# Installation Guide

# for Informix Products

## on Linux

Informix Dynamic Server, Linux Edition
INFORMIX-Client Software Developer's Kit
INFORMIX-Connect

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# About This Manual

This manual contains instructions for how to install Informix Dynamic Server, Linux Edition Suite on computers that run the Linux operating system. Keep it with your Informix software documentation for easy reference.

## Types of Users

This manual is written for database administrators who install Informix products. This manual assumes that you are familiar with the operating procedures of your computer and with your operating system and that you are authorized to log into your system as **root**.

## Software Dependencies

This manual is written with the assumption that the Red Hat Package Manager (RPM) is installed on your Linux computer. Informix provides most of the products in Informix Dynamic Server, Linux Edition Suite in RPM-package format.

## Installation Packages

The information in this manual describes the basic installation procedures in a Linux environment for the following Informix products:

- Informix Dynamic Server, Linux Edition, Version 7.3
- INFORMIX-Connect, Version 2.1.
- INFORMIX-Client Software Developer's Kit, Version 2.1

You receive or download each product as a separate binary package file.

The Client SDK package file contains the following client products:

- INFORMIX-CLI
- INFORMIX-ESQL/C
- INFORMIX-GLS
- INFORMIX-Object Interface for C++

If you want to install INFORMIX-Driver for JDBC, you must obtain this product separately.

**To obtain INFORMIX-Driver for JDBC**

1. If you are not a member of Intraware, register at http://www.intraware.com/membership/index.html.

2. Follow links to **Informix** from the Intraware download site at http://member.intraware.com/shop/.

For more information about the Client SDK products, refer to the *Getting Started* manual.

# Preparing to Install Informix Products

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 reregistration and the written consent of Informix.

You need the serial number and key to install and activate your Informix products. Use the information in Figure 1 to locate the serial number and key.

*Figure 1*
*Obtaining the Serial Number and Key*

| Distribution Method | Serial Number Location |
|---|---|
| CD-ROM | Retrieve the serial-number keycard from the package of Informix materials. |
| Download from the Internet | Record the serial number and key that display when you download the product. |

The following table describes the general steps in installation and where to find the information you need for each step.

| Action | Where to Look for More Information |
| --- | --- |
| If necessary, upgrade the Linux operating environment with a patch supplied by your Linux distributor. | The Informix Linux Web page, www.informix.com/linux. |
| Create a user and a group, both named **informix.** | "Preparing the Linux Environment" on page 4 |
| Create a top-level directory for the Informix product files. | |
| Set the environment variables that enable Linux to locate your database software and data files. | |
| Use the **rpm** package-manager utility to load the pre-installation package. | "Preparing the Package-Manager Environment" on page 8 |
| Run the installation scripts. | "Running the Installation Scripts" on page 13 |

## Installing Multiple Informix Products

You can install multiple Informix products on the same computer. You can elect to install any one of the product packages listed or install them all in the same session.

You do not have to install the products in a specific order. Beginning with Version 7.3, you can install Dynamic Server first or the Client SDK first.

If you install more than one Informix product, complete all installation procedures for one 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.

## Version Compatibility

This section explains the compatibility between different versions of Informix database servers and client products.

Informix client products that precede Version 2.1 are compatible with Dynamic Server, Version 7.3.

Version 2.1 client products are compatible with the following database servers:

- Informix Dynamic Server, Version 7.x
- Informix Dynamic Server with Advanced Decision Support and Extended Parallel Options, Version 8.1x
- Informix Dynamic Server with Universal Data Option, Version 9.1x
- Informix Dynamic Server, Developer Edition, Version 7.x
- Informix Dynamic Server, Workgroup Edition, Version 7.x
- INFORMIX-SE, Version 7.x

To use database servers earlier than Version 7.3 with Client SDK, Version 2.1, replace the shared ESQL/C libraries at the appropriate time in the installation process, as "Running the Installation Scripts" on page 13 describes.

## Preparing the Linux Environment

You must log in as **root** to complete the processes in this installation.

To adjust the operating-system environment before you install Informix products, you perform the following actions:

- Apply operating-system patches, if necessary
- Create a new user and group, both named **informix**
- Create a directory
- Set environment variables

## Applying Operating-System Patches

Install any patches that upgrade your operating system to run Informix Dynamic Server, Version 7.3.

To find out if you need to apply patches, refer to the Informix Linux Web page at www.informix.com/linux. The Linux Web page contains links to a variety of current information about Informix products for Linux.

## Creating the informix User and Group

The first time that you install an Informix product, you need to create a new user, group, and directory.

If any Informix product is currently installed, skip this section and go directly to "Preparing the Package-Manager Environment" on page 8.

**To create the informix user and group**

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

2.  To create the 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 Linux 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 the 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 the group **informix**. Create a password for the user **informix**.

*Important: When you use a network, propagate the new user name to other systems on the network that must recognize user **informix**. For information about propagating user names, refer to your operating-system documentation for network administrators.*

The user **informix** is the database equivalent of the Linux **root** account, which means that anyone logged in as **informix** has complete access to any Informix products and databases. Make sure that you keep the password for the user **informix** confidential.

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

## Creating the Installation Directory

Use the `mkdir` command to create the top of the directory hierarchy for your Informix products. Observe the following guidelines:

- Use the same directory to install both Dynamic Server and any local client products.
- Create the directory on a local device.

  Do not create the directory on a device that is physically connected to a remote computer.

The default Linux location for Informix products is **/opt/informix**. To use the default, create an **/opt/informix** directory.

You can use a different location than the default path. For example, you can preserve Version 7.2 in **/opt/informix** and create an **/opt/informix73** directory for Version 7.3.

## Setting Environment Variables

At a minimum, you must set the **INFORMIXDIR** and **PATH** environment variables. **INFORMIXDIR** specifies the installation directory for your Informix products. **PATH** specifies the location of executable files.

The following examples set **INFORMIXDIR** to the default installation directory, **/opt/informix**.

| Shell | Commands |
|---|---|
| Bourne Again shell (bash) | `INFORMIXDIR=/opt/informix`<br>`export INFORMIXDIR`<br>`PATH=$PATH:$INFORMIXDIR/bin`<br>`export PATH` |
| C  shell (csh) | `setenv INFORMIXDIR /opt/informix`<br>`setenv PATH ${PATH}:${INFORMIXDIR}/bin` |

*Important:  You must set **INFORMIXDIR** and put `$INFORMIXDIR/bin` in the **PATH** for each user and shell under which you install or use Informix products. As user **root,** you must have these environment variables set to install the Informix products in a Linux environment. User **informix** must have these environment variables set to initialize and run the database server or to use any Client SDK product.*

*Tip:  Use the* `echo $PATH` *command to check if the **$PATH** variable provides access to another file with the same name as an Informix executable file. If such a duplicate filename exists in the path and you cannot rename, move, or delete it, order **PATH** to find the Informix executable file before the other file.*

For more information about the Informix environment variables, see the *Informix Guide to SQL: Reference*.

# Preparing the Package-Manager Environment

This section describes:

- the difference between Informix package files for the RPM and other types of RPM package files.
- the distinction between a package file and a binary package.

A *package file* contains a software package, such as the database server, and a preamble that describes the package. The *binary package* includes an installation utility, sample configuration files, and executable libraries within a compressed archive.

*Important:  The **rpm** package-manager utility does not install Informix software. The package manager transfers pre-installation files to the appropriate location on your hard drive. Each package includes its own installation utility. You can load all the Informix packages with **rpm** at this time, before you run the installation utility for any one of the products.*

## Distinguishing Package Files from Packages

The following table shows how to distinguish each product, package name, and package file.

| Product | Package File | Package Name |
|---|---|---|
| Dynamic Server | **ids-*version-release*.i386.rpm** | **ids-*version-release*** |
| Client SDK | **csdk-*version-release*.i386.rpm** | **csdk-*version-release*** |
| Connect | **iconn-*version-release*.i386.rpm** | **iconn-*version-release*** |

The name of a binary package file or package name contains the following variable information:

- The *version* of the Informix product
- The *release* of this version as an RPM binary package

For example, the package file **csdk-2.10.UC2-1.i386.rpm** contains the **csdk-2.10.UC2-1** package.

## Querying the Package Information

To find out more about the product, including the complete release and update number, use the RPM query option. The following table shows some examples. For more options, refer to your RPM documentation.

| Command | Purpose |
| --- | --- |
| `rpm -qp *` | Queries the names of packages in the binary package files that reside in the current directory |
| `rpm -qpi *.rpm` | Queries detailed information about the binary package files (with the filename extension **.rpm**) that reside in the current directory |
| `rpm -qa` | Queries the names of the installed packages that are maintained in the RPM database |

## Extracting a Binary Package from a Package File

When you use the **rpm -i** command, Informix product packages perform the following actions:

- Check that **root** executes the command
- Check that user **informix** and group **informix** exist
- Create subdirectories of **$INFORMIXDIR** that correspond to the directories in the package file and copy the appropriate product files into each new directory
- Record information from the package-file preamble and the installation date in the RPM database

**To extract an Informix package**

1. Verify that you are logged in as **root**.

   For example, use the Linux `whoami` command.

2. If necessary, mount the drive that contains the Informix package files.

   For example, if you purchase the Informix Dynamic Server, Linux Edition Suite installation CD-ROM, use the Linux `mount` command to mount the CD-ROM drive.

3. Change the current directory to the location of the Informix package files.

4. Optionally, check the package information as "Querying the Package Information" on page 9 describes.

5. Extract the contents of the Informix package file, as the following examples show.

| Command Line | Meaning |
| --- | --- |
| `rpm -iv ids*` | Loads the Dynamic Server package under **/opt/informix** |
| `rpm -iv *.rpm` | Loads the Dynamic Server, Client SDK, and Connect packages under **/opt/informix** |
| `INFORMIXDIR=/opt/informix/LE`<br>`export INFORMIXDIR`<br>`rpm -iv --prefix $INFORMIXDIR *.rpm` | Loads all the Informix packages under the directory that **INFORMIXDIR** is set to, in this example **/opt/informix/LE** |

## Uninstalling a Package

When you use the **rpm -e** command, Informix product packages perform the following actions:

- Check that user **root** executes the command and stops if you use any other login identity, including **informix**
- Delete the package entry from the RPM database
- Delete the files and subdirectories that the previous **rpm -i** command created on the hard drive

You can uninstall an Informix package after you extract it, before or after you run the installation scripts that "Running the Installation Scripts" on page 13 describes. However, the **rpm -e** command does not remove any files or directories that are created by the installation scripts.

**To unload an Informix product package**

1. Verify that you are logged in as user **root**.

2. Use **rpm -qi** to determine the name, version, and release of the package.

3. Use **rpm -e** to remove the product files and directories, as well as the corresponding entry in the RPM database.

   Do not use the longer name of the package file.

The example in Figure 2 queries the RPM database for Dynamic Server, and then uninstalls the database server product.

```
$ rpm -qi ids
Version    : 7.30.UC5
Release    : 1
⋮
$ rpm -ev ids-7.30.UC5-1
```

*Figure 2*
*Querying and*
*Removing a*
*Package*

# Checking the On-Line Files

The Informix product files include on-line informational files that answer specific technical questions. These files are installed in the **$INFORMIXDIR/release/en_us/0333** directory.

Three categories of on-line informational files exist:

- Documentation notes
- Release notes
- Machine notes

The number at the end of each filename indicates the product version number for that file (for example, **SERVERS_7.3** or **DBACCDOC_7.3**).

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

When you use any Informix manual, also refer to the documentation-notes, release-notes, and machine-notes files that are referenced in that manual. References to these files appear in the introduction of each manual.

The following table lists some of the on-line files for Dynamic Server and the Client SDK.

| On-Line File | Purpose |
| --- | --- |
| **INSTALLDOC_7.3** | Documentation-notes files describe features that are not covered in product manuals or that have been modified since publication. The file listed contains the documentation notes for this manual. |
| **SERVERS_7.3 CLIENTS_2.1** | Release-notes files describe compatibility issues, feature differences from earlier versions of Informix products, and how these differences might affect current products. Release notes also contain information about any known problems and their workarounds. |
| **IDS_7.3** | Machine-notes files describe any special actions that are required to configure and use Informix products on your computer. Machine notes are named for the product described. For example, the file listed contains the machine notes for the database server. The machine notes for this product also describe the differences between Informix Dynamic Server, Linux Edition and the features of the database server that run under other operating systems. |



**Important:** *The release-notes and documentation-notes files contain important information for application development. Therefore you need to make this information available to both developers and users. Informix recommends that you print copies of these files and attach a copy to each set of documentation. The machine-notes files contain information primarily of interest to system and database administrators.*

# Running the Installation Scripts

To install and activate your Informix products, you need the serial number and key that Figure 1 on page 2 describes. If you cannot locate the serial number and key, contact your supplier or Informix sales representative.

Figure 3 shows the scripts that the separate packages provide.

***Figure 3***
*Installation Commands for Informix Products*

| Product | Installation Command |
|---------|---------------------|
| INFORMIX-Client Software Developer's Kit | `./installclientsdk` |
| INFORMIX-Connect | `./installconn` |
| Informix Dynamic Server | `./installserver` |

**To run the installation scripts**

1. Verify the following items:
   - You are logged in as **root**.
   - **INFORMIXDIR** is set to the installation directory.

     The installation directory is either the default **/opt/informix** or the path that you specified with the **rpm** -**i** --**prefix** option.
   - User **informix** and group **informix** both exist.

2.   Enter one of the installation commands listed in Figure 3 on page 13.

If you execute the **./installconn** script, you can use one of the options in the following table.

| Option | Meaning |
| --- | --- |
| **-o** | Install Connect and Informix Dynamic Server at the same time. |
| **-s** | Install Connect as a standalone product. |
| **-u** | Upgrade Version 7.x shared libraries to Version 2.1. |

If you do not supply one of these options, the script asks you to specify the database server with which you are installing Connect.

The -**u** argument pertains to client applications that run with Informix database servers, Version 7.1x or Version 7.2x. When you use the -**u** argument, the installation script overwrites Version 7.x shared library files for ESQL/C. (As of Version 7.3, Dynamic Server no longer includes shared ESQL/C library files.)

The -**u** argument enables Version 2.1 client applications to work with INFORMIX-SE on Linux. If you use the -**u** argument, recompile and relink Version 7.x client applications because Version 2.1 shared libraries are not backward compatible with Version 7.x shared ESQL/C libraries. For more information, refer to the machine notes for Client SDK, Version 2.1.

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 your serial-number keycard.

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 your serial-number keycard.

After you press RETURN, the script displays a message about the license agreement with Informix. If your software is licensed for use by an unlimited number of simultaneous users, the script displays a message to that effect.

6.  Press RETURN to continue the installation procedure.

    At this point, the installation procedure begins. A series of messages appear on the screen as each directory is installed. The messages look similar to the following example:

    ```
    Installing directory .
    Installing directory bin
    Installing directory lib
    ```
    ⋮

7.  If no error messages appear during the installation procedure, the installation is successful. If any error messages appear before the `Installation complete` message, see "Solving Installation Problems" on page 17.

*Tip: The installation script changes the owner of $INFORMIXDIR to user **informix** and grants the appropriate privileges. Installation also automatically adjusts the ownership and privileges for subdirectories and files in $INFORMIXDIR that **informix** must access or control.*

The installation scripts do not include INFORMIX-Driver for JDBC.

**To complete the INFORMIX-Driver for JDBC installation**

1.  Create the **java** directory and change to it.

    ```
    cd $INFORMIXDIR
    mkdir java
    cd java
    ```

2.  Enter the following command to create usable Java files:

    ```
    tar xvf ../lib/java/ifmxjapi.tar
    ```

    When the command-line prompt appears, all Java files are installed.

3.  Set the environment variable for the object-interface library. The following shell commands set **LD_LIBRARY_PATH**, but Linux users can set the equivalent **LD_RUN_PATH**.

| Shell | Commands |
|---|---|
| Bourne Again shell (bash) | `LD_LIBRARY_PATH=$LD_LIBRARY_PATH:$INFORMIXDIR/java/lib/` `export LD_LIBRARY_PATH` |
| C shell (csh) | `setenv LD_LIBRARY_PATH` `${LD_LIBRARY_PATH}:${INFORMIXDIR}/java/lib/` |

For more information, use a Web browser and the following URL to access the on-line documentation for INFORMIX-Driver for JDBC:

```
file:$INFORMIXDIR/lib/java/doc/start.html
```

To enable the browser to locate the **start.html** file, specify the absolute pathname of the **$INFORMIXDIR** directory rather than the environment variable **$INFORMIXDIR**. The following example, shows the default location:

```
file:/opt/informix/lib/java/doc/start.html
```

# Preparing to Use Your Informix Products for Linux

Your Informix product might require additional installation and configuration tasks not covered in this guide. For information on what additional environment variables to set, how to set up the **sqlhosts** and the **onconfig.std** files, and other configuration tasks, see the *Administrator's Guide*.

*Important: Before you can connect a client application to a database server, confirm that you have configured your database server environment.*

## Setting the Terminal Characteristics

The **TERM** and **TERMCAP** environment variables control terminal handling for the Informix products that you use on Linux. **TERM** specifies the name of the terminal you use, and **TERMCAP** specifies where to look for the **termcap** file. The **TERM** entry must correspond to an entry in the **termcap** file, and **TERMCAP** must provide the correct path to the **termcap** file.

A distorted display indicates that these environment variables are not set correctly for your terminal. To check for distortion, run a text editor program, such as **vi**.

If you need to modify the **termcap** file, make the modifications in a copy of the file and reference the modified file with the **TERMCAP** environment variable.

*Warning: Do not set **INFORMIXTERM** to a **terminfo** directory for screen handling. Informix Dynamic Server, Linux Edition does not support **terminfo.** Allow the default setting, which looks for a **termcap** file.*

## Localizing Informix Products

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

Each installation script installs the following GLS locale and code-set conversion files in the **$INFORMIXDIR/gls** directory on your hard disk:

- 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, see the *Informix Guide to GLS Functionality*. ◆

# Solving Installation Problems

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

## Package-Manager Failures

The problems in this section can occur while you use the **rpm** utility to load or unload an Informix package:

- ***Problem.*** The command displays one of the following messages:

    ```
    ERROR: You must be root to install product.
    ERROR: You must be root to uninstall product.
    ```
    ***Solution.*** Check that you are logged in as **root**.

■ **Problem.** The command displays the following message:

```
ERROR: Failed to locate directory with write
permissions.
```

**Solution.** Check that you are logged in as **root**. Use the `chmod` command to grant write permission on the current directory, and then run the **rpm** command again.

■ **Problem.** The command displays one of the following messages:

```
ERROR: User informix must exist to install product.
ERROR: Group informix must exist to install product.
```

**Solution.** Follow the instructions in "Creating the informix User and Group" on page 5 to create the necessary user or group.

■ **Problem.** The command displays the following message:

```
package product is already installed
ERROR: product.rpm cannot be installed
```

**Solution.** If you want to reinstall the product, uninstall the previous package, as described in "Extracting a Binary Package from a Package File" on page 9.

■ **Problem.** The **rpm -e** command displays the following message:

```
package product is not installed
```

**Solution.**You have probably misspelled the package name. Use the **rpm -i** option to print the name, version, and release. Rerun the **rpm -e** command with the correct specification for package. For an example, refer to Figure 2 on page 11. For information about specifying a package name, refer to "Distinguishing Package Files from Packages" on page 8.

■ **Problem.** The command displays the following message:

```
rpm: arguments to --prefix must begin with a /
```

**Solution.** Specify the absolute path, as the following example shows:

```
rpm -i --prefix /opt/ids73 ids*
```

## Install-Script Failures

The problems in this section can occur while you attempt to run the **installconn**, **installclientsdk**, or **installserver** script:

- *Problem.* The script displays the following message:

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

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

- *Problem.* The script displays the following message:

    ```
    INFORMIXDIR is not set.
    ```

    *Solution.* This problem occurs because a default **INFORMIXDIR** environment variable does not exist. For information on how to set **INFORMIXDIR**, refer to "Setting Environment Variables" on page 6.

- *Problem.* The script displays the following message:

    ```
    INFORMIXDIR and working directory do not match.
    INFORMIXDIR = pathname
    Current working directory = pathname
    ```

    *Solution.* To run the installation script, you must be in the **$INFORMIXDIR** directory.

    To check that the value of the **INFORMIXDIR** environment variable matches the directory path where you loaded the package, use the following command:

    ```
    echo $INFORMIXDIR
    ```

    If necessary, reset the **INFORMIXDIR** environment variable, as "Setting Environment Variables" on page 6 describes.

    If **$INFORMIXDIR** points to the correct path, change to the correct directory with the following command:

    ```
    cd $INFORMIXDIR
    ```

- *Problem.* After you enter the six-letter key, the script displays the following message:

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

    *Solution.* This problem occurs because you did not enter the correct key. Make sure that you enter the correct value.

■ **Problem.** After you enter the six-letter key, the script displays the following message:

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

**Solution.** This message usually results from a typing error in the serial number or key. Check the serial number and key, then enter them again. To locate the serial number and key, refer to Figure 1 on page 2.

If the serial number and key are correct, set the erase character. An incorrect setting can cause the installation script to misinterpret a keystroke in a valid serial number or key as a backspace. For example, the installation script might interpret a pound sign (#) as an erase or backspace.

To set the erase character, log in as **root** and then enter the following command:

```
stty erase CTRL-h
```

CTRL-h **looks like** ^H **on the screen.**

After you execute the stty command, repeat the steps in "Running the Installation Scripts" on page 13 and all subsequent steps. If this problem occurs again, repeat the steps in "Extracting a Binary Package from a Package File" on page 9 and all subsequent steps.

■ **Problem.** After you enter the six-letter key, the script displays the following message:

```
Unknown message number 32766.
```

**Solution.** This problem occurs when you do not set **INFORMIXDIR** before you run the installation script. Set **INFORMIXDIR** and repeat the steps in "Running the Installation Scripts" on page 13 and all subsequent steps.

## Access Problems After Installation

The problems in this section can occur when you try to start an Informix client product:

- ■ **Problem.** When you try to start a client product, Linux displays a system prompt or a message similar to the following example:

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

  **Solution.** This problem occurs when Linux cannot find the executable file. Check the following items (in order):

  - ❑ To verify the settings of the **INFORMIXDIR** and **PATH** environment variables, refer to "Setting Environment Variables" on page 6.

  - ❑ If **INFORMIXDIR** and **PATH** are correct, you might need to set the **TERM** and **TERMCAP** environment variables, as "Setting the Terminal Characteristics" on page 16 describes.

- ■ **Problem.** When you try to start a client product, Linux displays a message similar to the following example:

  ```
  Unknown message number 32766.
  ```

  **Solution.** This problem usually occurs when **INFORMIXDIR** does not point to the correct directory. Make sure that **INFORMIXDIR** is set to the correct directory.

  **GLS**

  This problem also can occur when you use the **DBLANG** or **CLIENT_LOCALE** environment variables, if they are incorrect. Make sure that **DBLANG** and **CLIENT_LOCALE** are correct. For more information, see the *Informix Guide to GLS Functionality*. ♦

- ■ **Problem.** When you try to start a client product, Linux displays a message similar to the following example:

  ```
  Invalid serial number or mistyped key.
  Please consult your installation instructions.
  ```

  **Solution.** This problem occurs when the product is not installed. Repeat the steps in "Running the Installation Scripts" on page 13 and all subsequent steps.

  This problem can also occur if the **PATH** environment variable provides access to another file with the same name as the Informix executable file before it provides access to the Informix executable file. For a tip on how to fix the **PATH** environment variable, refer to "Setting Environment Variables" on page 6.

■ **Problem.** When you try to send a command to a client product, the product displays a message similar to the following example:

```
cannot attach to shared memory
```

**Solution.** This problem occurs when you try to use a database server, but the database server is in off-line mode or quiescent mode. Bring the database server to on-line mode before you use it. For more information, see the *Administrator's Guide*.

## Difficulties While Using Informix Products

The problems in this section can occur while you run Informix client products. These problems are not directly related to installation, but they do involve environment variables:

■ **Problem.** When you try to list all databases, the list is incomplete.

**Solution.** Make sure that the **DBPATH** environment variable contains the names of all other database servers not referenced by the **INFORMIXSERVER** environment variable.

■ **Problem.** When you start a client product, the screen display is distorted.

**Solution.** This problem occurs when the **TERM** or **TERMCAP** environment variables are set incorrectly. For information about how to set these variables, refer to "Setting the Terminal Characteristics" on page 16 and to the *Informix Guide to SQL: Reference*.

■ **Problem.** Unusual problems occur, such as networking problems or unexplainable crashes.

**Solution.** This problem occurs when your operating system needs a patch. For patch information, see the machine-notes file in **$INFORMIXDIR/release/en_US/0333**.

■    ***Problem.*** After you successfully install your client products and successfully invoke your database server, you cannot connect to the database server.

   ***Solution.*** This problem usually occurs when one of the following files or environment variables has an incorrect value or a typographical error:

   ❑   **sqlhosts**
   ❑   **/etc/hosts**
   ❑   **/etc/services**
   ❑   **INFORMIXSERVER**
   ❑   **SQLEXEC**

   This problem can also occur when you use a network information system if your computer cannot access the values in the **services** file.

   Additionally, this problem can occur if your database server is not configured correctly. For configuration information, see the *Administrator's Guide*.

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