

Installation Guide

for Informix Extended Parallel Server

on UNIX

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About This Guide

This guide contains instructions for installing Informix Extended Parallel Server on computers that run the UNIX operating system. You will find instructions for an installation wizard and a command-line installation in this guide.

Keep this installation guide with your Informix software documentation for easy reference.

To view the entire documentation set for Extended Parallel Server, go to the Answers OnLine Web site at www.informix.com/answers.

In this guide, all references to the database server refer to Extended Parallel Server.

Types of Users

This guide is for database administrators who are installing Informix database server products. This guide assumes that you are familiar with the operating procedures of your computer and with UNIX.

Documentation Notes, Release Notes, and Machine Notes

Your database server is installed with on-line documentation notes, release notes, and machine notes that supplement the information in this and other manuals. These files are stored at the root level of the CD that contains the installation program and the database server software.

Please examine these files before you install the database server software or begin using your database server. They contain vital information about application and performance issues.

After you complete the installation procedure that this guide describes, you will find the following on-line files in the `$INFORMIXDIR/release/en_us/0333` directory.

On-Line File	Purpose
<code>INSTLUXDOC_8.3</code>	The documentation notes file describes features that are not covered in this guide or that have been modified since publication.
<code>SERVERS_8.3</code>	The release notes file describes feature differences from earlier versions of Informix products and how these differences might affect current products. This file also contains information about any known problems and how to solve them.
<code>XPS_x.y</code>	The machine notes file describes any special actions that are required to configure and use Informix products on your platform.

GLS

Global Language Support

Global Language Support (GLS) allows Informix products to use different locales. A GLS locale is an environment that has defined conventions for a particular language, culture, or code set, including U.S. ASCII English.

GLS locale and code-set conversion files are installed automatically when you install your Informix product. The installation process installs the following GLS files in the `$INFORMIXDIR/gls` directory on your hard drive:

- Locale files for each supported GLS locale
- Code-set conversion files for each supported code-set conversion
- Code-set files for each supported code set
- The Informix **registry** file

For more information about GLS files for your Informix product and the **glfiles** utility, which creates a list of GLS locales, see the [Informix Guide to GLS Functionality](#).

Preparing to Install the Database Server Software

You can install Informix products only as licensed by Informix. You must not transfer software from one computer to another or to another portion of your network without re-registering the product and obtaining the written consent of Informix.

Your Informix product materials include a serial-number keycard and electronic media that contain all product files. You need both of these items to perform the installation procedure. If you do not have one or both of them, contact your supplier or Informix sales representative.

If you encounter difficulties when you install Extended Parallel Server, refer to [“Troubleshooting” on page 29](#). If you still encounter problems, contact Informix Technical Support. In North America, call (800) 274-8184 or send a facsimile to (913) 599-8590. Outside North America, contact your distributor or the nearest Informix subsidiary.

Choosing an Installation Method

Informix provides the following two ways for you to install the database server software and then configure and initialize the database server:

- Use the installation wizard that automates the installation steps. The installation wizard also configures and initializes the database server after the database server software is installed.

Follow these general steps to use the installation wizard:

1. Set the **informix** user and group accounts, as described in [“Creating the informix Group and User Accounts” on page 7](#), and perform the two preinstallation steps for the installation wizard, which are described in [“Preinstallation Steps for the Installation Wizard” on page 10](#).

If certain non-Informix storage-management software is installed, you might need to uninstall it, as described in [“Providing for Storage-Management Software” on page 8](#).

2. Choose whether to run the installation wizard in interactive mode or in silent mode.

In interactive mode, you enter requested information in each installation program dialog box, as described in [“Using the Installation Wizard” on page 15](#). In silent mode, the installation program reads information from a file that you create, as described in [“Using Silent Installation” on page 13](#).

3. Run the installation program in the mode you select to install the database software and, if you select this option, to configure and initialize a database server automatically.

- Use the manual installation method that requires you to type all commands on the UNIX command line.

Follow these general steps to install the database server manually:

1. Set the **informix** group and user accounts as described in [“Creating the informix Group and User Accounts” on page 7](#), and perform the two preinstallation steps, which are described in [“Preinstallation Steps for a Command-Line Installation” on page 19](#).
2. Uninstall certain non-Informix storage-management software, as described in [“Providing for Storage-Management Software” on page 8](#).
3. Copy the database server software from the CD to your hard disk.
4. Use the UNIX **tar** command to extract the installation files from the archive file, as instructed in [“Copying the Database Server Software” on page 21](#).
5. Install the database server software.
6. Configure the database server.
7. Initialize the database server.

Before you proceed with the configuration and initialization steps, review the discussion of the configuration tasks in the [Administrator's Guide](#).



Tip: Certain computers require special installation procedures. If you have such a computer, Informix includes a separate installation letter with the product materials package. If you find such a letter, follow those instructions before you continue with the installation instructions in this guide. Also, refer to the appropriate machine notes file for additional instructions that pertain to your computer.

Determining the Order of Installation

If you plan to install more than one Informix product on the same computer, you must install the products in the following order:

1. **Client products.** Install the Informix Client Software Developer's Kit, Informix Connect, and other tools before you install the database server software. For information on how to install client products, refer to the [Informix Client Products Installation Guide for UNIX](#).
2. **Database servers.** For information on how to install your Informix database server, refer to this guide. For information about how to migrate from one Informix database server to another, see the [Informix Migration Guide](#).

Complete all installation procedures for each product before you start to install the next product. Do not load the files from another Informix product onto your computer until you complete the current installation.

To preserve product files of earlier versions, create separate directories for each version of your Informix products. If you install multiple versions of an Informix product and you want to access a different version of the product, set the **INFORMIXDIR** environment variable to the appropriate directory name for that version and add **INFORMIXDIR** to your **PATH** environment variable.

For information about **INFORMIXDIR**, see [“Installing the Database Server from the Command Line” on page 23](#).

Compatibility Information

Earlier versions of Informix client products are compatible with Extended Parallel Server.

Creating the informix Group and User Accounts

The first time that you install an Informix product, you need to create the **informix** group and user accounts.

To create informix group and user

1. Log in as **root**.
2. To create group **informix**, use an operating-system tool or utility that lets you create a new entry in the group file. The group file is **/etc/group** on most UNIX systems. Provide an unused group number equal to or greater than 100. If necessary, see your system administrator or operating-system manual for assistance.
3. To create user **informix**, use an operating-system tool or utility that lets you create a new entry in the **/etc/passwd** file. Provide a user ID number equal to or greater than 100 for that user and assign the user to group **informix**. Create a password for user **informix**.



Important: Anyone logged in as user **informix** has the same access to data and the same privileges as the database server administrator. The user **informix** account is the database equivalent of the UNIX **root** account, so anyone logged in as user **informix** has complete access to any Informix products and databases. Make sure that you keep the password for user **informix** confidential.

Informix products use group **informix** internally to control database access. Make sure that user **informix** is the *only* member of group **informix**. If you make another user of an Informix product a member of group **informix**, you can cause unintended and uncontrolled database access.



Important: When you use a network, propagate the new user name to all the systems on the network. For example, on some systems you must run the **ypmake** utility.

Providing for Storage-Management Software

Many storage-manager systems, such as Solstice Backup, do not work with the X/Open Backup Services API (XBSA). Informix recommends that you use the Informix Storage Manager (ISM) or another product that communicates with XBSA to back up the Informix database. If you intend to use ISM or another storage manager that is compatible with XBSA, you must uninstall incompatible storage-management programs on your system.

To ensure that the XBSA-compatible storage-management software that you choose works as you expect, refer to the *Backup and Restore Guide*.



Important: Before you install and configure storage-management software, the `LOG_BACKUP_MODE` configuration parameter should be set to `NONE`. The database server will hang when logical logs fill if `LOG_BACKUP_MODE` is set to `CONT` or `MANUAL` and no storage-management software is available to back up the logs.

Installing the Database Server Software with the Wizard

This section provides the following installation information:

- Detailed information about how to start the installation wizard
- Procedure for installing Extended Parallel Server

The installation wizard performs the following actions:

- Creates an Informix directory on each node of a cluster
- Installs the database server software
- Configures and initializes a database server

Use the installation wizard to install database server software in any of three different ways, as the following illustration shows.

Local Installation



Remote Installation



Multi-Node Installation



Preinstallation Steps for the Installation Wizard

In addition to creating the **informix** group and user accounts, which is described in [“Creating the informix Group and User Accounts” on page 7](#), you must perform the following two tasks before you start the installation wizard:

- Make sure that the installation wizard can communicate appropriately with remote hosts on which the database server software is to be installed.
- Set the **DISPLAY** environment variable if you want to use the installation wizard. Even if you plan to use the installation wizard in silent mode, you need to set this variable.

Setting Up Communication With Remote Hosts

The installer uses the following two methods to communicate with each remote destination host. It first attempts to use the `rsh` method, and if that fails because it is not set up, it uses the Telnet and FTP method.

- `rsh` Trusted-Host method
This method uses the UNIX `rcp` and `rsh` commands to copy and execute commands on remote computers. You must set up a trust relationship for each computer before the installation wizard can use these commands. For more information, see [“Setting Up Communication With Remote Hosts” on page 10](#).
- Username and password access through Telnet and FTP
This method uses the FTP and Telnet protocols to copy and execute commands on remote computers. Although you do not need to perform any preinstallation steps to use this method, the user who installs the database server software must have a login account on the remote computers and must know the root password of the remote computer. Because not all computers allow users to use Telnet to access a host using the root account, the installer uses the user’s remote account name for Telnet access to the host and then uses the `su` command to run installation commands as root.

Enabling Trusted-Host Access

To enable trusted-host access, add the name of the local host to the **/.rhosts** file on the destination host. For example, if the name of the local workstation is **local1** and the name of the remote host server is **server2**, add the following name to the **/.rhosts** file on **server2**:

```
local1
```

Next, enter the UNIX command `uname -n`. If this command returns the fully qualified domain name that contains the name of the host, add this line to the **/.rhosts** file. The name of the remote computer in this example might be as follows:

```
local1.pdx.informix.com
```

To verify that trusted-host access works correctly, enter the following command on the local host, which is **local1** in this example:

```
rsh local1 ls /etc
```

Using Username and Password Access to the Remote Host

You might prefer not to use the trusted-host access of `rsh`, which can impair security.

Instead of using trusted-host access, when the install program prompts you, enter a valid username and password and the `root` password for the remote computers where you want to install the database server software.

You might enter the **informix** username and password that you created on all nodes where you want to install the database software.

Setting the DISPLAY Environment Variable

To use the installation wizard, you need to set the **DISPLAY** environment variable to the name of the local workstation, as the following examples show. Substitute the name of the local computer for *workstation* in the examples.

In the Bourne shell, enter the following command:

```
DISPLAY=workstation:0.0
export DISPLAY
```

In variants of the C shell, enter the following command:

```
setenv DISPLAY workstation:0.0
```

Starting the Installation Wizard

This section describes how to start the installation wizard. You can install the database server from a remote host if your local host does not have a CD-ROM drive.

To install the database server on a local host

1. Log into the UNIX workstation as superuser.
2. Insert and mount the CD in the CD-ROM drive on the workstation.
3. From the directory where your CD-ROM is mounted, enter the `setup` command. For example, you might enter the following command:

```
$ ./setup
```
4. Follow the instructions that appear on each Installer page.

Installing the Database Server on a Remote Host

To install the database server on a remote host without a CD-ROM drive, choose a workstation that has a CD-ROM drive, and make sure that the destination (or remote) host has given trusted-root access to the local host or that you can enter a valid username and password combination and the root password for the remote host.

To install the database server on a remote host

1. Log into the local UNIX workstation as superuser.
2. Insert and mount the CD in the CD-ROM drive on the workstation with the superuser account.
3. If you are using remote shell access (`rsh`), verify trusted-root access between the local host and the remote destination host with the following command, where *desthost* is the name of the destination host:

```
$ rsh desthost ls /etc
```
4. From the directory where your CD-ROM is mounted, enter the `setup` command. For example, you might enter the following command:

```
$ ./setup
```
5. Follow the instructions that appear in each Installer dialog box.

Using Silent Installation

You can run the install wizard in silent mode if you supply all the necessary information in a file. In silent mode, the install wizard runs in the background and does not request input or display any progress information.

To create the information file and install silently

1. Log into the local UNIX workstation as superuser.
2. Insert and mount the CD in the CD-ROM drive on the workstation.
3. Find the template file, which is called **default-values**, located in the `/etc` directory on the CD. Copy this file to a location on your local drive, such as `/tmp/quietinstall`.
4. Edit the file and replace the template information with information about your system. Comments in the template file explain the possible values.
5. From the directory where your CD is mounted, enter the following command:

```
./setup -s -p /tmp/quietinstall
```

Tip: Although no graphic display appears on the screen, the **DISPLAY** environment variable must still be set. For information, see [“Setting the DISPLAY Environment Variable” on page 12](#).



Navigating in the Installation Wizard

The following table describes the navigation buttons.

Installer Button	Description
Next>	Click this button to move to the next Installer dialog box. When one or more text boxes appear, you might need to enter a value in each text box to activate this button.
<Back	Click this button to move to the previous Installer dialog box.
Cancel	Click this button to terminate the installation program.
Help	Click this button to read help information in each dialog box.

Using On-Line Help

Informix provides help screens that display information about each page and the functions that it performs. Click the **Help** button in each dialog box to see these help screens.

Using the Installation Wizard

This section describes how to install Extended Parallel Server with the installation wizard. [Figure 1](#) shows one of the installation wizard dialog boxes.

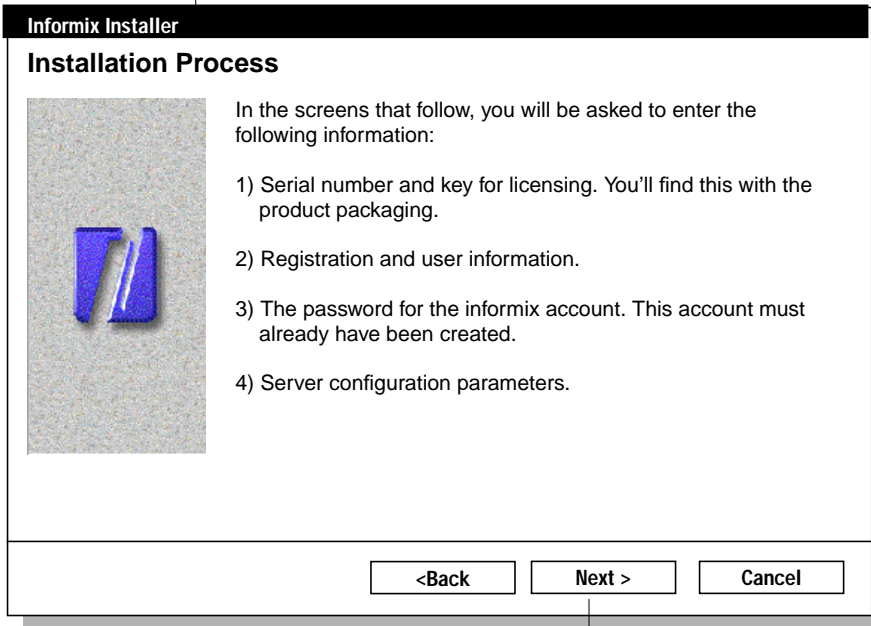


Figure 1
*The Second Page of
the Installation
Wizard*

The **Next** button becomes the **Finish** button when the last page is displayed.

To use the installation wizard to install the database server

1. The first page welcomes you to the installation wizard.
2. The second page, as [Figure 1](#) shows, describes the information you need to provide.
3. The third page displays the Readme File.
Browse the Readme File page to read the most recent information about Extended Parallel Server. Click **Next** when you are finished.
4. Review the Informix licensing agreements and click **Yes** to accept the terms. You must accept these terms to continue.
5. Enter the 11-character `License S/N` from your serial-number keycard and the six-letter `Key` from the serial-number keycard that is contained in the Informix license-agreement envelope.

The `License S/N` consists of three uppercase letters, followed by a pound sign (#), followed by one uppercase letter and six digits.

6. The following four pages request product registration information:
 - Enter your name, title, and company
 - Enter the street address, city, state, and zip code that you want to appear in the product registration
 - Enter your telephone number, fax number, and email address.
 - The last registration page enables you to print your registration form. This information will help Informix provide you with timely updates to Extended Parallel Server.

If you choose to print your registration, a print dialog box appears. Specify a printer to print your registration form. Mail or fax the printed form to Informix at the following address:

Customer Services
4100 Bohannon Drive
Menlo Park, CA 94205
USA

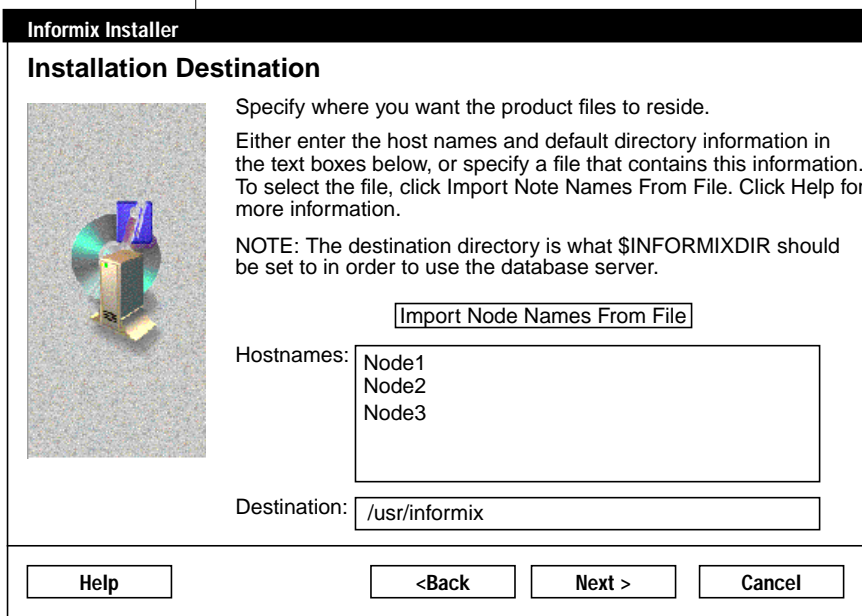
7. The next page requests node names, and host and directory information.

Select the host and directory where you want to install Extended Parallel Server. You can leave the Hostnames field blank if the destination directory is on this local host.

Information requested can either be typed or extracted from a file. To supply information from a file, click **Import Node Names from File** and browse for the file in the dialog box that appears.

Figure 2 shows this screen.

Figure 2
Entering Node Names



Informix Installer

Installation Destination

Specify where you want the product files to reside.

Either enter the host names and default directory information in the text boxes below, or specify a file that contains this information. To select the file, click Import Note Names From File. Click Help for more information.

NOTE: The destination directory is what \$INFORMIXDIR should be set to use the database server.

Hostnames:

Destination:

The **Destination** directory listed, **/usr/informix**, is the default location for Informix database server software. You can change this directory name, but if you do, you must change the setting of the **INFORMIXDIR** environment variable before you can use the database server.

After you enter the node names, either by typing the names, by copying the names from a text source, or by importing the names from a file, click **Next**.

8. A confirmation page appears, listing each node with its destination directory and network address.
In this page, you can add or remove nodes. When you are satisfied that the list of node names is correct, click **Next**.
9. If you are installing the database server software on a remote node where you do not have **rsh** privileges, you are prompted to enter the username and password combination and the root password for the nodes where the software will be installed.
If you have established trusted-host access to these nodes, you are not asked for this information.
10. The next three screens request information that the installation program will use to configure and start a database server.
 - Check the **Configure and Start the Server** checkbox if you want the install program to start an instance of the database server using the default configuration.
You should be able to provide all the information listed in this screen, such as the initial size of the root dbspace and the path to the directory where the message file is written.
 - Enter the name for the database server, such as **SERV**, the path to the database server root dbspace directory, the size of the root dbspace, and the path to the directory where server logs are stored. The text box names are the same as the **ONCONFIG** file configuration parameter names. For detailed information, refer to your *Administrator's Guide*.
 - Enter the number of coservers you want to run on each node and the net type if you plan to run network-based client communication in addition to shared-memory connections.
 - Click **Next** to copy the database server software.
11. As the software is extracted and copied, you see a progress bar for each node.
If your database server contains more than eight nodes, the installation wizard installs the database server software on eight nodes at a time.
12. If any errors occur, the installation wizard displays an error message box. If no errors occur, the completion screen appears.

Installing the Database Server Software from the Command Line

This section provides instructions on how to install Extended Parallel Server from the command line. To install the database server, perform the tasks listed in the following section and then refer to “[Configuring the Database Server](#)” on page 24.

Preinstallation Steps for a Command-Line Installation

In addition to creating the **informix** group and user accounts, as “[Creating the informix Group and User Accounts](#)” on page 7 describes, perform the following two manual preinstallation steps before you install the database server from the command line:

- Set the required environment variables.
- Create a directory for the database files.

Setting Informix Environment Variables

Before you can install an Informix product, you need to set the **INFORMIXDIR** environment variable. To start the database server after you install the database server software, you should also add **INFORMIXDIR** to your **PATH** environment variable.

***Tip:** To prepare the UNIX environment for the installation procedure, log in as user **informix** and set the terminal erase key to the backspace key with the following command:*

```
stty erase CTRL-h
```

CTRL-h *appears as* ^H *on the screen.*



To set the environment variables

1. Set the **INFORMIXDIR** environment variable to the directory that you created for your Informix products.

INFORMIXDIR specifies the directory where the product files are installed.

2. Add **\$INFORMIXDIR/bin** to the **PATH** environment variable so that you can start the database server after you install the database server software.

PATH indicates the directories and search order that the shell uses to search for executable files. Different shells use different commands for setting the **PATH** environment variable. The following example shows how to add **\$INFORMIXDIR/bin** to the **PATH** environment variable if you are using the Bourne shell:

```
export PATH=$INFORMIXDIR/bin/usr/informix:PATH
```

If you are using the C shell, enter the following command:

```
setenv PATH "$INFORMIXDIR/bin:$PATH"
```

3. If you intend to use ISM, set the **PRINTER** environment variable to a valid printer for the **informix** user account.



Important: You must install the client products and database servers that will access the database in the same directory. Make sure that **INFORMIXDIR** is set to this directory before you install the database products.

For more information about Informix environment variables, see the [Informix Guide to SQL: Reference](#).

Creating the Informix Directory

The following steps show how to create the Informix directory.

To create the Informix directory

1. Log in as **root**.
2. Create a new directory for your Informix products.
Your Informix directory can be any directory that is local and is not mounted from another system on the network.
3. Make sure that the directory is owned by user **informix** and has the correct group and access settings. Enter the following three commands:

```
chown informix $INFORMIXDIR  
chgrp informix $INFORMIXDIR  
chmod 775 $INFORMIXDIR
```

Copying the Database Server Software

Before you install the database server software, copy the compressed software files from the installation media to the directory that the **INFORMIXDIR** environment variable specifies.

To copy the database server software

1. Copy the media to the appropriate drive of your computer.
If you are installing from a CD, use the UNIX **mount** command to mount the CD.
2. Make sure that you are in the **INFORMIXDIR** directory.

3. Enter the appropriate **tar**, **cpio**, or other load command.

On some UNIX platforms you can use the following **tar** command to place the product files in the current directory:

```
tar xvf filename
```

In this command, *filename* is the pathname of the tar file that contains the product files for the database server.

For example, if you are installing from a CD-ROM, the tar-file command might be:

```
tar xvf /cdrom/SERVER/online.TAR
```

On some UNIX platforms you can use the following **cpio** command to place the product files in the current directory:

```
cpio -icdumvB < filename
```

In this command, *filename* is the pathname of the **cpio** file that contains the product files for the database server.

4. Read the machine notes file for the product that you are installing to find out about platform-specific configuration information.

Machine notes sometimes contain information on how to install Informix products on a particular computer. Make sure that you read the appropriate Informix machine notes after you load, and before you run, the appropriate installation script for your product.



Important: The exact form of the **tar** or **cpio** command depends on a number of factors, which include your UNIX platform, the type of media, and whether multiple products are bundled on the media. In some cases you need to specify a device name rather than a filename in your **tar** or **cpio** command. If your media is a CD and the CD contains a readme file, check the readme file for the exact form of the **tar** or **cpio** command that you should use.

Installing the Database Server from the Command Line

Before you can install the database server software, you must have created the **informix** user ID and group and performed the preinstallation steps for command-line installation listed in the previous section.

To install the database server

1. Confirm that the file system on each node can hold the entire database server distribution of 180 megabytes.
2. To install one of the following Informix products, find your product in the table and enter the indicated command.

Product	Installation Command
Client SDK	<code>./installclientsdk</code>
Extended Parallel Server	<code>./installonline</code>

After you enter the command for your product, a message displays information about the product and the script requirements.

3. Press RETURN to continue the installation procedure.

The following prompt appears:

```
Enter your serial number (for example, INF#X999999) >
```

4. Enter the 11-character License S/N from the serial-number keycard that is contained in the Informix license-agreement envelope.

The License S/N consists of three uppercase letters, followed by a pound sign (#), followed by one uppercase letter and six digits.

After you press RETURN, the script prompts you to enter your Key.

5. Enter the six-letter Key from the serial-number keycard.

6. Press RETURN to continue.

The installation procedure begins. A series of messages appears on the screen as each directory is installed. The following message indicates that Extended Parallel Server is fully installed:

```
Installation of Extended Parallel Server is complete.
```

After the preceding message, the shell prompt appears. This prompt indicates that you have finished the installation procedure.

If no error messages appear during the installation procedure, the installation is successful. If any error messages appear before the `Installation complete` message, see [“Troubleshooting” on page 29](#).

7. When you finish installing the database server to each node, log out as **root**.

Configuring the Database Server

After you install the database server software as described in [“Installing the Database Server Software from the Command Line” on page 19](#), perform the configuration tasks.

To configure Extended Parallel Server

1. Use your operating-system disk-maintenance utilities to create a disk partition or storage volume for the root dbspace of each coserver.

For best performance, use raw disk partitions or unshared storage volumes.
2. Copy and modify the template `ONCONFIG` file to specify the values for configuration parameters that apply to all coservers. The template `ONCONFIG` file is `$INFORMIXDIR/etc/onconfig.xps`.

For information about standard configuration parameters, refer to your [Administrator's Guide](#).

3. Add an entry for the global ROOTSLICE configuration parameter to the ONCONFIG file.

This parameter specifies a naming template for the root dbspace of each coserver. If your system does not accommodate this naming convention, try to create a symbolic link to the raw device. Extended Parallel Server uses the following format to derive the name of each root dbspace:

```
rootslicename.coserver_id
```

rootslicename is the value of the ROOTSLICE configuration parameter.

coserver_id is the coserver number.

ROOTSLICE is incompatible with the local ROOTNAME configuration parameter. You cannot use ROOTNAME when you use ROOTSLICE.

For information about the ROOTSLICE configuration parameter, refer to the [Administrator's Reference](#).

4. Add an entry for the global PHYSSLICE configuration parameter to the ONCONFIG file.

This configuration parameter specifies a naming template for the physical-log dbspace of each coserver. PHYSSLICE is incompatible with the PHYSDBS configuration parameter.

For information about the PHYSLICE configuration parameter, refer to the [Administrator's Reference](#).

Because Extended Parallel Server initially configures only root dbspaces and mirrors for root dbspaces, you must set the PHYSSLICE configuration parameter to the same value as ROOTSLICE, if you set it at all, before you run Extended Parallel Server for the first time. Thereafter, you can use the **onutil** utility to create additional dbspaces for table data and physical logs. You can assign physical logs to an alternative dbslice after Extended Parallel Server has created that dbslice. For more information about the **onutil** utility, refer to your [Administrator's Guide](#).

5. Add coserver-specific configuration parameters to the **ONCONFIG** file.

These parameters appear within a coserver-specific block. A coserver-specific block of configuration parameters begins with a **COSERVER** entry and ends with the **END** keyword, as the following example shows:

```
COSERVER 1
    NODE xpsnode1
    ...
END
```

Configuration parameters that appear outside a coserver-specific block apply to all coservers. You must configure the **COSERVER** and **NODE** configuration parameters for each coserver.

You can also include any coserver-specific parameters for communication that your instance of Extended Parallel Server might require. Most platforms can autoconfigure the internode communication. To see a description of applicable parameters, refer to the machine notes file.

For more information on how to add coserver-specific configuration parameters, refer to your [Administrator's Guide](#).

6. Add any configuration parameters that your operating system requires to the **ONCONFIG** file.

For information on the configuration parameters that you must specify, refer to your [Administrator's Guide](#) and your machine notes file.

After you complete these steps, you are ready to initialize Extended Parallel Server and bring it on-line. Confirm that your **ONCONFIG** and **sqlhosts** files are properly configured before you attempt to initialize Extended Parallel Server.

Configuring ISM

If you intend to use ISM as your storage manager, you must configure your operating system to start the ISM server at boot time on each node.

To configure ISM

1. Add `$INFORMIXDIR/bin/ism_startup` to one of the **rc** scripts in `/etc/rc2.d` (on Solaris) to start the ISM server when UNIX boots. Make sure the **PRINTER** environment variable is set correctly.
2. Add `$INFORMIXDIR/bin/ism_shutdown -q` to one of the **rc** scripts in `/etc/rc0.d` to shut down the ISM server when UNIX shuts down.
3. If you encounter a problem, execute the following command:

```
$INFORMIXDIR/bin/ism_startup -init
```
4. Create devices and volumes for the ISMData and ISMLogs pools that ON-Bar requires, as described in the [Informix Storage Manager Administrator's Guide](#).

After you configure ISM, you can set the `LOG_BACKUP_MODE` configuration parameter to `CONT` or `MANUAL` to back up the logical logs. Until ISM or another storage manager is configured and available to back up the logical logs, `LOG_BACKUP_MODE` should be set to `NONE`.

Initializing the Database Server

Use the **xctl** utility to start and stop all coservers whenever you initialize or change the operating mode of Extended Parallel Server. The **xctl** utility allows you to execute database server utilities on one or more coservers and to execute operating-system commands on one or more nodes. You must be logged in as either user **root** or **informix** to run the **xctl** utility.

Add `INFORMIXDIR` to your **PATH** environment variable, if you have not already done so, and set the **PRINTER** environment variable if you plan to use ISM.

For more information about the **xctl** command, refer to your [Administrator's Guide](#).

Starting the Database Server and Initializing the Disk Space

If you are starting a new database server, use the following command to initialize the disk space and to bring Extended Parallel Server to on-line mode on all coservers:

```
xctl -C oninit -iy
```



Warning: When you execute this command, all existing data in the disk space for your database server is destroyed. Use the **-i** flag only when you start a new instance of Extended Parallel Server.

The **-C** option indicates that Extended Parallel Server is on every node. The **-iy** arguments initialize the database server and answer **yes** to any questions. The **xctl** utility first initializes **coserver 1**. It waits five seconds before it starts to initialize the remaining coservers.

To verify that all the coservers are in on-line mode, enter the following command:

```
xctl onstat -
```

To verify that all the root dbspaces have been initialized, enter the following command:

```
xctl onstat -d
```

Typical output for this command might be as follows:

```
Dbspaces
address  number  flags    fchunk  nchunks  flags    owner    name
30978140 1      1002     1        1        M        informix rootdbs.1
1 active, 8192 maximum

Chunks
address  chk/dbs offset  size    free    bpages  flags  pathname
30978208 1    1    0      15000   5571    P0-    /work/dbspaces/rootdbs_1
30978300 1    1    0      15000   0       M0-    /work/dbspaces/mirror_1
1 active, 8192 maximum
```

After Extended Parallel Server is initialized, you can create dbspaces and dbslices for tables. For information on how to create dbspaces and dbslices, refer to your [Administrator's Guide](#).

Starting All Coservers After Initialization

To start all the coservers that are defined in the **ONCONFIG** file, enter the following command:

```
xctl -C oninit -y
```

Shutting Down All Coservers

To shut down all the coservers that are defined in the **ONCONFIG** file, enter the following command:

```
xctl onmode -ky
```

Troubleshooting

This section describes common installation problems and explains how to solve them. If any of the outlined problems persist, contact Informix Technical Support. In North America, call toll-free (800) 274-8184 or send a facsimile to (913) 599-8590. Outside North America, contact your distributor or the nearest Informix subsidiary.

Media-Loading Failures

You might encounter the following difficulties when you load the product files onto your computer from the media that Informix supplies:

- **Problem.** You attempt to load the files, but the **cpio**, **tar**, or other load command fails with an error message, such as one of the following examples:

```
invalid blocksize
cannot open devicename
unknown option
tape read error
```

Solution. The load command probably failed because you entered the wrong command arguments or because the media is damaged. Check the serial-number keycard and verify that you entered the **cpio**, **tar**, or other load command correctly. Try the command again. If it continues to fail, contact Informix Technical Support or the vendor from whom you purchased the product. You might need new media.

- **Problem.** You copy files with the **cpio** command from multiple floppy disks onto a computer. After you enter the **cpio** command, you receive a message, such as one of the following examples:

```
error 9: cannot read input ... type
device/filename to continue.
error 2: cannot read input ... type
device/filename to continue.
```

Solution. Although these messages appear to refer to an error, they might be prompts to insert the next floppy disk and to type the device name to continue. For example, the message `cannot read input` means that no more data is available to read on that floppy disk. Load the next floppy disk, enter the device name exactly as you did for the **cpio** command, and press RETURN. Repeat the process for each floppy disk.

Product-Installation Failures

You might encounter the following difficulties when you run the installation script:

- **Problem.** When you attempt to install Extended Parallel Server, the following message appears:

```
Please rerun this installation procedure as
super-user
```

Solution. Confirm that you are logged in as **root**.

- **Problem.** When you attempt to install Extended Parallel Server, the following message appears:

```
INFORMIXDIR is not set.
```

Solution. No default **INFORMIXDIR** environment variable exists for the installation. You must set the environment variable to the directory where the product is to be installed.

- **Problem.** When you attempt to install Extended Parallel Server, the following message appears:

```
INFORMIXDIR and working directory do not match.
INFORMIXDIR is set to pathname
Current working directory is pathname
```

Solution. To run the installation script, you must be in the **INFORMIXDIR** directory. Make sure that you are in the **INFORMIXDIR** directory.

- **Problem.** After you enter the six-letter Key, the script displays a message such as one of the following examples:

```
chmod: can't change filename
etc/brand: cannot open filename
filename: not owner
```

Solution. This problem usually occurs because you are not logged in as **root**.

Log out and log back in as **root**. You must rerun the installation script and repeat all subsequent steps. This problem can also occur when you attempt installation on a cross-mounted file system. In this situation, log in as **root** on the computer where the cross-mounted file system resides.

- **Problem.** After you enter the six-letter Key, the following message appears when different directories are installed:

```
WARNING: This is an invalid serial number.  
Exiting install script.
```

Solution. You entered an incorrect Key. Make sure that you enter the correct value. The Key is case sensitive.

- **Problem.** After you enter the six-letter Key, the following message appears as different directories are installed:

```
etc/brand: invalid serial number and/or key.  
** Verify serial number and key values. **  
** Restart installation procedure.      **  
** Please type carefully.               **
```

Solution. You did not enter the correct License S/N or Key. Make sure that you enter the correct values. The License S/N and Key are case sensitive.

If you did enter the License S/N or Key correctly, the error can occur because the `stty erase ^h` command was not run properly, which causes certain keystrokes to be misinterpreted. For example, a pound sign (#) might be read as a backspace. If you suspect this problem, rerun the `stty` command before you continue.

You must rerun the installation script and repeat all subsequent steps. The installation might still fail. If it does, reload the product files from the media (see [“Installing the Database Server Software with the Wizard” on page 9](#)), and repeat all subsequent steps.

- **Problem.** After you enter the six-letter Key, the following message appears as different directories are installed:

```
Unknown message number 32766.
```

Solution. You did not set the `INFORMIXDIR` environment variable before you ran the installation script. Set `INFORMIXDIR`, rerun the installation script, and repeat all subsequent steps.

- **Problem.** When you verify trusted access, you see a `permission denied` error message that indicates you have no trusted access to the remote computer.

Solution. Often, an incorrect entry to the local host in the `/.rhosts` file of the destination file causes a `permission denied` error. Make sure that the destination remote host and the local workstation have the same entry in the `/.rhosts` file. For example, if the `/.rhosts` file for `root` contains a full domain name, then the destination remote hostname must also include this full domain name, as in the following example:

```
server1.pdx.informix.com
```

ISM Problems

You might encounter the following difficulties when you run ISM:

- **Problem.** The ISM setup script detected that another storage manager is installed in `/nsr` and conflicts with ISM.

Solution. To set up ISM, uninstall all other storage managers and run the following command:

```
$INFORMIXDIR/bin/ism_startup -init
```

- **Problem.** ON-Bar hangs during a backup while trying to access ISM.

Solution. Make sure that the ISM daemons have been started and that devices and volumes have been added to ISM for the ISMData and ISMLogs pools. These steps are described in [“Configuring ISM” on page 27](#).

- **Problem.** The `PRINTER` environment variable is set incorrectly. You need to set `PRINTER` before you invoke the `ism_startup` script. The printer that this environment variable specifies prints important bootstrap information that you need to perform a full ISM recovery from a disk failure.

Solution. Set the `PRINTER` environment variable to a valid printer in the environment from which the ISM server starts.

- **Problem.** Another storage manager has been installed in the XBSA shared library.

Solution. The ISM setup script removes this symbolic link and saves this library under a different name. If you want to use the previously installed storage manager, use its XBSA shared library.

- **Problem.** The ISM server does not start.

Solution. The system might be slow, or you might have a serious problem. Try to rerun the following command:

```
$INFORMIXDIR/bin/ism_startup -init
```

If the ISM server still does not start, call Informix Technical Support.

- **Problem.** The following message indicates that ISM is not installed properly:

```
Your $INFORMIXDIR ($INFORMIXDIR) does not contain a  
valid ISM installation. Reinstall ISM.
```

Solution. Make sure that ISM binaries are correctly installed in **\$INFORMIXDIR/bin** and reinstall missing or incorrectly installed binaries. If this message appears, at least **nsradmin** is missing.

Access Problems After Installation

You might encounter these difficulties when you access Informix products:

- **Problem.** You try to run an Informix product from the command line, but you receive only a system prompt or a message such as the following one:

```
program: Command not found.
```

Solution. The **INFORMIXDIR** environment variable is not set, or the **PATH** environment variable is set incorrectly. For more information, see [“Installing the Database Server from the Command Line” on page 23](#). If you run the Bourne shell, remember to export **INFORMIXDIR** and **PATH** after you set them.

If the **INFORMIXDIR** and **PATH** environment variables are set correctly, check the path for a file with a duplicate filename. Try placing the **INFORMIXDIR** and **PATH** environment variables first in the path to determine if a duplicate filename is the problem. You might need to rename or delete the file with the same name.

This problem can also occur if the **TERM**, **TERMCAP** (or **TERMINFO**), or **INFORMIXTERM** environment variable is set incorrectly. These environment variables control terminal handling. The **TERM** terminal type must be a valid entry in the **termcap** file (or the **terminfo** directory). If you use **TERMINFO**, you must also set **INFORMIXTERM** to **terminfo**. For more information, see the [Informix Guide to SQL: Reference](#).

- **Problem.** You try to call an Informix product from the command line but receive a message such as the following one:

```
Unknown message number 32766.
```

Solution. The **INFORMIXDIR** environment variable does not point to the correct directory, or the directory name is misspelled. Confirm the value of **INFORMIXDIR** and reset it to the correct directory.

This problem can also occur when the **DBLANG** or **CLIENT_LOCALE** environment variables are set incorrectly. Confirm that your **DBLANG** or **CLIENT_LOCALE** environment variables are set correctly. For information on **DBLANG** or **CLIENT_LOCALE**, refer to the [Informix Guide to GLS Functionality](#).

- **Problem.** You try to call an Informix product from the command line but receive a message such as the following one:

```
Invalid serial number. Please consult your  
installation instructions.
```

Solution. The product might not be installed. Either the installation script was not run, or it failed. You must rerun the installation script and repeat all subsequent steps.

Or possibly the installed product files were copied to another directory that is in the path before `$INFORMIXDIR/bin`. Try placing `$INFORMIXDIR/bin` first in the path.

- **Problem.** You try to call an Informix product from the command line but receive a message such as the following one:

```
cannot attach to shared memory
```

Solution. Check to see if Extended Parallel Server is in off-line or quiescent mode. You must bring the database server to on-line mode before you can use it. For more information about how to install and configure the database server, refer to your [Administrator's Guide](#).

Difficulties While Using the Database Server

You might encounter the following difficulties with environment variables when you use Extended Parallel Server:

- **Problem.** While you are using Extended Parallel Server, you attempt to access an existing database but discover one of the following problems:
 - The database is not listed.
 - You are denied access to the database although you were granted privileges.
 - The database is listed under an incorrect name.

Solution. Extended Parallel Server must be the first database that the system encounters in the database search path. You set the path with the environment variable **DBPATH**. Check to verify that the correct **DBPATH** is listed and that Extended Parallel Server is first in the path. Consider deleting or renaming databases in **DBPATH** that have the same name.

Extended Parallel Server also encounters problems when the UNIX file permissions on the database directory or a higher-level directory prevent access. In addition, you must have an **sqlhosts** entry for Extended Parallel Server in order to establish a connection to Extended Parallel Server.

Informix creates database directories with read, write, and execute permission for the owner and the group **informix** but does not create access permission for others. If you change these permissions or have more restrictive permissions on any higher-level directory, you might not be able to access the database. For example, the **tablename.dat** and **tablename.idx** files for each table are created with read and write permission for the owner and the group but no access permission for others. Changing these permissions can adversely affect access to or security of the tables.

- **Problem.** You attempt to list all databases, but the list is incomplete.
Solution. Make sure that the **DBPATH** environment variable contains the names of all other database servers that the **INFORMIXSERVER** environment variable does not reference.

- **Problem.** You access an Informix application, but the screen display is distorted.

Solution. The **TERM**, **TERMCAP** (or **TERMINFO**), and **INFORMIXTERM** environment variables control computer handling. A distorted display indicates that these environment variables are not set correctly for your computer, and you need to reset one or more of them. For a list of computers that provide support for the UNIX System V **terminfo** library, refer to the machine notes file for your product.

INFORMIXTERM determines whether Informix products access a **termcap** file or **terminfo** directory for screen handling. By default, Informix products look for a **termcap** file. To access a file in the **terminfo** directory, you must set **INFORMIXTERM** to **terminfo**. For more information, see the [Informix Guide to SQL: Reference](#).

TERM specifies the name of the computer that you use, and **TERMCAP** specifies where to look for the **termcap** file. The **TERM** entry must correspond to an entry in the **termcap** file or **terminfo** directory, and **TERMCAP** must provide the correct path to the **termcap** file.

- **Problem.** You successfully install your Informix products and successfully invoke Extended Parallel Server, but you cannot connect to Extended Parallel Server.

Solution. Check for typographical errors and misspellings in your **sqlhosts**, **/etc/hosts**, and **/etc/services** files. Errors and misspellings might also occur in your environment variables, especially **INFORMIXSERVER** and **SQLEXEC**. Make sure that the environment variables are set properly.

If you use a network information system, confirm that the changes you make to the **services** file are properly accessed or available to your computer.

Confirm that file contents, values, and parameters are named consistently.

Also confirm that Extended Parallel Server is configured correctly. For configuration information, see your [Administrator's Guide](#).

- **Problem.** If you experience unusual problems such as networking malfunctions or unexplainable failures, your operating system might need a patch.

Solution. For patch information, read the **SERVERS_8.2** file in the default directory **\$INFORMIXDIR/release**.

- **Problem.** You receive the following error message:

1228 Message number not found in message file

Solution. The products might be installed in an incorrect order. Reinstall the products in the correct order, installing client product software before the database server software.

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