) + 60
shm-max	If you are not using versioned databases, use 16777216 Otherwise, use: MAX (16777216, [858636 + max_active_revisions * 272 + sem-mni * 48 + size_of_version_log * 4])

(1 of 2)

Parameter	Value
shm-mni	If max_parallel_tasks = 0, use: (100 + max_active_databases) Otherwise, use: (100 + max_rbw_users + max_parallel_tasks * 2 + max_active_databases)
shm-seg	MAX (32, 2 + max_query_tasks)
task-max (maxproc in previous versions of Digital UNIX)	20 + 8 * MAXUSERS + MAX (load_processes, 2 * max_rbw_users + max_parallel_tasks) + 2 * max_active_databases

(2 of 2)

where:

load_processes	QUERYPROCS from the rbw.conÞgÞle (or the largest value used in any SET QUERYPROCS command if larger). If not speciÞed, use 0.
max_active_databases	Maximum number of active databases as speciÞed by the MAX_ACTIVE_DATABASES rbw.conÞgÞle parameter (the default is 30).
max_active_revision	Maximum number of active revisions for your largest database (the default is 500, and it can be speciÞed with the MAXREVISIONS speciÞcation of an ALTER DATABASE CREATE VERSION LOG statement).
max_nuniq_idx	Maximum number of nonunique indexes on any single table to be loaded by a parallel load.
max_query_tasks	QUERYPROCS from the rbw.conÞgÞle (or the largest value used in any SET QUERYPROCS command if larger). If not speciÞed, use 0.
max_parallel_tasks	Maximum number of users licensed for your warehouse installation.

max_rbw_users	Maximum number of concurrent server sessions as specified in the MAX_SERVERS parameter in the rbw.config file.
num_cpus	The number of CPUs on the machine.
size_of_version_log	The size, in kilobytes, of the version log for your largest database.

Important: The sem-mni, shm-max, shm-mni, msg-mnb, msg-tql, and msg-mni parameters need to be set in /etc/sysconfigtab file.

Configuring Daemons for Automatic Startup

To configure the warehouse daemon for automatic startup when the operating system starts:

1. Log in as superuser (root).
2. Copy the rbw.boot file generated by the install script into the /sbin/init.d directory:

   ```
   # cd redbrick_dir
   # cp rbw.boot /sbin/init.d
   ```

3. Create a link to the rbw.boot file for the Digital AlphaServer rc3 script to execute during initialization:

   ```
   # ln -s /sbin/init.d/rbw.boot /sbin/rc3.d/S99rbw
   ```

   (S99 instructs the script to start after all other processes are running.)
4. Create a link to cleanly shut down the daemons when the system shuts down:

   ```
   # ln -s /sbin/init.d/rbw.boot /sbin/rc2.d/K00rbw
   ```

   (K00 instructs the script to kill before other processes stop.)

When you use this procedure, the warehouse daemon runs as the superuser. You can also configure the warehouse daemon to automatically start but run as the redbrick user.

Starting the Daemon as the redbrick User

To conÞgure the warehouse daemon to run as theredbrickuser, you must modify the rbw.bootscript by replacing the following line:

```
/ redbrick_dir    /bin/rbw.start /        redbrick_dir    RB_HOST
```

with

```
su -c "/    redbrick_dir    /bin/rbw.start /        redbrick_dir    RB_HOST"
```

where:

- redbrick_diris the directory for Informix Red Brick Decision Server.
- RB_HOSTis the name of your server.

Appendix

E

Platform-Specific Information: HP 9000 Computer

This appendix contains administration information for Red Brick Decision Server, much of which is speciÞc to the HP 9000 Computer under the HP-UX operating environment.

Configuring Operating-System Parameters

Red Brick Decision Server is a high-performance server designed to support the needs of tens or hundreds of users in a distributed client/server computing environment. To provide sufÞcient resources for this large number of client users, you might need to modify selected operating-system conÞguration parameters.

General Guidelines

- To run other applications concurrently on the same system as Red Brick Decision Server, you might need to increase the parameter values recommended in this section.
- If no speciÞc value for an operating-system parameter is speciÞed in this guide, use the default value.
- The parameter settings recommended here assume that only one version of Red Brick Decision Server is running on your system. If you plan to run two versions simultaneously (as described in Chapter 3, ÒInstalling a New ReleaseÓ) and both installations will be heavily loaded concurrently, you might need to modify your parameter settings.

Number of Users and Parallel Query Processes

Some conÞguration parameters depend on the maximum number of users licensed for your warehouse installation, the value of the parameter TOTALQUERYPROCS in the rbw.conÞgÞle, or both. If either of these parameters changes, you might have to adjust other operating-system parameters in turn. Therefore, you might want to conÞgure your operating system to support a projected number of users or a larger TOTALQUERYPROCS value. This will allow you to expand your warehouse system without having to make adjustments later on.

Kernel Parameters

ConÞguring HP-UX for Red Brick Decision Server requires that you build and install a modiÞed operating-system kernel. Modifying the kernel is a complex system administration task requiring superuser privileges and system downtime to complete. For information about how to build and install a modiÞed operating-system kernel, refer to the Hewlett-Packard publication, System Administration Tasks Manual

Set the kernel conÞguration parameters for HP-UX as the following table shows. Note that the values given are minimums required by Red Brick Decision Server when it is the only application running on the server system. If other applications are used concurrently on your system, you might need different settings.

The recommended kernel parameters assume a single PTMU operation. If you are running more than one PTMU load at one time, you might need an increase in the resource requirement on your system.

Important: Check the release notes for any changes to the kernel parameters.

Parameter	Value
bufpages	0
maxÞles	max_PSUs+ 50
maxÞles_lim	MAX (1024, max_PSUs+ 100)

(1 of 3)

Parameter	Value
maxuprc	5 + MAX (20, load_processes, max_rbw_users + max_parallel_tasks)
msgmap	msgtql + 2
msgmnb	65535
msgmni	52 + max_rbw_users + MAX [2 * MIN (max_parallel_tasks, max_rbw_users), load_processes]
msgseg	MIN (32767, MAX (2048, msgmni * 40))
msgssz	64
msgtql	MAX [(MAX_RBW_USERS * 40 + MAX_PARALLEL_TASKS * 2), LOAD_PROCESSES * 10)]
nbuf	0
nÞle	16 * (NPROC + 16 + MAXUSERS)/10 + 32 + 2 * NPTY + (max PSU/table + max PSU/index) * number of tables in fact-to-fact join * expected number of concurrent users
nßocks	Same as NFILE.
nproc	30 + 8 * MAXUSERS + MAX (load_processes, 2 * max_rbw_users + max_parallel_tasks) + 2 * max_active_databases
num-of-sems	3 * MAX (max_rbw_users, max_parallel_tasks) + (2 * num_cpus) + 60
semmni	MAX (max_rbw_users, max_parallel_tasks) + (20 * num_cpus) + 30
semmns	3 * MAX (max_rbw_users, max_parallel_tasks) + (20 * num_cpus) + 60
semmap	max_rbw_users + 27

(2 of 3)

Parameter	Value
shmseg	MAX (12, 2 + max_query_tasks)
shmmax	If you are not using versioned databases, use 67108864 Otherwise, use: MAX (67108864, [1120904 + max_active_revision * 272 + semmni * 48 + size_of_version_log * 4])
shmmni	If max_parallel_tasks = 0, use (100 + max_active_databases) Otherwise, use MIN (1024, max_rbw_users + 100 + max_parallel_tasks / 2) + max_active_databases

(3 of 3)

where:

load_processes — If no parallel load or parallel REORG operations, use 0. Otherwise, use:
3 + (3 * num_cpus) + max_nuniq_idx

max_active_databases — Maximum number of active databases as specified by the MAX_ACTIVE_DATABASES rbw.config file parameter (the default is 30).

max_active_revision — Maximum number of active revisions for your largest database (the default is 500, and it can be specified with the MAXREVISIONS specification of an ALTER DATABASE CREATE VERSION LOG statement).

max_nuniq_idx — Maximum number of nonunique indexes on any single table to be loaded by a parallel load.

max_query_tasks — QUERYPROCS from the rbw.config file (or the largest value used in any SET QUERYPROCS command if larger). If not specified, use 0.

max_parallel_tasks — TOTALQUERYPROCS from the rbw.config file. If not specified, use 0.

max_PSUs — Maximum number of PSUs (files) that you expect to assign to a database. For help in determining this number, refer to the Administrator's Guide

max_rbw_users	Maximum number of concurrent server sessions as specified in the MAX_SERVERS parameter in the rbw.config file.
num_cpus	The number of CPUs on the machine.
size_of_version_log	The size, in kilobytes, of the version log for your largest database.

Configuring Daemons for Automatic Startup

To configure the warehouse daemon for automatic startup when the operating system starts:

1. Log in as superuser (root).
2. Copy the rbw.boot file generated by the install script into the /sbin/init.d directory:

   ```
   # cd redbrick_dir
   # cp rbw.boot /sbin/init.ds
   ```

3. Create a link to the rbw.boot file for the HP-UX operating system rc3 script to execute during initialization:

   ```
   # ln -s /sbin/init.d/rbw.boot /sbin/rc3.d/S999rbw
   ```

   (The name S999 is used so that this file will be executed late in the startup process.)

4. Create a link to cleanly shut down the daemons when the system shuts down:

   ```
   # ln -s /sbin/init.d/rbw.boot /sbin/rc2.d/K000rbw
   ```

   (The name K000 is used so that this file will be executed early in the shutdown process.)

When you use this procedure, the warehouse daemon runs as the superuser. You can also configure the warehouse daemon to automatically start but run as the redbrick user.

Starting the Daemon as the redbrick User

To conÞgure the warehouse daemon to run as theredbrickuser, you must modify the rbw.bootscript by replacing the following line:

```
/ redbrick_dir    /bin/rbw.start /        redbrick_dir    RB_HOST
```

with

```
su -c "/    redbrick_dir    /bin/rbw.start /        redbrick_dir    RB_HOST"
```

where:

- redbrick_diris the directory for Red Brick Decision Server.
- RB_HOSTis the name of your server.

Appendix

F

Platform-Specific Information: Sun SPARC-Based Systems

This appendix contains administration information for Red Brick Decision Server, much of which is speciÞc to Sun SPARC-based systems under the Solaris operating environment.

Configuring Operating-System Parameters

Red Brick Decision Server is a high-performance server designed to support the needs of tens or hundreds of users in a distributed client/server computing environment. To provide sufÞcient resources for this large number of client users, you might need to modify selected operating-system conÞguration parameters.

General Guidelines

- To run other applications concurrently on the same system as Red Brick Decision Server, you might need to increase the parameter values recommended in this section.
- If no speciÞc value for an operating-system parameter is speciÞed in this guide, use the default value.
- The parameter settings recommended here assume that only one version of Red Brick Decision Server is running on your system. If you plan to run two versions simultaneously (as described in Chapter 3, ÒInstalling a New ReleaseÓ) and both installations will be heavily loaded concurrently, you might need to modify your parameter settings.

Number of Users and Parallel Query Processes

Some conÞguration parameters depend on the maximum number of users licensed for your warehouse installation, the value of the parameter TOTALQUERYPROCS in the rbw.conÞgÞle, or both. If either of these parameters changes, you might have to adjust other operating-system parameters in turn. Therefore, you might want to conÞgure your operating system to support a projected number of users or a larger TOTALQUERYPROCS value. This will allow you to expand your warehouse system without having to make adjustments later on.

Kernel Parameters

ConÞguring Solaris for Red Brick Decision Server requires that you modify the operating-system kernel parameters. Modifying the kernel is a complex system administration task requiring superuser privileges and system downtime to complete. For information about modifying kernel parameters, refer to the SunSoft publication System ConÞguration and Installation Guide.

To conÞgure the Solaris operating environment, Þrst verify that the SUNWipc package is installed. If it is not installed, install it before you install Red Brick Decision Server; then set the kernel parameters to the values shown in the following table. (These values are minimums required by Red Brick Decision Server when it is the only application running on the server system. If other applications are used concurrently, you might need different settings.)

The recommended kernel parameters assume a single PTMU operation. If you are running more than one PTMU load at one time, you might need an increase in the resource requirement on your system.

Important: Check the release notes for any changes to the kernel parameters.

Parameter	Value
bufhwm	The default value is 2% of real memory (RAM); the recommended setting for Red Brick Decision Server is 15%. However, the absolute limit for this parameter is 35 megabytes (35,840 kilobytes), which represents less than 15% of memory for very large databases.
max_nprocs	100 + MAX (load_processes, 2 * max_rbw_users + max_parallel_tasks) + 2 * max_active_databases
maxusers	max_rbw_users + 8
msgsys:msginfo_msgmap	MAX (100, msgsys:msginfo_msgtql + 2)
msgsys:msginfo_msgmax	4096
msgsys:msginfo_msgmnb	65535
msgsys:msginfo_msgmni	102 + max_rbw_users + MAX [2 * MIN (max_parallel_tasks, max_rbw_users), load_processes]
msgsys:msginfo_msgssz	64
msgsys:msginfo_msgtql	MAX [(max_rbw_users * 40 + max_parallel_tasks * 2), load_processes * 10]
msgsys:msginfo_msgseg	MIN (32768, msgsys:msginfo_msgtql * 4)
semsys:seminfo_semmni	MAX (max_rbw_users, max_parallel_tasks) + (20 * num_cpus) + 30
semsys:seminfo_semmns	(max_rbw_users * 3) + 60
semsys:seminfo_semmap	max_rbw_users + 27

(1 of 2)

Parameter (continued)	Value (continued)
shmsys:shminfo_shmmax	If you are not using versioned databases, use 16777216 Otherwise, use: MAX (16777216, [793072 + max_active_revision * 272 + seminfo_semmni * 48 + size_of_version_log * 4])
shmsys:shminfo_shmmin	Set to 0.
shmsys:shminfo_shmmni	If max_parallel_tasks = 0, use (100 + max_active_databases) Otherwise, use: (100 + max_rbw_users + max_parallel_tasks * 2 + max_active_databases)

(2 of 2)

where:

load_processes — If no parallel load or parallel REORG operations, use 0. Otherwise, use:
3 + (3 * num_cpus) + max_nuniq_idx

max_active_databases — Maximum number of active databases as specified by the MAX_ACTIVE_DATABASES rbw.configfile parameter (the default is 30).

max_active_revision — Maximum number of active revisions for your largest database (the default is 500, and it can be specified with the MAXREVISIONS specification of an ALTER DATABASE CREATE VERSION LOG statement).

max_nuniq_idx — Maximum number of nonunique indexes on any single table to be loaded by a parallel load.

max_parallel_tasks — TOTALQUERYPROCS from the rbw.configfile. If not specified, use 0.

max_query_tasks — QUERYPROCS from the rbw.configfile (or the largest value used in any SET QUERYPROCS command if larger). If not specified, use 0.

max_rbw_users	Maximum number of concurrent server sessions as specified in the MAX_SERVERS parameter in the rbw.config file.
num_cpus	The number of CPUs on the machine.
size_of_version_log	The size, in kilobytes, of the version log for your largest database.

Configuring Daemons for Automatic Startup

To configure the Red Brick Decision Server daemons for automatic startup when the operating system starts:

1. Log in as superuser (root).
2. Copy the rbw.boot file generated by the install script into the /etc/init.d directory:

   ```
   # cd redbrick_dir
   # cp rbw.boot /etc/init.d
   ```

3. Create a link to the rbw.boot file for the Solaris rc3 script to execute during initialization:

   ```
   # ln -s /etc/init.d/rbw.boot /etc/rc3.d/S99rbw
   ```

   (S99 instructs the script to start after all other processes are running.)
4. Create a link to cleanly shut down the daemons when the system shuts down:

   ```
   # ln -s /etc/init.d/rbw.boot /etc/rc2.d/K00rbw
   ```

   (K00 instructs the script to kill before other processes stop.)

When you use this procedure, the warehouse daemon runs as the superuser. You can also configure the warehouse daemon to automatically start but run as the redbrick user.

Starting the Daemon as the redbrick User

To conÞgure the warehouse daemon to run as theredbrickuser, you must modify the rbw.bootscript by replacing the following line:

```
/ redbrick_dir    /bin/rbw.start /        redbrick_dir    RB_HOST
```

with

```
su -c "/    redbrick_dir    /bin/rbw.start /        redbrick_dir    RB_HOST"
```

where:

- redbrick_diris the directory for Red Brick Decision Server.
- RB_HOSTis the name of your server.

Appendix

G

Platform-Specific Information: Silicon Graphics Servers

This appendix contains administration information for Red Brick Decision Server, much of which is speciÞc to the Silicon Graphics Server under the IRIX operating environment.

Configuring Operating-System Parameters

Red Brick Decision Server is a high-performance server designed to support the needs of tens or hundreds of users in a distributed client/server computing environment. To provide sufÞcient resources for this large number of client users, you might need to modify selected operating-system conÞguration parameters.

General Guidelines

- To run other applications concurrently on the same system as Red Brick Decision Server, you might need to increase the parameter values recommended in this section.
- If no speciÞc value for an operating-system parameter is speciÞed in this guide, use the default value.
- The parameter settings recommended here assume that only one version of Red Brick Decision Server is running on your system. If you plan to run two versions simultaneously (as described in Chapter 3, ÒInstalling a New ReleaseÓ) and both installations will be heavily loaded concurrently, you might need to modify your parameter settings.

Number of Users and Parallel Query Processes

Some configuration parameters depend on the maximum number of users licensed for your warehouse installation, the value of the parameter TOTALQUERYPROCS in the rbw.config file, or both. If either of these parameters changes, you might have to adjust other operating-system parameters in turn. Therefore, you might want to configure your operating system to support a projected number of users or a larger TOTALQUERYPROCS value. This will allow you to expand your warehouse system without having to make adjustments later on.

Kernel Parameters

Configuring the IRIX operating system for Red Brick Decision Server requires that you modify the operating-system kernel parameters. Modifying the kernel is a complex system administration task requiring superuser privileges and system downtime to complete. For information about modifying kernel parameters, refer to the Silicon Graphics publication IRIX Advanced Site and Server Administration Guide

Set the following kernel configuration parameters for IRIX. Note that the values given are minimums required by Red Brick Decision Server when it is the only application running on the server system. If other applications are used concurrently on your system, you might need different settings.

The recommended kernel parameters assume a single PTMU operation. If you are running more than one PTMU load at one time, you might need an increase in the resource requirement on your system.

Important: Check the release notes for any changes to the kernel parameters.

Parameter	Value
msgmax	32768
msgmnb	65536
msgmni	MIN {1000, max_rbw_users + 52 + [MAX(2 * MIN(max_parallel_tasks, max_rbw_users), load_processes)]}

(1 of 2)

Parameter	Value
msgseg	msgmni * 40
msgssz	64
msgtql	MIN(1000, 40 + MAX(max_rbw_users * 40 + max_parallel_tasks * 2, load_processes * 10))
num-of-sems	3 * MAX (max_rbw_users, max_parallel_tasks) + (2 * num_cpus) + 60
rlimit_noÞle_cur	2500
semmni	MAX (max_rbw_users, max_parallel_tasks) + (20 * num_cpus) + 30
semmns	3 * MAX (max_rbw_users, max_parallel_tasks) + (20 * num_cpus) + 60
shlbmax	32
shmmni	If max_parallel_tasks = 0, use (400 + max_active_databases) Otherwise, use MIN (1000, max_rbw_users + 400 + max_parallel_tasks * 2) + max_active_databases
sshmseg	MIN[1000, MAX(100, 2 + max_query_tasks)]
svr3pipe	0

(2 of 2)

where:

load_processes — If no parallel loads, use 0. Otherwise, use: 3 + MAX (1, num_cpus/2) + max_nuniq_idx

max_active_databases — Maximum number of active databases as speciÞed by the MAX_ACTIVE_DATABASES rbw.conÞgÞle parameter (the default is 30).

max_rbw_users — Maximum number of concurrent server sessions as speciÞed in the MAX_SERVERS parameter in the rbw.conÞgÞle.

max_parallel_tasks	TOTALQUERYPROCS from the rbw.conÞgÞle. If not speciÞed, use 0.
max_query_tasks	QUERYPROCSfrom the rbw.conÞgÞle (or the largest value used in any SET QUERYPROCScommand if larger). If not speciÞed, use 0.
max_nuniq_idx	Maximum number of non-unique indexes on any single table to be loaded by a parallel load.
num_cpus	The number of CPUs on the machine.

Configuring Daemons for Automatic Startup

To conÞgure the Red Brick Decision Server daemons for automatic startup when the operating system starts:

1. Log in as superuser (root).
2. Copy the rbw.bootÞle generated by the install script into the /etc/init.d directory:

   ```
   # cd redbrick_dir
   # cp rbw.boot /etc/init.d
   ```

3. Create a link to the rbw.bootÞle for the IRIX rc2 script to execute during initialization:

   ```
   # ln -s /etc/init.d/rbw.boot /etc/rc2.d/S99rbw
   ```

   (S99 instructs the script to start after all other processes are running.)
4. Create a link to cleanly shut down the daemons when the system shuts down:

   ```
   # ln -s /etc/init.d/rbw.boot /etc/rc1.d/K00rbw
   ```

   (K00 instructs the script to kill before other processes stop.)

When you use this procedure, the warehouse daemon runs as the superuser. You can also conÞgure the warehouse daemon to automatically start but run as theredbrickuser.

Starting the Daemon as the redbrick User

To conÞgure the warehouse daemon to run as theredbrickuser, you must modify the rbw.bootscript by replacing the following line:

```
/ redbrick_dir    /bin/rbw.start /        redbrick_dir    RB_HOST
```

with

```
su -c "/    redbrick_dir    /bin/rbw.start /        redbrick_dir    RB_HOST"
```

where:

- redbrick_diris the directory for Red Brick Decision Server.
- RB_HOSTis the name of your server.

Appendix

H

Platform-Specific Information: Sequent Symmetry System

This appendix contains administration information for Red Brick Decision Server, much of which is speciÞc to the Sequent Symmetry System under the DYNIX /ptx operating environment.

Configuring Operating-System Parameters

Red Brick Decision Server is a high-performance server designed to support the needs of tens or hundreds of users in a distributed client/server computing environment. To provide sufÞcient resources for this large number of client users, you might need to modify selected operating-system conÞguration parameters.

General Guidelines

- To run other applications concurrently on the same system as Red Brick Decision Server, you might need to increase the parameter values recommended in this section.
- If no speciÞc value for an operating-system parameter is speciÞed in this guide, use the default value.
- The parameter settings recommended here assume that only one version of Red Brick Decision Server is running on your system. If you plan to run two versions simultaneously (as described in Chapter 3, ÒInstalling a New ReleaseÓ) and both installations will be heavily loaded concurrently, you might need to modify your parameter settings.

Number of Users and Parallel Query Processes

Some configuration parameters depend on the maximum number of users licensed for your warehouse installation, the value of the parameter TOTALQUERYPROCS in the rbw.config file, or both. If either of these parameters changes, you might have to adjust other operating-system parameters in turn. Therefore, you might want to configure your operating system to support a projected number of users or a larger TOTALQUERYPROCS value. This will allow you to expand your warehouse system without having to make adjustments later on.

Kernel Parameters

Configuring DYNIX/ptx for Red Brick Decision Server requires that you build and install a modified operating system kernel. Modifying the kernel is a complex system administration task requiring superuser privileges and system downtime to complete. For more information about how to build and install a modified kernel, refer to the DYNIX/ptx System Configuration and Performance Guide, published by Sequent.

Set the following kernel configuration parameters for DYNIX/ptx Version 4.x. The values given are minimums required by Red Brick Decision Server when it is the only application running on the server system. If other applications are used concurrently, you might need different settings.

The recommended kernel parameters assume a single PTMU operation. If you are running more than one PTMU load at one time, you might need an increase in the resource requirement on your system.

Important: Check the release notes for any changes to the kernel parameters.

Parameter	Value
maxusers	MIN (1024, max_rbw_users + 64)
msgmap	MSGMNI * 4
msgmnb	65535

(1 of 2)

Parameter	Value
msgmni	52 + max_rbw_users + MAX[2 * MIN (max_parallel_tasks, max_rbw_users), load_processes]
msgseg	MIN (32767, MSGMNI * 40)
msgssz	64
msgtql	40 + MAX (max_rbw_users * 40 + max_parallel_tasks * 2, load_processes * 10)
nproc	PROC_MULT * MAXUSERS + 20 + MAX (load_processes, 3 * max_rbw_users + max_parallel_tasks)
shmmax	MAX(16 megabytes, max_rbw_users * 4200 + max_parallel_tasks * 104 + 32768)
shmmni	If max_parallel_tasks = 0, use 100. Otherwise, use max_rbw_users + 100 + 2 * max_parallel_tasks

(2 of 2)

where:

load_processes — If no parallel loads, use 0. Otherwise, use: 3 + MAX (1, num_cpus/2) + max_nuniq_idx

max_nuniq_idx — Maximum number of nonunique indexes on any single table to be loaded by a parallel load.

max_parallel_tasks — TOTALQUERYPROCS from the rbw.conÞgÞle. If not speciÞed, use 0.

max_rbw_users — Maximum number of concurrent server sessions as speciÞed in the MAX_SERVERS parameter in the rbw.conÞgÞle.

num_cpus — The number of CPUs on the computer.

When you modify the kernel, consider the following sections regarding TCP connections, semaphores, and tuning parameters for DYNIX/ptx .

Simultaneous Connections

The maximum number of Red Brick Warehouse Connect connections is limited by the maximum number of warehouse server processes (MAX_SERVERS) specified during the warehouse installation. Red Brick Warehouse Connect requires one protocol control block for each simultaneous connection, which must be reflected in the value of the kernel parameter N_TCP_PCB_FREE. For information about configuring the available number of TCP connections (protocol control blocks), refer to the ptx/TCP/IP Administration Guide, published by Sequent.

Semaphores

The warehouse server creates a new semaphore set of three semaphores for each connection as that connection is established. The number of IDs in the system (SEMMNI) must always be at least the number of possible connections to Red Brick Decision Server.

Example

A limit of 50 Red Brick Decision Server users requires at least the following settings:

Parameter	Value
SEMMNS	150
SEMMNI	50
SEMMSL	3

Tuning Suggestions

Use the following guidelines to tune your system for improved warehouse performance.

Kernel Parameters	Value
AVGSZ_PROC	The average process size is 20 MB (20480). This parameter affects the size of theusrptmap If this value is too small, it can cause swap-in failures; it can also induce swapping.
BUFPCT	The warehouse server uses the DYNIX/ptx Þle system and thus the buffer cache, which needs to be large enough to maximize the read/hit ratio (see monitor(1M)), within reason.

vmtune Parameters	Value
desfree	Start with 2000; if your system exhibits swapping seizures, adjust up. The system will attempt to keep 2000 K memory free. If free memory drops below minfree, it will cause swapping seizures.
maxRS	To maximize the speed of the load process when loading a database, setmaxRSto total available memory so that the TMU can use all available memory. You might need to setmaxRS lower than this number during normal processing to facilitate concurrency.
dirtylow/ dirtyhigh/ maxdirty	If maxRSis set lower than available memory, adjust these parameters. Start with 1000/2000/2500 and adjust up or down, depending on the number of major page faults.

Warning: Exceedingmaxdirty and having less than desfree will cause swapping seizures. Increase the difference betweendirtyhigh andmaxdirty to help avoid such seizures.

Configuring Daemons for Automatic Startup

To conÞgure the Red Brick Decision Server daemons for automatic startup when the operating system starts:

1. Log in as superuser (root).
2. Copy the rbw.bootÞle generated by the install script into the /etc/init.d directory:

   ```
   # cd redbrick_dir
   # cp rbw.boot /etc/init.d
   ```

3. Create a link to the rbw.bootÞle for the Sequent UNIX System Vrc2 script to execute during initialization:

   ```
   # ln -s /etc/init.d/rbw.boot /etc/rc2.d/S99rbw
   ```

   (S99 instructs the script to start after all other processes are running.)
4. Create a link to cleanly shut down the daemons when the system shuts down:

   ```
   # ln -s /etc/init.d/rbw.boot /etc/rc1.d/K00rbw
   ```

   (K00 instructs the script to kill before other processes stop.)

When you use this procedure, the warehouse daemon runs as the superuser. You can also conÞgure the warehouse daemon to automatically start but run as theredbrickuser.

Starting the Daemon as the redbrick User

To conÞgure the warehouse daemon to run as theredbrickuser, you must modify the rbw.bootscript by replacing the following line:

```
/ redbrick_dir /bin/rbw.start / redbrick_dir RB_HOST
```

with

```
su -c "/ redbrick_dir /bin/rbw.start / redbrick_dir RB_HOST"
```

where:

- redbrick_diris the directory for Red Brick Decision Server.
- RB_HOSTis the name of your server.

Platform-Specific Information: NCR WorldMark Servers

This appendix contains administration information for Red Brick Decision Server, much of which is speciÞc to the NCR WorldMark Servers under the NCR UNIX SVR4 MP-RAS operating environment.

Configuring Operating-System Parameters

Red Brick Decision Server is a high-performance server designed to support the needs of tens or hundreds of users in a distributed client/server computing environment. To provide sufÞcient resources for this large number of client users, you might need to modify selected operating-system conÞguration parameters.

General Guidelines

- To run other applications concurrently on the same system as Red Brick Decision Server, you might need to increase the parameter values recommended in this section.
- If no speciÞc value for an operating-system parameter is speciÞed in this guide, use the default value.

- The parameter settings recommended here assume that only one version of Red Brick Decision Server is running on your system. If you plan to run two versions simultaneously (as described in Chapter 3, ÒInstalling a New ReleaseÓ) and both installations will be heavily loaded concurrently, you might need to modify your parameter settings.

Number of Users and Parallel Query Processes

Some conÞguration parameters depend on the maximum number of users licensed for your warehouse installation, the value of the parameter TOTALQUERYPROCS in the rbw.conÞgÞle, or both. If either of these parameters changes, you might have to adjust other operating-system parameters in turn. Therefore, you might want to conÞgure your operating system to support a projected number of users or a larger TOTALQUERYPROCS value. This will allow you to expand your warehouse system without having to make adjustments later on.

Kernel Parameters

ConÞguring NCR UNIX SVR4 MP-RAS for Red Brick Decision Server requires that you build and install a modiÞed operating system kernel. Modifying the kernel is a complex system administration task requiring superuser privileges and system downtime to complete. For information about how to build and install a modiÞed operating system kernel, refer to the NCR publication, Administrator Guide: Command Line Interface System ConÞguration (Volume 3).

Verify that the ipc, msg, sem, and shm modules are conÞgured into your current kernel conÞguration. If they are not, follow the instructions in the NCR documentation to include these modules.

Set the following kernel conÞguration parameters for NCR UNIX SVR4 MP-RAS. The values given are minimums required by Red Brick Decision Server when it is the only application running on the server system. If other applications are used concurrently, you might need different settings.

The recommended kernel parameters assume a single PTMU operation. If you run more than one PTMU load at one time, you might need an increase in the resource requirement on your system.

Important: Check the release notes for any changes to the kernel parameters.

Parameter	Value
SEMMNI	max_rbw_users + 25
NUM-OF-SEMS	3 * MAX (max_rbw_users, max_parallel_tasks) + (2 * num_cpus) + 60
SEMMAP	max_rbw_users + 27
SFNOLIM	MIN (1024, (max_PSUs + 64))
FLCKREC	2000
MAXUP	MAX (30, max_rbw_users + max_parallel_tasks + 5)
SHMMAX	MAX(16 MEGABYTES, max_rbw_users * 4200 + max_parallel_tasks * 104 + 32768)
NPROC	55 + MAX(load_processes, 2 * max_rbw_users + max_parallel_tasks)
NINODE*	350 + (max_rbw_users * 2)
UFSNINODE*	350 + (max_rbw_users * 2)
SHMMNI	If max_parallel_tasks = 0, use 100. Otherwise, use MIN(500, max_rbw_users + 100 + 2 *max_parallel_tasks)
MSGMAP	400
MSGMAX	4096
MSGMNI	MIN (1000, 2 * max_rbw_users + 50)
MSGTQL	100
HVMMLIM	0x7FFFFFFF
SVMMLIM	0x7FFFFFFF
HDATLIM	0x7FFFFFFF

(1 of 2)

Parameter	Value
SDATLIM	0x7FFFFFFF
HSTKLIM	0x7FFFFFFF
SSTKLIM	0x1000000

(2 of 2)

where:

load_processes — If no parallel loads, use 0. Otherwise, use: 3 + MAX (1, num_cpus/2) + max_nuniq_idx

max_nuniq_idx — Maximum number of nonunique indexes on any single table to be loaded by a parallel load.

max_parallel_tasks — TOTALQUERYPROCS from the rbw.conÞgÞle. If not speciÞed, use 0.

max_rbw_users — Maximum number of concurrent server sessions as speciÞed in the MAX_SERVERS parameter in the rbw.conÞgÞle.

num_cpus — The number of CPUs on the UNIX .

Important: If the above recommendations yield values such that MAXUP exceeds the system maximum of 400 and /NPROC exceeds the system maximum of 5104, reduce max_rbw_users and/or max_parallel_tasks.

The maximum value for NINODE and UFSNINODE is 5000. If max_rbw_users exceeds 2325, set these parameters to 5000.

NCR UNIX does not allow a message queue to be any longer than 4K, the total space available for all message queues is Þxed at 8K.

Configuring Daemons for Automatic Startup

To conÞgure the Red Brick Decision Server daemons for automatic startup when the operating system starts:

1. Log in as superuser (root).
2. Copy the rbw.bootÞle generated by the install script into the /etc/init.d directory:

   ```
   # cd redbrick_dir
   # cp rbw.boot /etc/init.d
   ```

3. Create a link to the rbw.bootÞle for the NCR UNIX SVR4 MP-RAS rc3 script to execute during initialization:

   ```
   # ln -s /etc/init.d/rbw.boot /etc/rc3.d/S99rbw
   ```

   (S99 instructs the script to start after all other processes are running.)
4. Create a link to cleanly shut down the daemons when the system shuts down:

   ```
   # ln -s /etc/init.d/rbw.boot /etc/rc2.d/K00rbw
   ```

   (K00 instructs the script to kill before other processes stop.)

When you use this procedure, the warehouse daemon runs as the superuser. You can also conÞgure the warehouse daemon to automatically start but run as the redbrickuser.

Starting the Daemon as the redbrick User

To conÞgure the warehouse daemon to run as the redbrickuser, you must modify the rbw.bootscript by replacing the following line:

```
/ redbrick_dir /bin/rbw.start / redbrick_dir RB_HOST
```

with

```
su -c Ò/ redbrick_dir /bin/rbw.start / redbrick_dir RB_HOSTÓ
```

where:

- redbrick_diris the directory for Red Brick Decision Server.
- RB_HOSTis the name of your Red Brick Decision Server.

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