



**IBM Informix Dynamic Server Installation Guide  
for UNIX and Linux**





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for UNIX and Linux**

**Note:**

Before using this information and the product it supports, read the information in "Notices" on page D-1.

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## Introduction

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### In This Introduction

This introduction provides an overview of the information in this manual and describes the conventions it uses.

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### About This Manual

This guide explains how to install IBM Informix Dynamic Server Enterprise and Workgroup Editions on UNIX and Linux operating systems.

The following IBM Informix products can be installed with Dynamic Server:

- IBM Informix BladeManager
  - IBM Informix Datablade Developer's Kit
  - IBM Informix JDBC Driver (JDBC)
  - IBM Informix Connect (IConnect)
- or
- IBM Informix Client Software Developer's Kit (Client SDK)

IBM Informix Server Administrator (ISA) is available on the Dynamic Server media to be separately installed.

For a description of Dynamic Server and these other IBM Informix products, see *IBM Informix: Getting Started Guide*.

## Types of Users

This manual is written for database administrators (DBAs) who install IBM Informix products. This guide assumes that you are familiar with the operating procedures of your computer and with your operating system. For information about your operating system, see your UNIX or Linux documentation.

## Organization of This Manual

This manual includes the following chapters:

- This introduction discusses the organization of the manual and the intended audience and introduces you to the IBM Informix products available with Dynamic Server.
- Chapter 1, “Preparing to Install Dynamic Server,” on page 1-1 details preparing to install Dynamic Server.
- Chapter 2, “Installing Dynamic Server,” on page 2-1 details the Dynamic Server installation process. It includes:
  - Installation methods
  - Installing Dynamic Server

In addition, it discusses installing Informix Server Administrator (ISA).

- Chapter 3, “Post-Installation Tasks,” on page 3-1 discusses post-installation tasks, including:
  - Configuring the database server
  - Using the demonstration database server
  - Additional configuration task information
- Chapter 4, “Uninstalling Dynamic Server,” on page 4-1 discusses uninstalling Dynamic Server.
- Appendix A, “Setting Up Multiple Residency,” on page A-1 discusses multiple residency.
- Appendix B, “Solving Installation Problems,” on page B-1 discusses problems you might have with installation.
- An Accessibility appendix describes how to read syntax diagrams in the HTML version of this manual using a screen reader.
- A Notices appendix describes IBM products, features, and services.
- An index directs you to areas of particular interest.

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## Upgrading the Database Server

For information on migrating your database server from a previous version of Dynamic Server to Version 10.0, and for information on migrating your data, see the *IBM Informix: Migration Guide*, Version 10.0.

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## Documentation Conventions

This section describes the conventions that this manual uses. These conventions make it easier to gather information from this and other volumes in the documentation set.

The following conventions are discussed:

- Typographical conventions
- Other conventions



- Syntax diagrams
- Command-line conventions
- Example code conventions

## Typographical Conventions

This manual uses the following conventions to introduce new terms, illustrate screen displays, describe command syntax, and so forth.

Convention	Meaning
KEYWORD	Keywords of SQL, SPL, and some other programming languages appear in uppercase letters in a serif font.
<i>italics</i>	Within text, new terms and emphasized words appear in italics. Within syntax and code examples, variable values that you are to specify appear in italics.
<b>boldface</b>	Names of program entities (such as classes, events, and tables), environment variables, file and pathnames, and interface elements (such as icons, menu items, and buttons) appear in boldface.
monospace	Information that the product displays and information that you enter appear in a monospace typeface.
KEYSTROKE	Keys that you are to press appear in uppercase letters in a sans serif font.
>	This symbol indicates a menu item. For example, “Choose <b>Tools</b> > <b>Options</b> ” means choose the <b>Options</b> item from the <b>Tools</b> menu.

**Tip:** When you are instructed to “enter” characters or to “execute” a command, immediately press RETURN or ENTER after the entry. When you are instructed to “type” the text or to “press” other keys, no RETURN is required.




## Syntax Diagrams

This guide uses syntax diagrams built with the following components to describe the syntax for statements and all commands other than system-level commands.

Syntax diagrams depict SQL and command-line statements in the following ways:

- The symbols at the beginning and end of statements are double arrows.
- The symbols at the beginning and end of syntax segment diagrams are vertical lines.
- How many times a loop can be repeated is explained in a diagram footnote.
- Syntax statements that are longer than one line continue on the next line.
- Product or condition-specific paths are explained in diagram footnotes.

The following table describes syntax diagram components.

Component represented in PDF	Component represented in HTML	Meaning
	>>-----	Statement begins.
	----->	Statement continues on next line.
	>-----	Statement continues from previous line.

Component represented in PDF	Component represented in HTML	Meaning
	-----><	Statement ends.
	-----SELECT-----	Required item.
	+-----+ '-----LOCAL-----'	Optional item.
	+-----+ +-----+ '-----UNIQUE-----'	Required item with choice. One and only one item must be present.
	+-----+ +-----+ '-----FOR READ ONLY-----'	Optional items with choice are shown below the main line, one of which you might specify.
	.-----. +-----+ '-----PREVIOUS-----'	The values below the main line are optional, one of which you might specify. If you do not specify an item, the value above the line will be used as the default.
	.-----. v +-----+ +-----+ '-----table_name-----'	Optional items. Several items are allowed; a comma must precede each repetition.
	>>-   Table Reference   -><	Reference to a syntax segment.
Table Reference 	-----  +-----+ +-----+ '-----synonym-----'	Syntax segment.

## How to Read a Command-Line Syntax Diagram

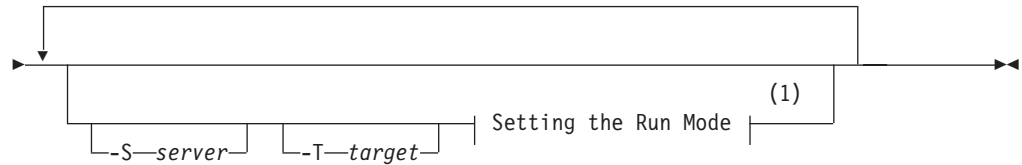
The following command-line syntax diagram uses some of the elements listed in the table in the previous section.

### Creating a No-Conversion Job

```

▶▶ onpladm create job job [p project] -n -d device -D database
▶ -t table

```

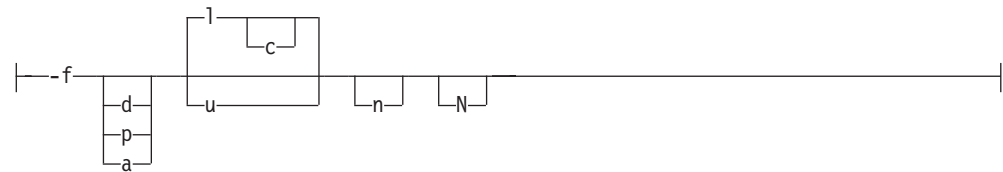


**Notes:**

- 1 See page 17-4

The second line in this diagram has a segment named “Setting the Run Mode,” which according to the diagram footnote, is on page 17-4. This segment is shown in the following segment diagram (the diagram uses segment start and end components).

**Setting the Run Mode:**



To construct a command correctly, start at the top left with the command. Follow the diagram to the right, including the elements that you want. The elements in the diagram are case sensitive.

The Creating a No-Conversion Job diagram illustrates the following steps:

1. Type **onpladm create job** and then the name of the job.
2. Optionally, type **-p** and then the name of the project.
3. Type the following required elements:
  - **-n**
  - **-d** and the name of the device
  - **-D** and the name of the database
  - **-t** and the name of the table
4. Optionally, you can choose one or more of the following elements and repeat them an arbitrary number of times:
  - **-S** and the server name
  - **-T** and the target server name
  - The run mode. To set the run mode, follow the Setting the Run Mode segment diagram to type **-f**, optionally type **d**, **p**, or **a**, and then optionally type **l** or **u**.
5. Follow the diagram to the terminator.

Your diagram is complete.

**Keywords and Punctuation**

Keywords are words reserved for statements and all commands except system-level commands. When a keyword appears in a syntax diagram, it is

shown in uppercase letters. When you use a keyword in a command, you can write it in uppercase or lowercase letters, but you must spell the keyword exactly as it appears in the syntax diagram.

You must also use any punctuation in your statements and commands exactly as shown in the syntax diagrams.

## Identifiers and Names

Variables serve as placeholders for identifiers and names in the syntax diagrams and examples. You can replace a variable with an arbitrary name, identifier, or literal, depending on the context. Variables are also used to represent complex syntax elements that are expanded in additional syntax diagrams. When a variable appears in a syntax diagram, an example, or text, it is shown in *lowercase italic*.

The following syntax diagram uses variables to illustrate the general form of a simple SELECT statement.

►►—SELECT—*column\_name*—FROM—*table\_name*—◄◄

When you write a SELECT statement of this form, you replace the variables *column\_name* and *table\_name* with the name of a specific column and table.

## Example Code Conventions

Examples of SQL code occur throughout this manual. Except as noted, the code is not specific to any single IBM Informix application development tool.

If only SQL statements are listed in the example, they are not delimited by semicolons. For instance, you might see the code in the following example:

```
CONNECT TO stores_demo
...

DELETE FROM customer
  WHERE customer_num = 121
...

COMMIT WORK
DISCONNECT CURRENT
```

To use this SQL code for a specific product, you must apply the syntax rules for that product. For example, if you are using DB–Access, you must delimit multiple statements with semicolons. If you are using an SQL API, you must use EXEC SQL at the start of each statement and a semicolon (or other appropriate delimiter) at the end of the statement.

**Tip:** Ellipsis points in a code example indicate that more code would be added in a full application, but it is not necessary to show it to describe the concept being discussed.

For detailed directions on using SQL statements for a particular application development tool or SQL API, see the manual for your product.

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## Additional Documentation

For additional information, refer to the following types of documentation:

- Online notes
- Informix error messages
- Manuals
- Online help

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## IBM Informix Information Center

The Informix Dynamic Server Information Center integrates the entire IBM Informix Dynamic Server 10.0 and IBM Informix Client SDK (CSDK) 2.90 documentation sets in both HTML and PDF formats. The Information Center provides full text search, a master index, logical categories, easy navigation, and links to troubleshooting and support files. The IBM Informix Information Center site is at <http://publib.boulder.ibm.com/infocenter/ids9help/index.jsp>.

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## Online Notes

The following sections describe the online files that supplement the information in this manual. Please examine these files before you begin using your IBM Informix product. They contain vital information about application and performance issues.

Online File	Description	Format
TOC Notes	The TOC (Table of Contents) notes file provides a comprehensive directory of hyperlinks to the release notes, the fixed and known defects file, and all the documentation notes files for individual manual titles.	HTML
Documentation Notes	The documentation notes file for each manual contains important information and corrections that supplement the information in the manual or information that was modified since publication.	HTML, text
Release Notes	The release notes file describes feature differences from earlier versions of IBM Informix products and how these differences might affect current products. For some products, this file also contains information about any known problems and their workarounds.	HTML, text
Machine Notes	The machine notes file describes any platform-specific actions that you must take to configure and use IBM Informix products on your computer.	text
Fixed and Known Defects File	This text file lists issues that have been identified with the current version. It also lists customer-reported defects that have been fixed in both the current version and in previous versions.	text

## Locating Online Notes

Online notes are available from the IBM Informix Library at <http://www.ibm.com/software/data/informix/pubs/library/> and in the IBM

Informix Information Center at <http://publib.boulder.ibm.com/infocenter/ids9help/index.jsp>. Additionally you can locate these files before or after installation as described below.

### Before Installation

All online notes are located in the **/doc** directory of the product CD. The easiest way to access the documentation notes, the release notes, and the fixed and known defects file is through the hyperlinks from the TOC notes file.

The machine notes file and the fixed and known defects file are only provided in text format.

### After Installation

On UNIX platforms in the default locale, the documentation notes, release notes, and machine notes files appear under the **\$INFORMIXDIR/release/en\_us/0333** directory.

## Online Notes Filenames

Online notes have the following file formats:

Online File	File Format	Examples
TOC Notes	<i>prod_os_tocnotes_version.html</i>	<b>ids_win_toc_10.0.html</b>
Documentation Notes	<i>prod_bookname_docnotes_version.html/txt</i>	<b>ids_hpl_doc_10.0.html</b>
Release Notes	<i>prod_os_relnotes_version.html/txt</i>	<b>ids_unix_relnotes_10.0.txt</b>
Machine Notes	<i>prod_machine_notes_version.txt</i>	<b>ids_machine_notes_10.0.txt</b>
Fixed and Known Defects File	<i>prod_defects_version.txt</i>	<b>ids_defects_10.0.txt</b> <b>client_defects_2.90.txt</b>

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## Informix Error Messages

This file is a comprehensive index of error messages and their corrective actions for the Informix products and version numbers.

On UNIX platforms, use the **finderr** command to read the error messages and their corrective actions.

You can also access these files from the IBM Informix library at <http://www.ibm.com/software/data/informix/pubs/library/>.

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## Manuals

### Online Manuals

A CD that contains your manuals in electronic format is provided with your IBM Informix products. You can install the documentation or access it directly from the CD. For information about how to install, read, and print online manuals, see the installation insert that accompanies your CD. You can also obtain the same online manuals from the IBM Informix Library at <http://www.ibm.com/software/data/informix/pubs/library/> or in the or in the IBM Informix Information Center at <http://publib.boulder.ibm.com/infocenter/ids9help/index.jsp>

## Printed Manuals

To order hardcopy manuals, contact your sales representative or visit the IBM Publications Center Web site at <http://www.ibm.com/software/howtobuy/data.html>.

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## Online Help

IBM Informix online help, provided with each graphical user interface (GUI), displays information about those interfaces and the functions that they perform. Use the help facilities that each GUI provides to display the online help.

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## Accessibility

IBM is committed to making our documentation accessible to persons with disabilities. Our books are available in HTML format so that they can be accessed with assistive technology such as screen reader software. The syntax diagrams in our manuals are available in dotted decimal format, which is an accessible format that is available only if you are using a screen reader. For more information about the dotted decimal format, see the Accessibility appendix.

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## IBM Informix Dynamic Server Version 10.0 and CSDK Version 2.90 Documentation Set

The following tables list the manuals that are part of the IBM Informix Dynamic Server, Version 10.0 and the CSDK Version 2.90, documentation set. PDF and HTML versions of these manuals are available at <http://www.ibm.com/software/data/informix/pubs/library/> or in the the IBM Informix Information Center at <http://publib.boulder.ibm.com/infocenter/ids9help/index.jsp>. You can order hardcopy versions of these manuals from the IBM Publications Center at <http://www.ibm.com/software/howtobuy/data.html>.

*Table 1. Database Server Manuals*

Book Title	Description
<i>IBM Informix: Backup and Restore Guide</i>	This manual explains the concepts and methods required to back up and restore data with the ON-Bar and <b>ontape</b> utilities. It includes information on the <b>archecker</b> utility.
<i>IBM Informix: Database Design and Implementation Guide</i>	This guide documents how to design, implement, and manage Informix databases. It includes data models that illustrate different approaches to database design and shows you how to use SQL to implement and manage databases.
<i>IBM Informix: DataBlade API Function Reference</i>	This manual describes the API functions.
<i>IBM Informix: DataBlade API Programmer's Guide</i>	This manual describes the API, the C-language application programming interface that is provided with Dynamic Server. Use the API to develop client and server applications that access data stored in a Dynamic Server database.
<i>IBM Informix: DB–Access User's Guide</i>	This guide describes how to use the DB–Access utility to access, modify, and retrieve information from Informix database servers.
<i>IBM Informix: Dynamic Server Administrator's Guide</i>	This user guide for system and database server administrators discusses the concepts and procedures for managing Dynamic Server. It is intended to help you understand, configure, and use the database server. The short manual name is <i>IBM Informix: Administrator's Guide</i> .

Table 1. Database Server Manuals (continued)

Book Title	Description
<i>IBM Informix: Administrator's Reference</i>	This reference manual provides the syntax of database server utilities such as <b>onmode</b> and <b>onstat</b> , and comprehensive descriptions of configuration parameters, SMI tables in the <b>sysmaster</b> database, logical-log records, disk structures, files that the database server uses, trapping errors, event alarms, and message-log messages.
<i>IBM Informix: Dynamic Server Getting Started Guide</i>	This guide provides an overview of IBM Informix products, summarizes the new features in this release, and provides a roadmap to user tasks in the documentation set for the database server.
<i>IBM Informix: Dynamic Server Enterprise Replication Guide</i>	This guide contains information to help you understand the concepts of data replication, design your own Enterprise Replication system, install Enterprise Replication, and administer and manage data replication throughout your enterprise.
<i>IBM Informix: Dynamic Server Installation Guide for UNIX and Linux</i>	This guide contains instructions for installing Dynamic Server on UNIX and Linux. It also describes how to solve common installation problems.
<i>IBM Informix: Dynamic Server Installation Guide for Microsoft Windows</i>	This guide contains instructions for installing Dynamic Server on Windows.
<i>IBM Informix: Dynamic Server Performance Guide</i>	This guide explains how to configure and operate Dynamic Server to achieve optimum performance and optimize SQL queries. The short manual name is <i>IBM Informix Performance Guide</i> .
<i>IBM Informix: Error Messages</i>	This HTML file in the IBM Informix Online Documentation site includes causes and solutions for numbered error messages that you might receive from IBM Informix products. Use the UNIX <b>finderr</b> utility or the Windows <b>Informix Error Messages</b> utility to locate the latest information on error messages.
<i>IBM Informix: GLS User's Guide</i>	This manual describes the Global Language Support (GLS), which allows IBM Informix client products and database servers to handle different languages, cultural conventions, and code sets.
<i>IBM Informix: Guide to SQL Reference</i>	This manual describes the Informix system catalog tables, data types, environment variables, the <b>stores_demo</b> and <b>superstores_demo</b> databases. It also contains a glossary.
<i>IBM Informix: Guide to SQL Syntax</i>	This manual contains the complete syntax descriptions of all Informix (SQL) and Stored Procedure Language (SPL) statements, and functions.
<i>IBM Informix: Guide to SQL Tutorial</i>	This tutorial provides instructions for using SQL to query and modify data in a relational database. It discusses how to embed SQL in programs, create and use stored-procedure language (SPL) routines, create and use triggers, and use casts for extended data types.
<i>IBM Informix: High-Performance Loader User's Guide</i>	This guide describes how to use the High-Performance Loader (HPL) to efficiently load and unload large quantities of data to or from an Informix database.
<i>IBM Informix: Migration Guide</i>	This manual describes the tasks that you perform when you move data from one location to another and when you migrate existing databases to various Informix database servers. It discusses such database server utilities as <b>dbexport</b> , <b>dbimport</b> , <b>dbload</b> , <b>dbschema</b> , <b>onload</b> , <b>onunload</b> , and <b>onmode -b</b> .
<i>IBM Informix: Optical Subsystem Guide</i>	This guide describes how to use the Optical Subsystem, a utility that supports the storage of TEXT and BYTE data on optical disks.



Table 1. Database Server Manuals (continued)

Book Title	Description
<i>IBM Informix: R-Tree Index User's Guide</i>	This guide describes the R-tree secondary access method and how to create an R-tree index on user-defined types.
<i>IBM Informix: SNMP Subagent Guide</i>	This manual describes the subagent that allows a Simple Network Management Protocol (SNMP) network manager to monitor the status of Informix database servers. It includes a glossary of terms used in the guide.
<i>IBM Informix: Storage Manager Administrator's Guide</i>	This guide describes IBM Informix Storage Manager (ISM). ISM receives backup and restore requests from ON-Bar and directs the data to and from storage volumes that are mounted on storage devices.
<i>IBM Informix: Trusted Facility Guide</i>	This guide describes the secure auditing facility and includes information on how to set up and administer audit trails, and extract and interpret audit records.
<i>IBM Informix: User-Defined Routines and Data Types Developer's Guide</i>	This guide explains how to define new data types and create UDRs on Dynamic Server. It describes the tasks that you must perform to extend operations on data types, create new casts, extend operator classes for secondary access methods, write opaque data types, and create and register routines.
<i>IBM Informix: Virtual-Index Interface Programmer's Guide</i>	This manual explains how to use the Virtual-Index Interface (VII), typically in a DataBlade module, to create a secondary access method. A <i>virtual</i> index accesses data from a source outside the database server or specific data inside large objects. The manual describes the syntax, API function calls, and data structures.
<i>IBM Informix: Virtual-Table Interface Programmer's Guide</i>	This manual explains how to create a primary access method with the Virtual-Table Interface (VTI). A <i>virtual</i> table is dynamically created from a source outside the database server or specific data inside of large objects. The manual describes the syntax, API function calls, and data structures.
<i>IBM Informix: J/Foundation Developer's Guide</i>	This guide explains how to use J/Foundation to write user-defined routines (UDRs) in the Java language. It describes the library of classes and interfaces that allow programmers to create and execute UDRs that access Dynamic Server with J/Foundation.

Table 2. Client Manuals for Dynamic Server

Book Title	Description
<i>IBM Informix: Client Products Installation Guide</i>	This guide contains instructions for installing the IBM Informix Client Software Developer's Kit and IBM Informix Connect on Linux, UNIX, and Windows.
<i>IBM Informix: Embedded SQLJ User's Guide</i>	This manual describes how to use IBM Informix Embedded SQLJ to embed SQL statements in Java programs. When you run a SQLJ program, it uses IBM Informix JDBC Driver to connect to the database.
<i>IBM Informix: ESQL/C Programmer's Manual</i>	This manual explains how to use ESQL/C, the Informix implementation of embedded SQL for C, to create client applications with database-management capabilities.
<i>IBM Informix: JDBC Driver Programmer's Guide</i>	This guide describes how to install, load, and use IBM Informix JDBC Driver to connect to an Informix database from a Java application or applet. You can use IBM Informix JDBC Driver to write user-defined routines.

Table 2. Client Manuals for Dynamic Server (continued)

Book Title	Description
<i>IBM Informix: MaxConnect User's Guide</i>	This manual describes how to install, administer, and tune performance for MaxConnect. MaxConnect enables the database server to support nearly unlimited numbers of client connections and reduces response times and CPU usage.
<i>IBM Informix: Object Interface for C++ Programmer's Guide</i>	This guide describes how C++ and DataBlade developers can develop IBM Informix client applications with the C++ programming language.
<i>IBM Informix Object Translator</i>	This online help describes how to use the IBM Informix Object Translator, a client-side tool, to integrate object-based applications and XML documents into the database.
<i>IBM Informix: ODBC Driver Programmer's Manual</i>	This manual explains how to use the IBM Informix ODBC Driver to access Informix databases and the database server. The IBM Informix ODBC Driver is the IBM Informix implementation of the Microsoft Open Database Connectivity (ODBC) interface.
<i>IBM Informix: OLE DB Provider Programmer's Guide</i>	This manual explains how to use IBM Informix OLE DB Provider to enable Active Data Objects applications and web pages, for example, to access the database server.
<i>IBM Office Connect</i>	This online help describes how to connect your Microsoft Excel worksheets to databases for online retrieval, modification, and updating of database data.
<i>IBM Informix: TP/XA Programmer's Manual</i>	This guide describes how to use the TP/XA library, which facilitates communication between a third-party transaction manager and your database server. TP/XA is supplied with IBM Informix ESQL/C.

Table 3. DataBlade and Tools Manuals

Book Title	Description
<i>IBM Informix: Built-In DataBlade Modules User's Guide</i>	This guide explains how to use the following DataBlade modules that are included with Dynamic Server: <ul style="list-style-type: none"> <li>• MQ DataBlade module, to allow IBM Informix database applications to communicate with other MQ applications.</li> <li>• Large Object Locator, a foundation DataBlade module that can be used by other modules that create or store large-object data.</li> </ul>
<i>IBM Informix: DataBlade Developer's Kit User's Guide</i>	This guide describes how to develop and package DataBlade modules using BladeSmith and BladePack.
<i>IBM Informix: DataBlade Module Development Overview</i>	This manual provides an overview of DataBlade module development.
<i>IBM Informix: DataBlade Module Installation and Registration Guide</i>	This guide explains how to install DataBlade modules and use the BladeManager application to manage DataBlade modules in Informix databases. BladeManager runs on client computers.
<i>IBM Informix: Excalibur Text Search DataBlade Module User's Guide</i>	This manual explains how to perform text searches and retrieval using the Excalibur Text Search DataBlade module.
<i>IBM Informix Data Director for Web Tutorial</i>	This tutorial teaches you how to create a small web site using Data Director for Web. You can choose the exercises that teach what you need to learn or copy the entire web site into a database and use it as an example.
<i>IBM Informix: Data Director for Web User's Guide</i>	This manual describes how to use the Data Director for Web with the IBM Informix Web DataBlade module to develop and manage web sites. Also, see the tutorial.

Table 3. DataBlade and Tools Manuals (continued)

Book Title	Description
<i>IBM Informix: Geodetic DataBlade Module User's Guide</i>	This manual explains how to use the IBM Informix Geodetic DataBlade module to store and use spatio-temporal data such as maps.
<i>IBM Informix: Image Foundation DataBlade Module User's Guide</i>	This manual explains how the Image Foundation DataBlade module provides a base on which new or specialized image types and image processing technologies can be quickly added or changed.
<i>IBM Informix: Spatial DataBlade Module User's Guide</i>	This guide explains how to use the IBM Informix Spatial DataBlade module to store, manipulate, index, and analyze multidimensional spatial data.
<i>IBM Informix: TimeSeries DataBlade Module User's Guide</i>	This manual explains how to use the IBM Informix TimeSeries DataBlade module to store and manage time-stamped data such as stock reports.
<i>IBM Informix TimeSeries Real-Time Loader DataBlade Module User's Guide</i>	This manual describes how to use the IBM Informix TimeSeries Real-Time Loader DataBlade module to load time-stamped data and make the data available to queries in real-time.
<i>IBM Informix: Video Foundation DataBlade Module User's Guide</i>	This manual describes how to use the IBM Informix Video Foundation DataBlade module to store video technology in a media management system.
<i>IBM Informix: Web DataBlade Module Administrator's Guide</i>	This manual describes how to administer web applications that use the IBM Informix Web DataBlade module to dynamically retrieve data from Informix databases.
<i>IBM Informix: Web DataBlade Module Application Developer's Guide</i>	This manual explains how to use the IBM Informix Web DataBlade module to develop web applications that dynamically retrieve data from Informix databases.

## Compliance with Industry Standards

The American National Standards Institute (ANSI) and the International Organization of Standardization (ISO) have jointly established a set of industry standards for the Structured Query Language (SQL). IBM Informix SQL-based products are fully compliant with SQL-92 Entry Level (published as ANSI X3.135-1992), which is identical to ISO 9075:1992. In addition, many features of IBM Informix database servers comply with the SQL-92 Intermediate and Full Level and X/Open SQL Common Applications Environment (CAE) standards.

## IBM Welcomes Your Comments

We want to know about any corrections or clarifications that you would find useful in our manuals, which will help us improve future versions. Include the following information:

- The name and version of the manual that you are using
- Section and page number
- Your suggestions about the manual

Send your comments to us at the following email address:

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This email address is reserved for reporting errors and omissions in our documentation. For immediate help with a technical problem, contact IBM Technical Support. For instructions, see the IBM Informix Technical Support website at <http://www-306.ibm.com/software/data/informix/support/contact.html>.

We appreciate your suggestions.

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# Chapter 1. Preparing to Install Dynamic Server

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---

## In This Chapter

This chapter discusses the following topics to prepare for installing Dynamic Server and IBM Informix products:

- Preliminary Tasks
- Completing the Installation Worksheet

---

## Preliminary Tasks

Before installing Dynamic Server, decide which products to install, and set up and configure system hardware and software.

To install on Dynamic Server, complete the following preliminary tasks:

- Create group `informix` and user `informix` if they do not already exist.
- Apply operation system patches, if applicable. For information on available patches, see your machine notes.

In the default locale, the documentation notes, release notes, and machine notes files appear under the `$INFORMIXDIR/release/en_us/0333` directory.

- Configure role separation (optional).
- Decide whether to configure a demonstration database server.
- Complete the installation worksheet.

## Creating group `informix` and user `informix`

Create the group `informix` and user `informix` if they do not already exist.

**To create group `informix` and user `informix`:**

1. Log in as user `root`.
2. Create the group `informix` using the `groupadd` utility followed by the name of the group, in this format:

```
groupadd n
```

where *n* is an unused group ID greater than 100.

3. Create the user `informix` using the utility `useradd` followed by the group (`informix`) and username (`informix`) in this format:

```
useradd -u n -g informix informix
```

4. Create a password for the user `informix`.

To do this, use the `passwd` utility and the following command:

```
passwd informix
```

5. If you use a network, propagate the new user name to all the systems on the network that must recognize the user **informix**. For example, on some systems, you (or the network administrator) must run the **yppmake** utility.

## Applying Operating System Patches

Apply operating system patches, if applicable. For patch information, see the machine notes file.

## Configuring Role Separation (Optional)

Role separation provides checks and balances to improve the security of your event-auditing procedures. Event auditing tracks selected activities that users perform. With role separation enabled, members of different groups manage and examine these records to ensure additional security.

You must set up two roles to enable role separation:

### Database System Security Officer (DBSSO)

Controls what the auditing subsystem monitors and which actions performed by which users are logged

### Auditing Analysis Officer (AAO)

Controls whether auditing occurs, maintains the audit log files, and analyzes the audit records of those database activities that the DBSSO mandates to be audited

For audit purposes, you should establish one account for each individual who acts as a **DBSSO** or **AAO**. For example, **DBSSO1** and **DBSSO2** might be the account names for the **DBSSO** role and **bertAAO** and **harryAAO** might be the account names for the **AAO** role. In addition, all standard users should have separate account names.

By default, all user groups can access the database server. To access the database server, standard users must belong to one of the user groups. To restrict standard-user access to the database, create a special group. If you specify that group during the role-separation portion of database server installation, only members of that special group can access the database server.

### To set up roles:

1. Create the special administrative (**DBSSO** and **AAO**) groups with unique names; for example, **ixdbssso** and **ixaaao**.
2. Create two users, the Database System Security Officer (**DBSSO**) and the Auditing Analysis Officer (**AAO**).  
Do not use **informix** or **root** for the **DBSSO** and **AAO** account names.
3. Optionally, create a standard user group for allowing database access.
4. Set up standard user accounts and optionally add users to the standard user group created in the previous step.

## Configuring a Demonstration Database Server (Optional)

If you choose to have the installation program configure a demonstration Dynamic Server, the installation program automatically configures and initializes a sample database server. For more information on the demonstration database server, see "Using the Demonstration Database Server" on page 3-3.

## Completing the Installation Worksheet

Complete the installation worksheet using the above information to respond to prompts during the installation process.

Table 1-1. Installation Worksheet

Prompt	Information
<p><b>Operating-System Patches</b> Check the machine notes file for information about any required patches.</p>	<p>_ No _ Yes, enter patch numbers: _____ _____ _____</p>
<p><b>Role Separation</b></p>	<p>_ No _ Yes, enter Administrative Group Names: Security (DBSSO):_____ Auditing (AAO):_____ Standard-user access group:_____</p>
<p><b>IBM Informix Products to Install</b></p>	<p>_ Dynamic Server _ JDBC _ IConnect or Client SDK</p>
<p><b>Configure a Demo Dynamic Server?</b>  The Dynamic Server installation program can automatically configure a basic database server that you can use as a template to customize to meet your requirements.</p>	<p>_ No _ Yes (You must install Dynamic Server)</p>





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## Chapter 2. Installing Dynamic Server

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---

### In This Chapter

This chapter discusses the following topics to guide the installation of Dynamic Server and IBM Informix products:

- Installation Methods
- Installing Dynamic Server
- Installation Syntax
- Alternative Installation Methods
- ISA Installation

---

### Installation Methods

When you install Dynamic Server on UNIX and Linux, you have several options.

- Installing with the installation application
  - Using console mode (the default)
  - Using GUI mode
  - Using silent mode
- Installing using the extraction with command-line script
- Installing by invoking the JAR file directly
- Installing with RPM Package Manager (Linux only)

These methods are described in the sections that follow.

Depending on the installation medium and method you choose, you need differing amounts of disk space, as describe in the following table.

Table 2-1. Install Medium and Disk Space Required

Install Medium and Method	Products and Amount of Disk Space Required	
Installing from CD-ROM directly using the installation application.	<b>All products (excluding ISA)</b>	Less than 500 MB
	<b>Database server only</b>	Less than 350 MB
	<b>IConnect</b>	Less than 125 MB
	<b>Client SDK</b>	Less than 150 MB
	<b>JDBC</b>	Less than 50 MB
Downloading the installation program files to the install machine.	<b>All products (excluding ISA)</b>	Less than 1 GB
	<b>Database server only</b>	Less than 800 MB
	<b>IConnect</b>	Less than 275 MB
	<b>Client SDK</b>	Less than 300 MB
	<b>JDBC</b>	Less than 100 MB
Using the extraction option and then running command-line script.	<b>Database server only</b>	Less than 350 MB
	<b>IConnect</b>	Less than 150 MB
	<b>Client SDK</b>	Less than 175 MB
Installing ISA	Have at least 50 MB free disk space available temporarily to extract the <b>.cpio</b> file	
	Have at least 30 MB free disk space for the ISA distribution	

**Attention:** Ensure that you have 160 MB free space available in your **/tmp** directory before installation if you are using the JRE that is part of the installation application. If you are using a JRE already present on the host computer, you need less than 1 MB. This space requirement is included in the total disk space requirements listed in the above table.

## Installing Dynamic Server

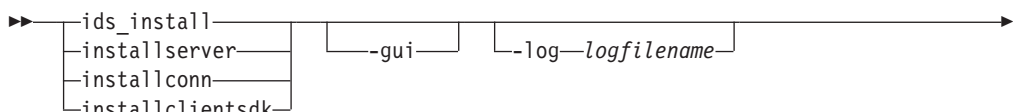
This section describes how to install IBM Informix products with the default installation application. For other methods, see “Alternative Installation Methods” on page 2-5.

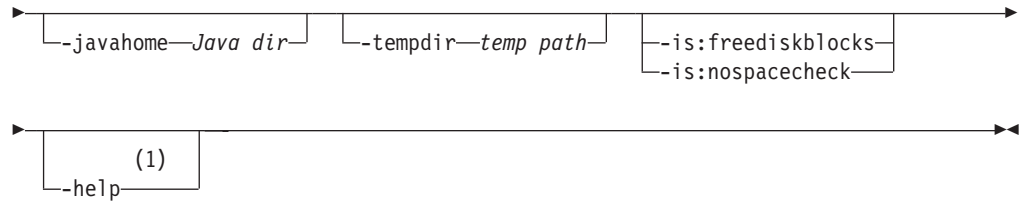
When you install Dynamic Server, use the installation command specific to the products you want to install:

- The **ids\_install** command installs all components of Dynamic Server.
- The **installserver** command installs the database server only.
- The **installconn** command installs IConnect only.
- The **installclientsdk** command installs the Client SDK only.

## Installation Syntax

The following syntax diagram illustrates the installation options.





**Notes:**

- 1 No other options are valid with this option.

Table 2-2. Syntax Elements

Element	Purpose	Restrictions
<i>Java dir</i>	Specifies the JRE on the host computer to use during installation instead of the JRE provided by the installation program	The JRE must be version 1.3.2 or higher.
<i>logfile name</i>	Specifies a non-default log filename	None
<i>temp path</i>	Specifies the path to temporary directory. If you receive an error during file extraction that there is not enough space in the <b>/tmp</b> directory, set the <b>-tempdir</b> option to a different temporary directory.	None

The following table describes the installation application options.

Table 2-3. Installation Options

Option	Meaning
<b>ids_install</b>	Install all components of Dynamic Server
<b>installserver</b>	Install database server only
<b>installconn</b>	Install IConnect only
<b>installclientsdk</b>	Install Client SDK only
<b>-gui</b>	Start the installation program in GUI mode
<b>-log</b>	Log installation program progress
<b>-javahome</b>	Use specified JRE. To force the installation program to use the bundled JRE and ignore any local JREs, use the <b>-javahome none</b> argument.
<b>-tempdir</b>	Use specified temporary directory
<b>-is:freediskblocks</b>	Use to determine if there is adequate space for the product installation files prior to starting the installation.
<b>-is:nospacecheck</b>	Use to prevent the installation program from checking if there is adequate space for product installation files. Use with caution: If there is not enough space to extract the temporary files, the installation program will fail.
<b>-help</b>	Display list of supported options and their functions

## Installing in Console Mode

The default installation is console mode. Console mode is a text screen interface.

When installing in console mode, especially over a network, you might have to wait a few moments for files to uncompress before installation begins.

### To install in console mode:

1. Log in as the **root** user.
2. Run the installation command for the products you want to install from the specific product directory.
  - To install all the components of Dynamic Server, run the **ids\_install** command from the root level of the installation media.
  - To install the server only, run the **installserver** command from the SERVER directory.
  - To install the Client SDK only, run the **installclientsdk** command from the CSDK/UNIX directory.
  - To install IConnect only, run the **installconn** command from the ICONNECT/UNIX directory.

The installation program opens in console mode.

3. Enter 1 to continue.

The Software License Agreement appears.
4. Read the license agreement, accept the terms and enter 1 to continue.
5. Accept the default installation directory or choose a different directory and enter 1 to continue.
6. Select the products that you want to install, if that is an option.

If you ran the **ids\_install** command, IBM Informix Dynamic Server, JDBC, and Client SDK are selected by default. IConnect is deselected by default. (Do not install CSDK and IConnect together.)

Entering the number that corresponds to the appropriate product will select the product if it is not selected and deselect the product if it is already selected.

Enter 1 to continue to the next step.
7. Select Typical for the suggested setup, or select the Custom installation to select the components you want to install and other possible options.
8. Choose whether to enable role separation.

If you enter Yes, you are prompted for the role separation group values. For more information about role separation, see “Configuring Role Separation (Optional)” on page 1-2.
9. Enter 1 to continue.
10. Choose whether to create a demonstration database.

The demo database is for demonstration purposes only. It is not configured for a production environment.
11. Enter 3 to finish the installation.

If you chose to install other IBM Informix products, the install prompts you for additional information.

A final screen of the installation program tells you what to do after the installation is complete to start Dynamic Server. For more information about this screen, see Chapter 3, “Post-Installation Tasks,” on page 3-1.

## Installing Informix Products in GUI Mode

The GUI install mode requires an X Windows environment.

When installing in GUI mode, especially over a network, you might have to wait a few moments for files to uncompress before installation begins.

### To install in GUI mode:

1. As the **root** user, run the installation command for the products you want to install. For information on which command to use for which product, see “Installing Dynamic Server” on page 2-2 and “Installation Syntax” on page 2-2. The installation program launches in GUI mode.
2. Click Next to progress through the screens.

A final screen of the installation program tells you what to do after the installation is complete in order to start Dynamic Server. For more information about this screen, see Chapter 3, “Post-Installation Tasks,” on page 3-1.

---

## Using the Log Files

You can find information that will help identify and resolve installation errors in two different log files:

- Use the command that launches the installation program with the **-log** option to log install-related information, as the following example shows:  

```
ids_install -log log.txt
```
- The IBM Informix product (for instance, Dynamic Server) creates its own problems file in the following location:  

```
$INFORMIXDIR/tmp/log.txt
```

---

## Alternative Installation Methods

In addition to the methods described above, you can use four other methods for installing Dynamic Server. The following table compares the different methods.

Table 2-4. Alternative Installation Methods

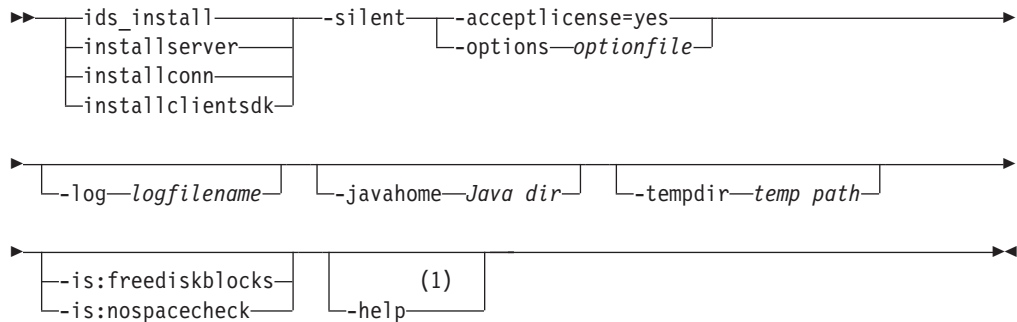
Installation Method	Format of Command	Products Installed	Reasons to Use	Restrictions
Silent installation	<code>./ids_install -options -silent mysilent.ini</code>	Use to install all components of Dynamic Server, database server only, Client SDK, IConnect, with product-specific command	Uses preset installation file (*.ini) that can be saved and reused as a template	Install as <b>root</b> user. You must specify <code>-acceptlicense=yes</code> on the command line, or set the <code>-W lafiles.license Accepted</code> property to the value of <code>true</code>
Extract with command-line script	<code>./installserver -legacy</code>	Use to install database server, Client SDK, or IConnect individually	You use the extraction with command-line installation alternative when you want to install the product to redistribute it or when you want to save space or time on subsequent installations.  In addition, you can avoid using any JRE, either local or bundled.	

Table 2-4. Alternative Installation Methods (continued)

Installation Method	Format of Command	Products Installed	Reasons to Use	Restrictions
Invoke the JAR file directly	java -cp IIF.jar run	Use to install all components of Dynamic Server, database server only, Client SDK, IConnect, or JDBC with product-specific command	Provides a faster installation method	To use this installation option, you must have a version of JRE 1.32 or higher.
Use RPM Package Manager (Linux only)	rpm -iv --prefix \$INFORMIXDIR IIFServer.rpm	Use to install database server, Client SDK, IConnect, or JDBC individually		You cannot perform a silent installation with RPM. RPM requires that you uninstall any existing version of the database server before you install the new version.

## Installing Informix Products in Silent Mode

The following syntax diagram illustrates the installation options for the silent installation.



### Notes:

- 1 No other options are valid with this option.

Table 2-5.

Element	Purpose	Restrictions
<i>optionfile</i>	Specifies file name of *.ini file to preset installation properties	None
<i>java dir</i>	Specifies the JRE on the host computer to use during installation instead of the JRE provided by the installation program	The JRE must be version 1.3.2 or higher.
<i>logfile</i>	Specifies a non-default log filename	None
<i>temp path</i>	Specifies path to temporary directory. If you receive an error during file extraction that there is not enough space in the /tmp directory, set the -tempdir option to a different temporary directory.	None

The following table describes the silent installation options.

Table 2-6. Silent Installation Options

Option	Meaning
<b>-silent</b>	Install in silent mode
<b>-acceptlicense=yes</b>	Accept license
<b>-options</b>	Use specified *.ini file
<b>ids_install</b>	Install all components of Dynamic Server
<b>installserver</b>	Install database server only
<b>installconn</b>	Install IConnect only
<b>installclientsdk</b>	Install Client SDK only
<b>-log</b>	Log installation program progress
<b>-javahome</b>	Use specified JRE. To force the installation program to use the bundled JRE and ignore any local JREs, use the <code>-javahome none</code> argument.
<b>-tempdir</b>	Use specified temporary directory
<b>-is:freediskblocks</b>	Use to determine if there is adequate space for the product installation files prior to starting the installation.
<b>-is:nospacecheck</b>	Use to prevent the installation program from checking if there is adequate space for product installation files. Use with caution: If there is not enough space to extract the temporary files, the installation program will fail.
<b>-help</b>	Display list of supported options and their functions

When you perform a silent installation, you can modify the \*.ini file to set installation properties or accept default options. The following table describes these properties and valid values.

Table 2-7. Properties for \*.ini file

Properties	Possible Values	Description
<code>-P installLocation=</code>	Valid directory; for example: <code>/usr/informix</code> (default)	Specifies the directory into which the product will be installed
<code>-W setupTypes.selectedSetupTypeId=</code>	<code>typical</code> (default) <code>custom</code>	Specifies setup type
<code>-P ids.active=</code>	<code>true</code> (default) <code>false</code>	Indicates whether product or features is selected for installation.
<code>-P csdk.active=</code>	<code>true</code> <code>false</code> (default)	Indicates whether product or features is selected for installation.  Only either IConnect or the full Client SDK can be installed at once. The cannot both be installed into the same location.
<code>-P iconnect.active=</code>	<code>true</code> (default) <code>false</code>	Indicates whether product or features is selected for installation.  Only either IConnect or the full Client SDK can be installed at once.

Table 2-7. Properties for \*.ini file (continued)

Properties	Possible Values	Description
-SP CSDK/UNIX/csdk.jar clientfeature.active=	true (default)  false	Indicates whether product or features is selected for installation.  Only applicable for a Client SDK install with the Custom option.
-P jdbc.active=	true (default)  false	Indicates whether product or features is selected for installation.
-SP SERVER/IIF.jar messagesfeature.active=  -SP SERVER/IDS.jar messagesfeature.active=	true (default)  false	Indicates whether the error messages feature is selected for installation
-P glsfeature.active=	true (default)  false	Indicates whether the GLS feature is selected for installation
-W rolesepenable.roleSep=	on  off (default)	Indicates whether to enable role separation
-W rolesep.dbsso_g=  -W rolesep.aao_g=	Valid user for group; for example:  "informix" (default)	Role separation group values, if role separation is enabled
-W demoinput.CreateDemo=	"create" (default)  "nocreate"	Tells the installation program whether to create a demo database
-W demoinput2.preonconfig=	Valid values: yes - existing <b>onconfig</b> file will be used  no (default) Individual values provided will be used  If this value is set to "yes", a file must be provided in the <b>onconfig</b> path argument.	Indicates whether or not to use a pre-existing <b>onconfig</b> file to configure the demo server
-W demoinput3.onconfig=	Pre-existing <b>onconfig</b> path; for example: -W demoinput3.onconfig="/usr/informix/onconfig.mydemo"	Provides the path to the <b>onconfig</b> file to be used.  This is only used if the pre-existing <b>onconfig</b> option is set to "yes"
-W demoinput.ServerNumber=	Valid values include integers between 0 and 255; for example:"0" (default)	The value of the Server Number for the IDS demo server
-W demoinput4.ServerName=	The value of the Server Name for the IDS demo instance, such as: "demo_on" (default)	The value of the Server Name for the IDS demo instance
-W demoinput4.rootpath=	Path, such as: "demo/server/online_root" (default)	The full path to the storage area of the root dbspace for the IDS demo server
-W demoinput4.rootsize=	Size of the root dbspace for the IDS demo server, such as: 30000 (default)	The size of the root dbspace for the IDS demo server



Table 2-7. Properties for \*.ini file (continued)

Properties	Possible Values	Description
-W demoinput4.bufferpool=	Bufferpool information, such as: "size=2k,buffers=1000,lrus=8,lru_min_dirty=50,lru_max_dirty=60" (default)	The non-default bufferpool information for the IDS demo server
-W demoinput4.numcpuvsps=	Numerical value, such as 1 (default)	The number of CPU VPS to configure for the IDS demo server
-W 1afiles.licenseAccepted= for <b>ids_install</b> option (all components of Dynamic Server)  -P 1afiles.licenseAccepted= for <b>installserver</b> option (server only)	true false	Accepts license. Value of false stops the installation process.  No value is needed if you accept the license at the command line.  You can find the license in #MEDIADIR/doc/license.

The silent installation requires no user interaction with the installation program after you start the script.

**To perform a silent installation with the installation program:**

1. Copy **server.ini** or **bundle.ini** from the install media to any readable location: *mysilent.ini*.

- To install server only, copy the **server.ini** from the SERVER subdirectory.
- To install any or all components of Dynamic Server, copy the **bundle.ini** from the root level of the media directory.

2. Edit the \*.ini file in your directory.

Use this file to configure the install with the options specified. If you do not edit these values or specify the \*.ini file when you specify a silent install, the installation program will use default values.

3. As the **root** user, execute the silent install, as in the following example, where *mysilent.ini* stands for the filename or filename and path:

```
./ids_install -silent -options mysilent.ini
./ids_installserver -silent -options mysilent.ini
./ids_installconn -silent -options mysilent.ini
./ids_installclientsdk -silent -options mysilent.ini
```

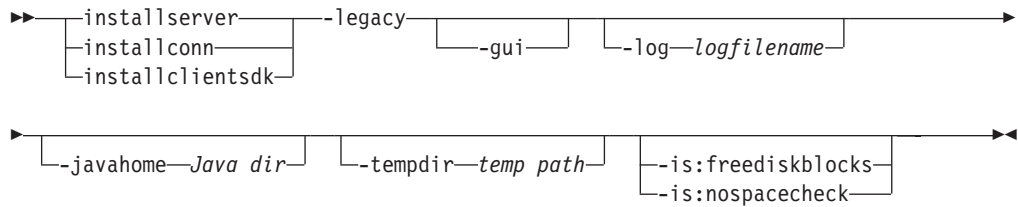
You must either set the options file to accept the Software License Agreement or specify acceptance when you execute the silent install with the following argument:

```
-acceptlicense=yes
```

A final screen of the installation program tells you what to do after the installation is complete in order to start Dynamic Server. For more information about this screen, see Chapter 3, "Post-Installation Tasks," on page 3-1.

## Installing Using Extraction With a Command-Line Script

As an alternative to using the installation program, you can extract script-based installable Dynamic Server media (server and client products only). The extraction mode uses the installation program to extract the media and provide the Software License Agreement. After the extraction, when you are ready to install the product, you must run the command-line install script.



The following table explains the syntax elements.

Table 2-8. Syntax Elements

Element	Purpose	Restrictions
<i>java dir</i>	Specifies the JRE on the host computer to use during installation instead of the JRE provided by the installation program	The JRE must be version 1.3.2 or higher.
<i>logfile name</i>	Specifies a non-default log filename	None
<i>temp path</i>	Specifies the path to temporary directory. If you receive an error during file extraction that there is not enough space in the <b>/tmp</b> directory, set the <b>-tempdir</b> option to a different temporary directory.	None

The following table describes the extraction options.

Table 2-9. Installation Options

Option	Meaning
<b>installserver</b>	Extract database server only
<b>installconn</b>	Extract IConnect only
<b>installclientsdk</b>	Extract Client SDK only
<b>-gui</b>	Start the extraction in GUI mode
<b>-log</b>	Log installation program progress
<b>-javahome</b>	Use specified JRE. To force the installation program to use the bundled JRE and ignore any local JREs, use the <b>-javahome none</b> argument.
<b>-tempdir</b>	Use specified temporary directory
<b>-is:freediskblocks</b>	Use to determine if there is adequate space for the product installation files prior to starting the installation.
<b>-is:nospacecheck</b>	Use to prevent the installation program from checking if there is adequate space for product installation files. Use with caution: If there is not enough space to extract the temporary files, the installation program will fail.
<b>-help</b>	Display list of supported options and their functions

The extraction with command-line installation alternative is provided for users who want to install the product to redistribute it.

This method of installing Dynamic Server does not add a JRE or an uninstall application on your computer.

**To install Dynamic Server in extraction mode:**

1. As the **root** user, run the installation command for the products you want to install:

```
./installserver -legacy  
./installconn -legacy  
./installclientsdk -legacy
```

The installation program is used for the extraction.

You can use the `-legacy` argument to run the installation program in default console mode, GUI, or silent install mode. The following instructions are for the default console mode.

2. Enter 1 to progress through the installation screens.  
The Software License Agreement displays.
3. After you read the license agreement, enter 1 to accept the terms.
4. Enter 1 to progress through the installation screens.
5. Specify an install directory or press Enter to accept the default directory.  
The server product and installation files are extracted.
6. To install the server only, change directories to the directory where you want to install the product (**\$INFORMIXDIR**) and run the install script as the **root** user:

```
cd $INFORMIXDIR  
./installserver
```

You can install IConnect or Client SDK in a similar manner. Change directories to where you want to install the product and as the **root** user run one the following commands:

```
./installconn  
./installclientsdk
```

After the installation is complete, the installation script changes the owner of the **INFORMIXDIR** directory to user **informix** as well as any subdirectories and files under the **INFORMIXDIR** directory that the user **informix** must access or control.

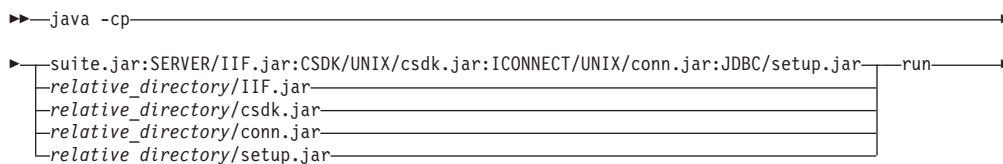
**Attention:** Do not use the **oninit** command if problems occur. If you use **oninit**, you might cause further installation problems.

For information about any errors that occur during the installation, check the install log in the **\$INFORMIXDIR/tmp/log.txt** file.

For information on installing IBM Informix JDBC Driver, see *IBM Informix: JDBC Driver Programmer's Guide*.

## Installing by Invoking the JAR File Directly

The following syntax diagram illustrates the installation options you can use when the Dynamic Server **.jar** file is invoked directly. To use this installation option, you must have a version of JRE 1.32 or higher.



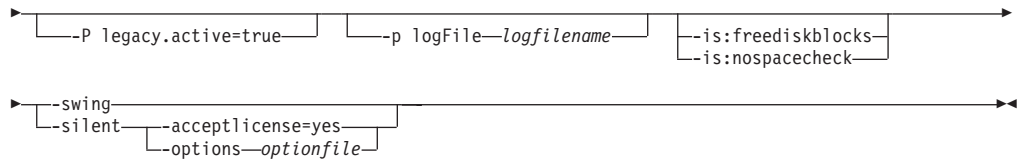


Table 2-10.

Element	Purpose	Restrictions
<i>relative_directory</i>	Specifies the path to the specified <b>.jar</b> file. If you execute the command from the directory where the <b>.jar</b> file resides, do not specify a path.	None
<i>logfile</i>	Specifies a non-default log filename	None
<i>optionfile</i>	Specifies file name of <b>*.ini</b> file to preset installation properties	None

The following table describes the Java-invoked application options.

Table 2-11.

Option	Meaning
<b>suite.jar</b>	The installation application for all the components of Dynamic Server
<b>IIF.jar</b>	The installation application for Dynamic Server, database server only
<b>csdk.jar</b>	The installation application for Client SDK
<b>conn.jar</b>	The installation application for IConnect
<b>setup.jar</b>	The installation application for JDBC
<b>-P legacy.active=true</b>	Extracts files but does not install the product
<b>-p logfile</b>	Log installation program progress
<b>-is:freediskblocks</b>	Use to determine if there is adequate space for the product installation files prior to starting the installation.
<b>-is:nospacecheck</b>	Use to prevent the installation program from checking if there is adequate space for product installation files. Use with caution: If there is not enough space to extract the temporary files, the installation program will fail.
<b>-swing</b>	Set the Java-invoked application to GUI mode
<b>-silent</b>	Set the Java-invoked application to silent mode
<b>-options</b>	Use with <i>optionfile</i> . Specifies file name of <b>*.ini</b> file to preset installation properties

### To install Dynamic Server by invoking the JAR file directly:

1. Invoke Java on the installation program, using the command that corresponds to the products you want to install; for example:

```
java -cp IIF.jar run
```

You must execute this command from the directory of the **IIF.jar** file.

2. Follow the procedure for installing with the application program.

For more information, see “Installing in Console Mode” on page 2-3.

## Installing Dynamic Server Using RPM Package Manager Commands (Linux)

Although you can use the Dynamic Server application program (which uses RPM) to install Dynamic Server on Linux, you can optionally use RPM Package Manager (RPM) commands to install Dynamic Server on Linux operating systems when Linux RPM is enabled.

**Restriction:** You cannot perform a silent installation with RPM.

**Prerequisite:** RPM requires that you uninstall any existing version of the database server before you install the new version.

### To install IBM Informix Dynamic Server on a Linux system using RPM commands:

1. Follow the relevant steps in “Preliminary Tasks” on page 1-1 and fill out the Table 1-1 on page 1-3.
2. If you are configuring role separation, follow the steps in “Configuring Role Separation (Optional)” on page 1-2.
3. Log in as the **root** user.
4. If the RPM package is not installed on your system, install it.  
For more information, see the **rpm** documentation.
5. Change directories to the location of the IBM Informix package files.
6. Load the contents of the IBM Informix package file. For example:

```
INFORMIXDIR=/opt/informix/LE; export INFORMIXDIR  
rpm -iv --relocate /opt/informix $INFORMIXDIR *.rpm
```

This example loads all IBM Informix packages that are in the current directory to the directory that the **\$INFORMIXDIR** environment variable (**/opt/informix/LE**) specifies.

7. As the **root** user, use the RPM utility to install the **Message.rpm**, **Gls.rpm**, and **IIFServer.rpm** files in the following order:

```
rpm -iv --prefix $INFORMIXDIR Message.rpm  
rpm -iv --prefix $INFORMIXDIR Gls.rpm  
rpm -iv --prefix $INFORMIXDIR IIFServer.rpm
```

You can use RPM to install Client SDK or IConnect in a similar manner. If you are installing in a different directory, you must also install **Message.rpm** and **Gls.rpm** files, in that order. Otherwise, you do not need to reinstall the **Message.rpm** and **Gls.rpm** files.

```
rpm -iv --force --prefix $INFORMIXDIR conncontent.rpm  
rpm -iv --force --prefix $INFORMIXDIR clientsdkcontent.rpm
```

The Software License Agreement is shown.

8. Choose whether to configure role separation.  
If the answer was yes, you are prompted for the role separation group values. For more information about role separation, see “Configuring Role Separation (Optional)” on page 1-2.

The script displays information about the product and the script requirements.

---

## ISA Installation

You do not install IBM Informix Server Administrator (ISA) with the installation program. Use the following information to install ISA.

## ISA Configuration Worksheet

Use the information from the ISA Configuration Worksheet to respond to the prompts to configure ISA.

Table 2-12. IBM Informix Server Administrator Configuration

Prompt	Information
<b>Language supplement supported for ISA</b>	Enter the number for your preferred language. _____
<b>Code sets</b>	Enter the number for your preferred code set. _____
<b>ISA Apache HTTP Server?</b>  ISA includes its own Perl environment and Apache HTTP server and installs these in <b>isadir</b> . ISA does not overwrite any existing Perl or Apache environments currently on your system and requires you to use the ISA-supplied Apache HTTP server.	If you answer yes, ISA installs Apache in <b>isadir</b> and configures it automatically. If no, installation stops.  _____
<b>ISA Perl environment?</b>  ISA does not overwrite any existing Perl environments currently on your system. For information about Perl in ISA, see the PERLCONFIG file in the isadir/doc directory.	If you answer yes, ISA installs Perl in <b>isadir</b> and configures it automatically.  If you answer no, you can adapt ISA to use your own Perl environment.  _____
<b>Hostname</b>	Enter the name of the computer (ISA node) on which you are installing ISA.  _____
<b>Port Number</b>	ISA checks your services file for available port numbers and provides an available default port number. If you do not use the default, specify a port number for the ISA server between 1025 and 65535, inclusive that is available for use on the computer on which you are installing ISA. For a list of port numbers currently in use, see the <b>/etc/services</b> file.  _____  If your environment does not use the services file for port numbers, check with your system administrator. Ensure that you add this port number to the services file.  _____
<b>ISA Administrator</b>	Specify the email address of the ISA administrator. This must be a valid email address. ISA sends problem reports to this email address. Create an alias named <b>isa-admin</b> for this purpose.  _____
<b>Confirm email address</b>	ISA tests the email address by sending the ISA <b>README</b> file. You must verify that the email address received the test email.

Table 2-12. IBM Informix Server Administrator Configuration (continued)

Prompt	Information
<b>HTTP Server Password</b>	<p>Specify a password for the user <b>informix</b>. When a user accesses ISA from the Web browser, the browser prompts for a user name and password. The user logs in as user <b>informix</b> with this password.</p> <p><b>Note:</b> The ISA HTTP server user <b>informix</b> is different from the database server user <b>informix</b>.</p> <hr/> <p>This password does not need to be the same as the system password for user <b>informix</b>. However, anyone who can access ISA with this username and password can do anything that user <b>informix</b> can do from the database server command line.</p>
<b>Read-Only Users</b>	<p>Provide user names and passwords for any read-only users. Read-only users can monitor the server using ISA, but cannot perform administrative tasks, such as changing the mode of the server or adding storage spaces.</p> <hr/> <hr/> <p>ISA user accounts are not related to operating system user accounts; they exist only in the ISA server.</p>
<b>Server setup?</b>	<p>Server setup is an optional package that allows users to set up database server quickly and easily through ISA.</p> <hr/>
<b>Java-enabled features</b>	<p>To use the Java-enabled ISA features (Server Setup and Remote Monitoring), you must have a Java Runtime Environment (JRE) version 1.2.2 or higher already installed. If yes, specify the complete file path to the JRE executable, for example, <b>/usr/java/bin</b>.</p> <hr/> <p>Also, specify the ISA Servlet Engine Port Number (must be between 1024 and 65536). This must be a different number from the one you chose for the ISA HTTP server. (For a list of port numbers currently in use, see the <b>/etc/services</b> file. You should update the <b>/etc/services</b> file with the port numbers for the ISA server and the ISA servlet engine, if applicable, to prevent accidental reuse of these port numbers.)</p> <hr/>
<b>Configure ISA to manage a database server instance?</b>	<p>If your UNIX or Linux environment includes the following valid Informix environment variables for a database server instance, the ISA installation program prompts you to configure ISA to manage that server:</p> <ul style="list-style-type: none"> <li>• INFORMIXSERVER</li> <li>• INFORMIXDIR</li> <li>• ONCONFIG</li> </ul> <p><b>Note:</b> This prompt only appears if all three environment variables are present.</p> <hr/> <p>If yes, the ISA installation program adds these values to the <b>isadir/etc/isacfg</b> file. If <b>INFORMIXSQLHOSTS</b> is also present in the environment, the ISA installation program adds it to <b>isadir/etc/isacfg</b>.</p>

Table 2-12. IBM Informix Server Administrator Configuration (continued)

Prompt	Information
Start the ISA Apache HTTP Server?	You must start the ISA Apache HTTP server before you can access ISA. To start the server manually as user <b>informix</b> , run the <b>isadir/sbin/isactl</b> start command.
Run ISA	To run ISA, open a web browser, access <b>http://hostname:port_number/</b> , and log in as user <b>informix</b> (or as a read-only user) using the password you provided during the installation.

## Installing ISA

To install ISA, follow these steps.

### To install and configure ISA:

1. Copy ISA from the installation media to the install location.
2. Run the following command:  
`./installisa`
3. Accept the terms of the license agreement.
4. Select the language.
5. Select the code set.
6. Specify the host name of the computer on which you are installing ISA.
7. Specify the port number for ISA.
8. Specify the email address of the administrator for ISA.
9. Specify the HTTP server password.
10. Specify whether to allow read-only users and provide user names and passwords for the read-only users.
11. Specify whether to install Server Setup. If you do not install Server Setup, skip to step 14.
12. Specify the complete path (including the file name) to the JRE.
13. Specify the port number for the ISA servlet engine.
14. Update the `/etc/services` file.
15. Enter Y to start ISA or press RETURN to skip this step.



---

## Chapter 3. Post-Installation Tasks

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Configuring the Database Server . . . . .	3-1
Setting Environment Variables . . . . .	3-1
Preparing Connectivity Files . . . . .	3-2
Preparing the onconfig File . . . . .	3-2
Initializing the Database Server . . . . .	3-2
Using the Demonstration Database Server . . . . .	3-3
Testing the Installation . . . . .	3-3
Additional Configuration Task Information . . . . .	3-4

---

### In This Chapter

This chapter discusses the following topics:

- Configuring the Database Server
- Using the Demonstration Database Server
- Additional Configuration Task Information

---

### Configuring the Database Server

3 The final screen of the installation program provides basic information on  
3 configuring and starting the database server. This information includes:

- Setting environment variables
- Preparing connectivity files
- Preparing configuration files
- Initializing the database server

### Setting Environment Variables

For each user, set the following environment variables:

- Set **INFORMIXDIR** to the directory where you installed the database server or other IBM Informix products.
- Set the **PATH** environment variable to include **INFORMIXDIR/bin** as follows:

- C shell:

```
setenv PATH${INFORMIXDIR}/bin:${PATH}
```

- Bourne shell:

```
PATH=${INFORMIXDIR}/bin:${PATH}
export PATH
```

You must set **INFORMIXDIR** and add **INFORMIXDIR/bin** to the **PATH** for each user.

- Set **INFORMIXSERVER** to specify the default database server to which DB–Access or an SQL API client makes an explicit or implicit connection.
- Set **ONCONFIG** to the name of the active **onconfig** configuration file.
- If using a local or language other than the default, set:
  - **CLIENT\_LOCALE** to specify a nondefault locale.
  - **DBLANG** to specify the subdirectory of **INFORMIXDIR** that contains the customized language-specific message files that IBM Informix products use.
  - Set **DB\_LOCALE**

- Set **SERVER\_LOCALE**
- Set **INFORMIXSQLHOSTS** to specify the file that contains the **sqlhosts** information.
- Set **INFORMIXTERM** to specify whether DB–Access should use the information in the **termcap** file or the **terminfo** directory.  
On character-based systems, the **termcap** file and **terminfo** directory determine terminal-dependent keyboard and screen capabilities, such as the operation of function keys, color and intensity attributes in screen displays, and the definition of window borders and graphic characters.
- Set **INFORMIXDIR/lib** and any of the **INFORMIXDIR/lib** subdirectories to specify the shared-library path. The shared-library path environment variable specifies the library search path and is platform-dependent.

Platform	Environment Variable
AIX	LIBPATH
HP-UX	SHLIB_PATH
Solaris and most other platforms	LD_LIBRARY_PATH

For example, on Solaris, set this environment variable as follows:

- Bourne shell:
 

```
LD_LIBRARY_PATH=$INFORMIXDIR/lib:$LD_LIBRARY_PATH
export LD_LIBRARY_PATH
```
- C shell:
 

```
setenv LD_LIBRARY_PATH${INFORMIXDIR}/lib:
\${LD_LIBRARY_PATH}
```

## Preparing Connectivity Files

Prepare the following connectivity files:

- **sqlhosts**
- **/etc/hosts**
- **/etc/services**

For more information on preparing connectivity files, see the *IBM Informix: Administrator's Guide*.

## Preparing the onconfig File

At minimum, set the following configuration parameters in the **onconfig** file. The **onconfig** file is the file containing configurable parameters for Dynamic Server:

- **DBSERVERNAME**
- **SERVERNUM**
- **ROOTNAME**
- **ROOTPATH**
- **ROOTSIZE**

For more information, see *IBM Informix: Administrator's Reference*.

## Initializing the Database Server

As the **informix** or **root** user, to initialize a new server for the *first* time, run the **oninit -i** command. This overwrites any existing data, so use caution when you run this command on an existing setup.

If this is not the first initialization of this server, use the **oninit** command to start the database server.

---

## Using the Demonstration Database Server

If you chose to have the installation program configure a demonstration database server, the installer automatically configures and initializes a sample Dynamic Server named **demo\_on** and sets the **ONCONFIG** environment variable to a sample **onconfig** file, **\$INFORMIXDIR/etc/onconfig.demo**.

3 As of IBM Informix Dynamic Server, Version 10.00.xC3, you can name the  
3 demonstration database. The **onconfig** file will be located in  
3 **\$INFORMIXDIR/etc/onconfig.demo\_db\_name**.

When the installation program initializes the demonstration database server, three databases, **sysmaster**, **sysuser**, and **sysutils**, are built automatically. However, it takes several minutes to build these databases, and the system is not completely initialized until messages like the following appear in the message log (**\$INFORMIXDIR/demo/server/online.log**):

```
09:28:59 'sysmaster' database built successfully.  
09:29:00 'sysutils' database built successfully.  
09:29:00 'sysuser' database built successfully.
```

After the server is installed, you can manually configure the demo database to use this server.

**To configure the demo database, check or set these environment variables:**

1. Set the **INFORMIXDIR** environment variable.  
For information on setting the **INFORMIXDIR** environment variable, see “Configuring the Database Server” on page 3-1.
2. Set the **PATH** environment variable.  
For information on setting the **PATH** environment variable, see “Configuring the Database Server” on page 3-1.
3. Set **ONCONFIG** to **onconfig.demo\_on**.
4. Set **INFORMIXSERVER** to **demo\_on**.

**INFORMIXSQLHOSTS** will default correctly to **INFORMIXDIR/etc/sqlhosts**; if you change the name or location of this file for your use, then you will have to set **INFORMIXSQLHOSTS** to reflect the new name and path.

The installation creates additional configuration and log files to support the **demo\_on** database server in **\$INFORMIXDIR/demo/server**. For information on the configuration settings for **demo\_on**, see the **\$INFORMIXDIR/demo/server/profile\_settings** file.

## Testing the Installation

Successful configuration of the demonstration database confirms that your installation was successful. To test that the installation succeeded, run the following commands, which use the DB-Access utility that is provided with Dynamic Server:

```
$ dbaccessdemo  
$ dbaccess stores_demo
```

If the installation was successful, the **dbaccessdemo** script interacts with the database server to create and populate the **stores\_demo** database. The **dbaccess** program enables you to access databases (**stores\_demo** in this case) using SQL.

## Additional Configuration Task Information

For more information on most post-installation configuration tasks, see the *IBM Informix: Dynamic Server Administrator's Guide*. In addition, you can perform the following configuration tasks:

- If you installed IBM Informix Server Administrator (ISA), you can use it now to configure the database server.

If you did not start ISA during installation, start it now:

1. Log in as **informix** or **root** and enter the following command to start ISA:

```
$INFORMIXDIR/ISA /sbin/isactl start
```

2. Start your web browser and open:

```
http://hostnamedomain_name:port_number/
```

3. Log in with the user name and password you provided during installation.

See "ISA Installation" on page 2-13.

For more information, see the ISA online help.

- IBM Informix Storage Manager is automatically installed with the database server; however, you must configure it before it can work.

For more information, see the *IBM Informix: Storage Manager Administrator's Guide*. For information on how to configure ON-Bar and **ontape**, see the *IBM Informix: Backup and Restore Guide*.

- You can ask your system administrator to modify the sample system startup script located in **\$INFORMIXDIR/etc/ids-example.rc** (see the section on preparing UNIX startup and shutdown scripts in the *IBM Informix: Administrator's Guide*) so that your database server starts whenever the computer is rebooted (for example, after a power failure).

The startup script should set the **INFORMIXDIR**, **PATH**, **ONCONFIG**, and **INFORMIXSERVER** environment variables and then execute **oninit**. Similarly, you can ask the system administrator to modify the shutdown script so that the database server shuts down normally.

For more information on post-installation tasks, see the pointers in the following table.

Description	Documents and Files
<b>INFORMIX</b> environment variables	<i>IBM Informix: Guide to SQL Reference</i>
How to create or modify a <b>/etc/termcap</b> file	<b>\$INFORMIXDIR/etc/termcap</b>
Information about the <b>/etc/termcap</b> file	<i>IBM Informix: Backup and Restore Guide</i>
<b>CLIENT_LOCALE</b> and <b>DBLANG</b> environment variables	<i>IBM Informix: GLS User's Guide</i>
List of computers that provide full support for the UNIX System V <b>terminfo</b> library	Machine notes file (see page xi.)

---

## Chapter 4. Uninstalling Dynamic Server

In This Chapter . . . . .	4-1
Uninstalling Using the Uninstall Application . . . . .	4-1
Uninstalling After Using the Extraction Application with Command-Line Script . . . . .	4-2
Uninstalling Using RPM (Linux) . . . . .	4-2

---

### In This Chapter

This chapter discusses how to uninstall Dynamic Server and other IBM Informix products:

- Uninstalling Using the Uninstall Application
- Uninstalling After Using the Extraction Application with Command-Line Script
- Uninstalling Using RPM (Linux)

---

### Uninstalling Using the Uninstall Application

You can uninstall IBM Informix products installed with the IBM Informix uninstall application in console, graphical, or silent mode. You must uninstall IBM Informix products one at a time.

#### To uninstall IBM Informix products in console (default) mode:

1. From **\$INFORMIXDIR**, as **root**, run one the following commands:
  - `java -jar uninstall_ids/uninstall.jar`  
to uninstall the database server.
  - `java -jar uninstall_conn/uninstall.jar`  
to uninstall IConnect.
  - `java -jar uninstall_csdk/uninstall.jar`  
to uninstall Client SDK.
  - `java -cp jdbc/_uninst/uninstall.jar`  
to uninstall the JDBC driver.
2. Follow the prompts to complete the uninstall.

#### To uninstall IBM Informix products in GUI mode:

1. From **\$INFORMIXDIR**, as **root**, run one of the following commands:
  - `java -jar uninstall_ids/uninstall.jar -gui`  
to uninstall the database server.
  - `java -jar uninstall_conn/uninstall.jar -gui`  
to uninstall IConnect.
  - `java -jar uninstall_csdk/uninstall.jar -gui`  
to uninstall Client SDK.
  - `java -cp jdbc/_uninst/uninstall.jar -gui`  
to uninstall the JDBC driver.
2. Follow the prompts to complete the uninstall.

#### To uninstall IBM Informix products in silent mode:

1. From **\$INFORMIXDIR**, as **root**, run one of the following commands:
  - `java -jar uninstall_ids/uninstall.jar -silent`  
to uninstall the database server.

- `java -jar uninstall_conn/uninstall.jar -silent`  
to uninstall IConnect.
- `java -jar uninstall_csdk/uninstall.jar -silent`  
to uninstall Client SDK.
- `java -cp jdbc/_uninst/uninstall.jar -silent`  
to uninstall the JDBC driver.

No interaction is required to complete the uninstall in silent mode.

---

## Uninstalling After Using the Extraction Application with Command-Line Script

If you have used the extraction application with command-line script to install the server (instead of the application program), and you want to uninstall the server, you must remove the IBM Informix product files manually.

To remove the files manually, run the following command from the `$INFORMIXDIR` directory as the **root** user:

```
rm -rf productfiles
```

To uninstall ISA, run the following command from the directory where you installed ISA as the **root** user:

```
rm -rf
```

---

## Uninstalling Using RPM (Linux)

To uninstall IBM Informix products that you installed manually with RPM, follow the procedures below.

You must uninstall the old version of the database server before you install the new version with RPM.

**Note:** If the same version of Dynamic Server, or different versions, whose subcomponents, such as GLS or messages, are installed on the same machine, RPM might uninstall the wrong one.

As the procedures below show, you must query the package name before uninstalling and then specify that package name when you run the uninstallation. For the specific query and uninstall command, see Table 4-1 that follows the procedure.

### To uninstall IBM Informix products on Linux using RPM:

1. Log in as **root**.
2. Run the command to query the package name.
3. Run the command to uninstall the package.
4. Repeat steps 2 and 3 for all product packages installed.

Table 4-1. Uninstalling with RPM

Product Package	Command to Query Package Name	Command to Uninstall Package
Dynamic Server	<code>rpm -qf bin/oninit</code>	<code>rpm -e IIF -fullpackagename</code>
Messages	<code>rpm -qf msg</code>	<code>rpm -e msg -fullpackagename</code>
GLS	<code>rpm -qf gls</code>	<code>rpm -e gls -fullpackagename</code>

Table 4-1. Uninstalling with RPM (continued)

Product Package	Command to Query Package Name	Command to Uninstall Package
Client SDK	<code>rpm -qf bin/esql</code>	<code>rpm -e csdk -fullpackagename</code>
IConnect	<code>rpm -qf bin/esqlvers</code>	<code>rpm -e iconn -fullpackagename</code>

To discover which particular package or packages owns a file, run the `rpm -qf filename` command.

For more information, see <http://www.rpm.org> or the **rpm** manual pages.





---

## Appendix A. Setting Up Multiple Residency

---

### In This Appendix

This appendix discusses multiple residency. *Multiple residency* refers to multiple database servers and their associated shared memory and disk structures coexisting on a single computer.

Creating multiple independent database server environments on the same computer allows you to:

- Separate production and development environments

You can separate production and development environments to protect the production system from the unpredictable nature of the development environment.

- Isolate sensitive databases

You can isolate applications or databases that are critically important, either to increase security or to accommodate more frequent backups than most databases require.

When you use multiple residency, each database server has its own configuration file. Thus, you can create a configuration file for each database server that meets its special requirements for backups, shared-memory use, and tuning priorities.

- Test distributed data transactions on a single computer

If you are developing an application for use on a network, you can use local loopback to perform your distributed-data simulation and testing on a single computer. (See the section on using a local loopback connection in the *IBM Informix: Dynamic Server Administrator's Guide*.) Later, when a network is ready, you can use the application without changes to application source code.

---

### Planning for Multiple Residency

Running multiple database servers on the same computer is not as efficient as running one database server. You need to balance the advantages of separate database servers against the extra performance cost.

When you plan for multiple residency on a computer, consider the following factors:

- Memory

Each database server needs its own memory. Can your computer handle the memory usage that an additional database server requires?

- Storage space

Each database server must have its unique storage space. You cannot use the same disk space for more than one instance of a database server. When you prepare an additional database server, you must repeat some of the planning that you did to install the first database server. For example, consider these questions:

- Will you use buffered or unbuffered files? Will the unbuffered files share a disk partition with another application? (For more information on buffered and unbuffered files, see the section on direct disk access in the *IBM Informix: Administrator's Guide*.)

- Will you use mirroring? Where will the mirrors reside?
- Where will the message log reside?
- Can you dedicate a tape drive to this database server for its logical logs?
- What kind of backups will you perform?

---

## Creating a New Database Server

Before you set up multiple residency, you must install one database server as described in Chapter 1, “Preparing to Install Dynamic Server,” on page 1-1.

**Important:** You do not need to install more than one copy of the database server binary files. All instances of the same version of the database server on one computer can share the same executable files.

### To create multiple residency of a database server:

1. Prepare a new **onconfig** configuration file and set the **ONCONFIG** environment variable to the new filename (page A-2).
2. If needed, set up connectivity for the new database server instance (page A-3).
3. Initialize disk space for the new database server instance (page A-3).
4. Prepare the backup environment for multiple residency (page A-4).
5. Modify the operating-system startup to start the new database server instances automatically (page A-4).
6. Check the **INFORMIXSERVER** environment variables for users (page A-4).

For more information, see the *IBM Informix: Dynamic Server Administrator's Guide*.

## Setting Up the onconfig File

Each instance of the database server must have its own **onconfig** configuration file. Make a copy of an **onconfig** file that has the basic characteristics that you want for your new database server. Give the new file a name that you can easily associate with its function. For example, you might select the filename **onconfig.act** to indicate the configuration file for a production system that contains accounting information.

Set the **ONCONFIG** environment variable to the filename of the new **onconfig** file. Specify only the filename, not the complete path.

In the new configuration file, change the following configuration parameters:

- **SERVERNUM**  
The **SERVERNUM** parameter specifies an integer (between 0 and 255) associated with a database server configuration. Each instance of a database server on the same host computer must have a unique **SERVERNUM** value. For more information, see the section on **SERVERNUM** in the *IBM Informix: Administrator's Reference*.
- **DBSERVERNAME**  
The **DBSERVERNAME** parameter specifies the **dbservername** of a database server. It is suggested that you choose a name that provides information about the database server, such as **ondev37** or **hostnamedev37**. For more information, see the section on **DBSERVERNAME** in the *IBM Informix: Administrator's Reference*.
- **MSGPATH**

The MSGPATH parameter specifies the pathname of the message file for a database server. You should specify a unique pathname for the message file because database server messages do not include the dbservername. If multiple database servers use the same MSGPATH, you cannot identify the messages from separate database server instances. For example, if you name the database server **ondev37**, you might specify **/usr/informix/dev37.log** as the message log for this instance of the database server.

- ROOTPATH and ROOTOFFSET

The ROOTPATH and ROOTOFFSET parameters together specify the location of the root dbspace for a database server. The root dbspace location must be unique for every database server configuration.

If you put several root dbspaces in the same partition, you can use the same value for ROOTPATH. However, in that case, you must set ROOTOFFSET so that the combined values of ROOTSIZE and ROOTOFFSET define a unique portion of the partition. For more information about ROOTPATH and ROOTOFFSET, refer to the chapter on configuration parameters in the *IBM Informix: Administrator's Reference*.

You do not need to change ROOTNAME. Even if both database servers have the name **rootdbs** for their root dbspace, the dbspaces are unique because ROOTPATH specifies a unique location.

You might also need to set the MIRRORPATH and MIRROROFFSET parameters. If the root dbspace is mirrored, the location of the root dbspace mirror must be unique. For information about setting MIRRORPATH, see the *IBM Informix: Administrator's Guide*.

## Setting Up Connectivity Information

If you use the TCP/IP communication protocol, you might need to add an entry to the **services** file for the new database server instance. If you use the IPX/SPX communication protocol, you might need to modify the connection information for the NetWare server.

The **sqlhosts** file must have an entry for each database server. If IBM Informix products on other computers access this instance of the database server, the administrators on those computers must update their **sqlhosts** files.

If you plan to use TCP/IP network connections with an instance of a database server, the system network administrator must update the **hosts** and **services** files. If you use an IPX/SPX network, the NetWare administrator must update the NetWare file-server information.

For information about these files, see the chapter on client/server communications in the *IBM Informix: Administrator's Guide*.

## Initializing Disk Space

Before you initialize disk space, check the setting of your **ONCONFIG** environment variable. If you have not set it correctly, you might overwrite data from another database server. When you initialize disk space for a database server, the database server initializes the disk space specified in the current **ONCONFIG** configuration file.

**Warning:** As you create new blobspaces or dbspaces for a database server, be sure to assign each chunk to a unique location on the device. The database

server does not allow you to assign more than one chunk to the same location within a single database server environment, but it remains your responsibility as administrator to make sure chunks that belong to different database servers do not overwrite each other.

## Preparing the Backup Environment for Multiple Residency

Depending on your backup method, you must prepare the backup environment for multiple residency.

### Preparing for ON-Bar backups

ON-Bar allows you to back up data from various database server instances to a single storage device if the storage manager allows it. The storage manager keeps track of what data has been backed up. However, it is recommended that you keep storage-space and logical-log backups on separate storage devices.

### Preparing for ontape backups

When you use multiple residency, you must maintain separate storage-space and logical-log backups for each database server instance.

If you can dedicate a tape drive to each database server, use the continuous-logging option to back up your logical-log files. Otherwise, you must plan your storage-space and logical-log backup schedules carefully so that use of a device for one database server instance does not cause the other database server instance to wait. You must reset the ONCONFIG configuration parameter each time you switch backup operations from one database server instance to the other.

## Modifying Operating-System Startup for Multiple Server Instances

You can ask your system administrator to modify the system startup script so that each of your database server instances starts whenever the computer is rebooted, for example, after a power failure (see page 3-4). For more information about startup scripts, see the section on preparing UNIX startup and shutdown scripts in the *IBM Informix: Administrator's Guide*.

To start a second instance of a database server, change the **ONCONFIG** and **INFORMIXSERVER** environment variables to point to the configuration file for the second database server and then execute **oninit**. Do not change **INFORMIXDIR** or **PATH**.

Similarly, you can ask the system administrator to modify the shutdown script so that all instances of a database server shut down normally.

## Setting the INFORMIXSERVER Environment Variable

If a new instance of a database should be the default database server, users must reset the **INFORMIXSERVER** environment variable. Users might also need to update their **.informix** files.

If you use the **informix.rc** file to set environment variables for the users, you might need to update that file. The *IBM Informix: Guide to SQL Reference* describes the **informix.rc** and **.informix** files.

---

## Appendix B. Solving Installation Problems

---

### In This Appendix

This appendix describes the most common installation problems you might encounter and the corresponding solutions. This appendix covers:

- Solving Installer Failures
- Solving Problems After Installation
- Solving Problems Using IBM Informix Products

For more information about any errors that occur during the install, check the install log in `$INFORMIXDIR/tmp/log.txt`.

If any of the problems in this section persist, contact Tech Support at the IBM Informix product family technical support site, <http://www.ibm.com/software/data/informix/support>.

---

### Solving Installer Failures

The following problems might occur when you run the installer.

- *Problem.* When you attempt an installation, the following message appears:  
Please rerun this installation procedure as root.  
*Solution.* Make sure that you are logged in as user **root**.
- *Problem.* When you run the installation command, the following message appears:  
chown filename: Not owner.  
*Solution.* Remove `$INFORMIXDIR` and all its files. Then follow the procedures in "Creating group informix and user informix" on page 1-1 and perform all subsequent steps.
- *Problem.* When you run the installation command, the bundled JRE is not found.  
*Solution.* Ensure that a valid JRE, Version 1.3.2 or higher, is present on your computer and ensure that the installation script can find it by performing one of the following actions:
  - Add it to the `$PATH`.
  - Set `$JAVAHOME`.
  - Provide the argument `-is:javahome directory_where_JRE_is_installed`, for example:  
`./ids_install -is:javahome directory_where_JRE_is_installed`
  - Let the installation script search for it if the JRE is in a standard location.
  - Directly invoke the installer Java class with the command:  
`java -cp IIF.jar run`

---

### Solving Problems After Installation

The problems in this section relate to difficulties accessing IBM Informix products after installation.

- *Problem.* You try to run an IBM Informix product program from the command line (or alternative method), and you receive only a system prompt or the following (or a similar) message:  
*program:* Command not found.  
*Solution.* Verify that the environment variables are set properly (see “Configuring the Database Server” on page 3-1).  
If the environment variables are set correctly, check to see if another file with the same name exists in your search path that would be accessed before the Informix executable file. Move, rename, or delete that file, or reorder the search path so that the path in which the Informix executable resides precedes the path in which the conflicting executable resides.
- *Problem.* You try to invoke an IBM Informix product from the command line (or alternative method), but you get the following (or a similar) message:  
Unknown message number 32766  
*Solution.* Verify that the **INFORMIXDIR** environment variable is set correctly. If you changed the default settings for the **DBLANG** and **CLIENT\_LOCALE** environment variables, change them back to the default, and try to invoke the IBM Informix product again (see “Configuring the Database Server” on page 3-1).
- *Problem.* You try to send a command to an IBM Informix product from the command line (or through an alternative method), but you receive the following (or a similar) message:  
cannot attach to shared memory  
*Solution.* Before you use the database server, bring it to online mode. See the chapter on managing database server modes in the *IBM Informix: Administrator's Guide*.

---

## Solving Problems Using IBM Informix Products

The problems in this section relate to product usage.

- *Problem.* The list of databases is incomplete.  
*Solution.* Check that the **DBPATH** environment variable contains the names of all other database servers not referenced by the **INFORMIXSERVER** environment variable.
- *Problem.* After you access an IBM Informix application, the screen display is unformatted.  
*Solution.* Verify that the **TERM**, **TERMCAP** (or **TERMINFO**), and **INFORMIXTERM** environment variables are set correctly (see “Configuring the Database Server” on page 3-1).
- *Problem.* You successfully install your IBM Informix products and you successfully invoke the database server, but you cannot connect to the database server.  
*Solution.* Check that your environment variables and your **sqlhosts**, **/etc/hosts**, and **/etc/services** files do not contain typographical errors, misspellings, or inconsistencies.  
If you use a network information system, check that the changes you make to the **services** file are properly accessed and available to your computer.  
Check that the database server is configured correctly. See the chapter on client/server connectivity in the *IBM Informix: Administrator's Guide*.
- *Problem.* Unusual problems occur (for example, networking problems on Hewlett-Packard computers or unexplainable failures on Sun computers).

*Solution.* Your system might need a patch. Read the machine notes file for advice on patch information. For more information, see “Online Notes” on page xi.

---

## Solving RPM Failures (Linux)

The following problems might occur while you use the **rpm** utility to load or unload an IBM 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 user **root**.

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

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

*Solution.* Check that you are logged in as user **root**. Use the **chmod** command to grant write permission on the current directory and then run **rpm** 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 group informix and user informix” on page 1-1 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 “Uninstalling Using RPM (Linux)” on page 4-2.

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

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

*Solution.* If you relocate the package installation directory by selecting a target directory other than the default, you must specify an absolute pathname for the target directory. For example:

```
rpm -iv --relocate /opt/informix=$INFORMIXDIR *.rpm
```





---

## Appendix C. Accessibility

The syntax diagrams in the HTML version of this manual are available in dotted decimal syntax format, which is an accessible format that is available only if you are using a screen reader.

---

### Dotted Decimal Syntax Diagrams

In dotted decimal format, each syntax element is written on a separate line. If two or more syntax elements are always present together (or always absent together), the elements can appear on the same line, because they can be considered as a single compound syntax element.

Each line starts with a dotted decimal number; for example, 3 or 3.1 or 3.1.1. To hear these numbers correctly, make sure that your screen reader is set to read punctuation. All syntax elements that have the same dotted decimal number (for example, all syntax elements that have the number 3.1) are mutually exclusive alternatives. If you hear the lines 3.1 USERID and 3.1 SYSTEMID, your syntax can include either USERID or SYSTEMID, but not both.

The dotted decimal numbering level denotes the level of nesting. For example, if a syntax element with dotted decimal number 3 is followed by a series of syntax elements with dotted decimal number 3.1, all the syntax elements numbered 3.1 are subordinate to the syntax element numbered 3.

Certain words and symbols are used next to the dotted decimal numbers to add information about the syntax elements. Occasionally, these words and symbols might occur at the beginning of the element itself. For ease of identification, if the word or symbol is a part of the syntax element, the word or symbol is preceded by the backslash (\) character. The \* symbol can be used next to a dotted decimal number to indicate that the syntax element repeats. For example, syntax element \*FILE with dotted decimal number 3 is read as 3 \\* FILE. Format 3\* FILE indicates that syntax element FILE repeats. Format 3\* \\* FILE indicates that syntax element \* FILE repeats.

Characters such as commas, which are used to separate a string of syntax elements, are shown in the syntax just before the items they separate. These characters can appear on the same line as each item, or on a separate line with the same dotted decimal number as the relevant items. The line can also show another symbol that provides information about the syntax elements. For example, the lines 5.1\*, 5.1 LASTRUN, and 5.1 DELETE mean that if you use more than one of the LASTRUN and DELETE syntax elements, the elements must be separated by a comma. If no separator is given, assume that you use a blank to separate each syntax element.

If a syntax element is preceded by the % symbol, this identifies a reference that is defined elsewhere. The string following the % symbol is the name of a syntax fragment rather than a literal. For example, the line 2.1 %OP1 means that you should refer to a separate syntax fragment OP1.

The following words and symbols are used next to the dotted decimal numbers:

? Specifies an optional syntax element. A dotted decimal number followed

by the ? symbol indicates that all the syntax elements with a corresponding dotted decimal number, and any subordinate syntax elements, are optional. If there is only one syntax element with a dotted decimal number, the ? symbol is displayed on the same line as the syntax element (for example, 5? NOTIFY). If there is more than one syntax element with a dotted decimal number, the ? symbol is displayed on a line by itself, followed by the syntax elements that are optional. For example, if you hear the lines 5 ?, 5 NOTIFY, and 5 UPDATE, you know that syntax elements NOTIFY and UPDATE are optional; that is, you can choose one or none of them. The ? symbol is equivalent to a bypass line in a railroad diagram.

! Specifies a default syntax element. A dotted decimal number followed by the ! symbol and a syntax element indicates that the syntax element is the default option for all syntax elements that share the same dotted decimal number. Only one of the syntax elements that share the same dotted decimal number can specify a ! symbol. For example, if you hear the lines 2? FILE, 2.1! (KEEP), and 2.1 (DELETE), you know that (KEEP) is the default option for the FILE keyword. In this example, if you include the FILE keyword but do not specify an option, default option KEEP is applied. A default option also applies to the next higher dotted decimal number. In this example, if the FILE keyword is omitted, default FILE(KEEP) is used. However, if you hear the lines 2? FILE, 2.1, 2.1.1! (KEEP), and 2.1.1 (DELETE), the default option KEEP only applies to the next higher dotted decimal number, 2.1 (which does not have an associated keyword), and does not apply to 2? FILE. Nothing is used if the keyword FILE is omitted.

\* Specifies a syntax element that can be repeated zero or more times. A dotted decimal number followed by the \* symbol indicates that this syntax element can be used zero or more times; that is, it is optional and can be repeated. For example, if you hear the line 5.1\* data-area, you know that you can include more than one data area or you can include none. If you hear the lines 3\*, 3 HOST, and 3 STATE, you know that you can include HOST, STATE, both together, or nothing.

**Notes:**

1. If a dotted decimal number has an asterisk (\*) next to it and there is only one item with that dotted decimal number, you can repeat that same item more than once.
2. If a dotted decimal number has an asterisk next to it and several items have that dotted decimal number, you can use more than one item from the list, but you cannot use the items more than once each. In the previous example, you could write HOST STATE, but you could not write HOST HOST.
3. The \* symbol is equivalent to a loop-back line in a railroad syntax diagram.

+ Specifies a syntax element that must be included one or more times. A dotted decimal number followed by the + symbol indicates that this syntax element must be included one or more times. For example, if you hear the line 6.1+ data-area, you must include at least one data area. If you hear the lines 2+, 2 HOST, and 2 STATE, you know that you must include HOST, STATE, or both. As for the \* symbol, you can only repeat a particular item if it is the only item with that dotted decimal number. The + symbol, like the \* symbol, is equivalent to a loop-back line in a railroad syntax diagram.

---

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