Oracle Internet File System

Installation and Configuration Guide

Release 9.0.2 for UNIX Systems: AIX-Based Systems, Compaq Tru64 UNIX, HP 9000 Series HP-UX, Linux Intel, and Sun SPARC Solaris

April 2002

Part No. A95994-01

ORACLE

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Contents

3 Installation and Configuration

4 Post-configuration

5 Client Software Installation

6 Troubleshooting

A Creating a Database for Oracle 9*i*FS

B Oracle Internet Directory and Oracle Enterprise Manager Reference

C Configuration Worksheets

Index

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Preface

This manual describes how to install Oracle Internet File System (Oracle 9*i*FS) for UNIX Systems: AIX-Based Systems, Compaq Tru64 UNIX, HP 9000 Series HP-UX, Linux Intel, and Sun SPARC Solaris systems.

Intended Audience

The instructions in this document are intended for anyone responsible for installing Oracle products on UNIX systems. Although some command examples are provided, this document does not attempt to teach Oracle products or UNIX server administration. You should have a basic understanding of the concepts inherent in administering Oracle products and UNIX operating systems before attempting to install and configure this software.

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Structure

This Installation and Configuration Guide contains six chapters and an appendix:

Chapter 1, "Configuration Concepts"

This chapter provides an overview of the Oracle 9*i*FS domain and basic administration concepts and discusses how Oracle 9*i*FS can use Oracle Internet Directory for authentication.

Chapter 2, "Pre-installation"

This chapter provides information about hardware and software requirements and describes various pre-installation tasks.

Chapter 3, "Installation and Configuration"

This chapter steps through installing and configuring Oracle 9*i*FS.

Chapter 4, "Post-configuration"

This chapter provides instructions for starting and stopping the Oracle 9*i*FS server and testing basic operations; setting up Oracle Text and starting the indexing function; and installing and configuring the NFS (Network File System) server.

Chapter 5, "Client Software Installation"

This chapter provides information to enable users to start working with Oracle 9*i*FS. It includes instructions for installing Oracle 9*i*FS client software that extends the capabilities of Windows when working with Oracle 9*i*FS.

Chapter 6, "Troubleshooting"

This chapter contains information for solving installation problems.

Appendix C, "Configuration Worksheets"

This appendix contains tables for user account names, passwords, and other administration details required to configure Oracle Internet File System and related components.

Appendix B, "Oracle Internet Directory and Oracle Enterprise Manager Reference"

This appendix includes information about using Oracle 9*i*FS Credential Manager Configuration Assistant and about configuring Oracle Enterprise Manager.

Related Documents

For more information, see the following manuals in the Oracle Internet File System, Oracle9*i* Database Server, and Oracle9*i* Application Server documentation sets.

- *Oracle Internet File System Release Notes*
- *Oracle Internet File System Setup and Administration Guide*
- *Oracle Internet File System Developer Reference*
- *Oracle Text Reference*
- *Oracle9i Administrator's Guide*
- *Oracle9i User-Managed Backup and Recovery Guide*
- *Oracle Enterprise Manager Administrator's Guide*
- *Oracle Enterprise Manager Concepts Guide*
- *Oracle Enterprise Manager Configuration Guide*
- *Oracle9i Net Services Administrator's Guide*
- *Oracle9i Globalization Support Guide*
- *Oracle9i Application Server Installation Guide*
- *Oracle9i Application Server: Migrating from Oracle9i Application Server 1.x*
- *Oracle9i Application Server Concepts Guide*
- *Oracle9i Application Server Administrator's Guide*
- *Oracle Internet Directory Administrator's Guide*

Conventions

The following conventions are used in this manual:

Convention	Meaning
. . .	Vertical ellipsis points in an example mean that information not directly related to the example has been omitted.
. . .	Horizontal ellipsis points in statements or commands mean that parts of the statement or command not directly related to the example have been omitted
boldface text	Boldface type in text indicates a term defined in the text, the glossary, or in both locations.
< >	Angle brackets enclose user-supplied names.
[ ]	Brackets enclose optional clauses from which you can choose one or none.

1

Configuration Concepts

Oracle Internet File System (Oracle 9iFS) runs in conjunction with Oracle9i Application Server and an Oracle9*i* database. Written entirely in Java, Oracle 9iFS is an extensible content management system with file server convenience. Oracle 9iFS is accessible through numerous protocols, such as AFP (AppleTalk Filing Protocol), HTTP (HyperText Transfer Protocol), NFS (Network File System), SMB (Server Message Block), WebDAV (Distributed Authoring and Versioning), to name a few.

However, unlike traditional protocol servers, all content is stored in an Oracle database, not on the file system of the server machine. No additional client software is required. Users access Oracle 9*i*FS using the native client protocols available on their operating systems. For example, Mac users can connect from the Chooser to Oracle 9*i*FS as if it were any other AppleShare server. Windows[1] users map a network drive or connect using Web Folders; UNIX clients can connect using NFS.

In addition to the file-system application features of the product, Oracle 9*i*FS exposes a set of APIs that third-party developers can use to customize and extend the product's core functionality in numerous ways to build comprehensive content-management and collaboration systems.

This guide provides information about configuring Oracle 9*i*FS on UNIX-based systems. Before configuring Oracle 9*i*FS, you should understand these basic concepts:

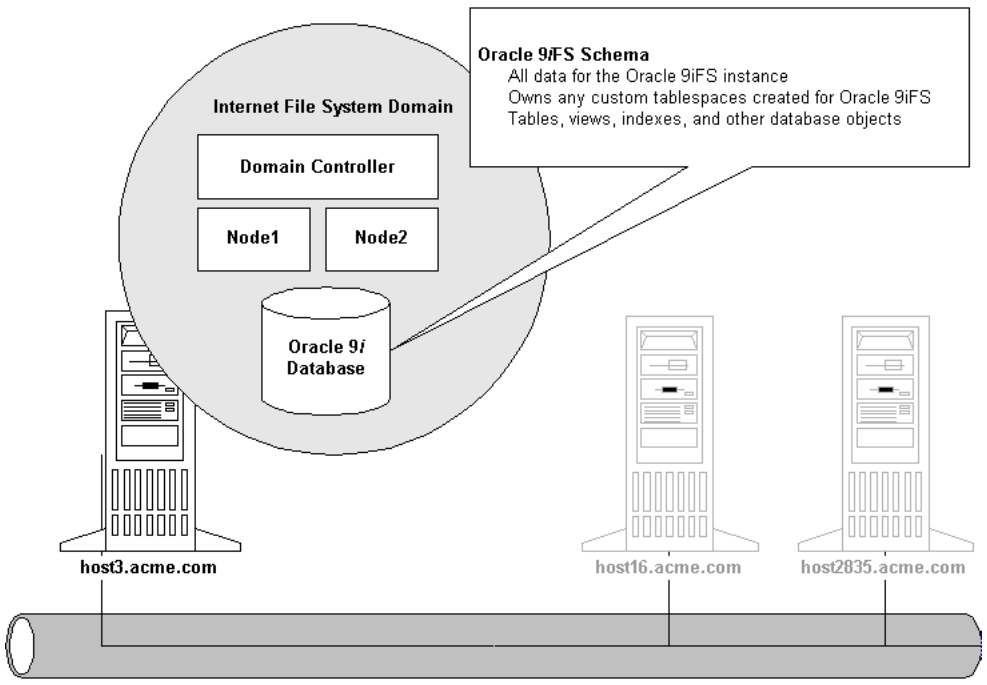
- The Oracle 9iFS Domain
- Integration with Oracle9i Application Server

[1] Oracle provides optional client applications, such as Oracle 9*i*FS FileSync and Oracle 9*i*FS Windows Utilities, that enhance file management for Windows users.

The Oracle 9*i*FS Domain

In simple terms, an Oracle 9*i*FS domain is a logical grouping of Oracle 9*i*FS *nodes* and an Oracle9*i* database instance that contains all Oracle 9*i*FS data. The Oracle 9*i*FS schema is created in an Oracle database during the configuration process. The schema owns all database objects, including metadata about Oracle 9*i*FS and configuration information (see Figure 1–1).

Figure 1–1 A Single Machine Oracle 9iFS Domain

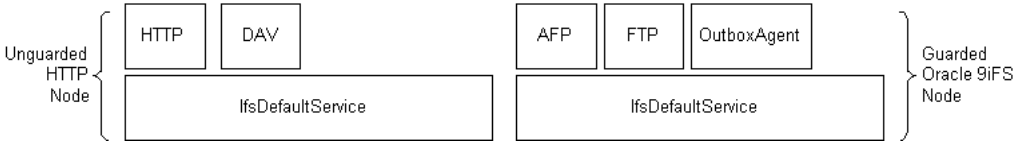


An Oracle 9*i*FS node is a particular set of processes running on a host machine. One or more node processes can run on a host machine. An Oracle 9*i*FS node is essentially the application software that comprises the product and the underlying processes (the Java VM (virtual machine), for example) that support the software at runtime. The Oracle 9*i*FS domain controller process (referred to simply as "domain controller") is the linchpin of the domain in that it "knows about" the Oracle 9iFS schema and all nodes.

This description is oversimplified, but for purposes of installing and configuring the software, the important concepts to understand are these:

- An Oracle 9*i*FS domain encompassing any number of nodes is controlled by one (and only one) domain controller process.
- An Oracle 9*i*FS domain includes two nodes by default: one Oracle 9*i*FS node, and one HTTP node (see Figure 1–2). You can also configure additional nodes on additional machines.
- The Oracle 9*i*FS node supports AFP, FTP, IMAP, NFS, SMB, and other types of protocol servers and agents.
  - Each Oracle 9*i*FS node is monitored by a node guardian process, which automatically attempts recovery when error conditions occur. This means that the Oracle 9*i*FS node has built-in fault tolerance.
- The HTTP node supports HTTP and WebDAV by means of a servlet that is configured to work with the Oracle HTTP Server, specifically, to the Oracle9*i*AS Containers for J2EE (OC4J).
  - The HTTP node is not guarded by a separate guardian process. However, administrators can use Oracle Enterprise Manager to monitor the HTTP node and re-start it when necessary, by creating an operating system-based job. See the *Oracle Internet File System Setup and Administration Guide* for more information.

Figure 1–2 Nodes Comprise Services, Servers, and Agents

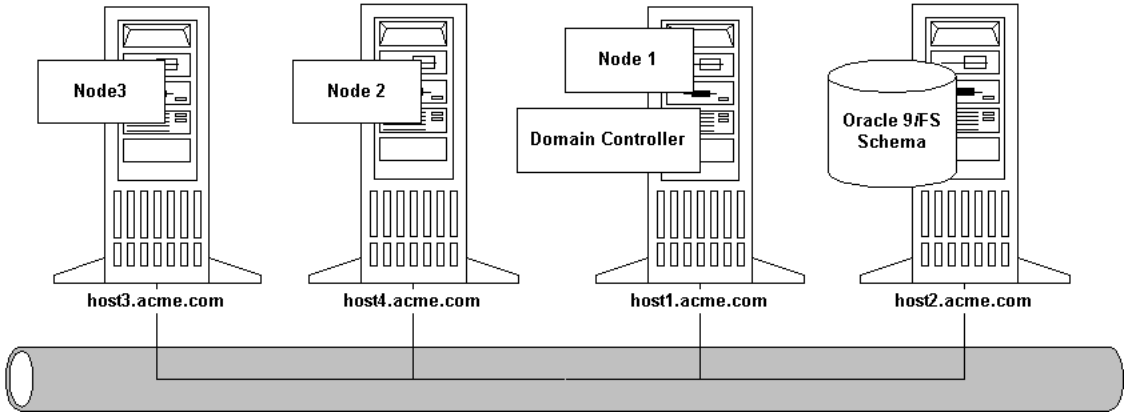


The relationship of the domain, Oracle 9*i*FS schema, and domain controller is 1:1:1. However, the Oracle 9*i*FS domain is a *logical* construct, not a physical one, which means that the Oracle 9*i*FS domain controller process, node processes, and the database itself can be physically configured on a single host machine, as shown in Figure 1–1; or across several, separate hosts, as shown in Figure 1–3.

Users aren't aware of whether the Oracle 9*i*FS instance is running across one machine or several machines. Users access content, such as folders and documents, using the appropriate client application for a particular Oracle 9*i*FS protocol server.

For example, Macintosh users connect to the Oracle 9*i*FS instance using the Mac Chooser, just as they do to connect a Mac-based AppleShare servers. Windows users connect to Oracle 9*i*FS by mapping a network drive or by using the Web folders feature (WebDAV) of Window's Map Network Drive dialog. And so on.

Figure 1–3 A Multiple Machine Oracle 9iFS Domain



When users connect to a specific protocol server, an underlying service on the node manages authentication of that end-user, and ultimately, manages the connection to the database where the content is actually stored. The services and servers are described in more detail in the next section.

Services, Servers, and Agents

Each node supports a *service* with specific configuration parameters, such as language, default character set, credential managers, and many other characteristics, including connections to the database and other features affecting performance. A node can support multiple services.

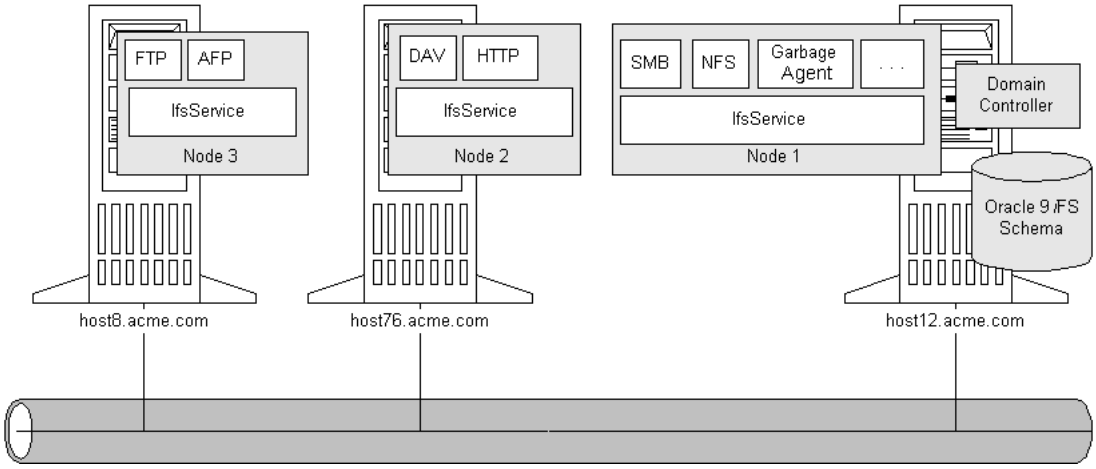
The service, in turn, supports *servers.* Each server is either a protocol server or an agent. The protocol servers function as typical protocol servers in that they listen for requests from clients on a specific IP port and respond to requests according to the rules of the protocol specification.

Agents adhere to the same design pattern as protocol servers, but rather than responding to requests from clients, agents perform operations periodically or in response to operations executed by other servers.

For example, the Garbage Collection Agent, which is installed automatically during configuration, deletes objects no longer associated with any document in Oracle 9*i*FS. It does so based on an activation period parameter that you set in the server configuration file. (If you don't configure the Garbage Collection Agent to run, performance of your Oracle 9*i*FS instance can be adversely affected.)

This architecture, in which services and servers are de-coupled, provides a great deal of flexibility. You can distribute services, protocol servers, and agents across a wide array of hardware and in configurations that best suit your business needs. For example, you can run all protocol servers on one service, and run all agents on another service.

Figure 1–4 Nodes, Services, and Servers in a Typical Oracle 9iFS Domain



As another example, you could configure a service on one node to support the Chinese language and character set, and configure another service on the same node to provide the same servers (on different port numbers) in English. (You could also create an additional separate node to accomplish this, but the node comprises another JVM, which consumes more resources.)

Given the flexibility and granularity of the deployment options available, it's important to think about the physical configuration before you start the installation and configuration process. As seen in Figure 3–7, "Oracle 9iFS Processes Page" you must decide if some or all of the various processes (the domain controller, nodes, agents, and so on) that comprise the system should be configured on the local machine.

Creating the domain controller process and configuring agents can only be done when creating the Oracle 9*i*FS schema (Creating a new Oracle 9*i*FS repository). In addition, because they function for the entire domain, agents run on only one node process in the domain. The Oracle 9*i*FS Configuration Assistant enables you to configure all these elements and takes care of many of the details automatically for you, by presenting the appropriate options, but you must plan in advance how you want to deploy the domain.

Oracle 9*i*FS Configuration Assistant

The Oracle 9*i*FS Configuration Assistant is a wizard that lets you create and configure an Oracle 9*i*FS domain. It also enables you to upgrade an existing Oracle Internet File System instance to a newer release of the software. Based upon your input, the Oracle 9*i*FS Configuration Assistant creates the domain controller, configures protocol servers, creates Oracle 9*i*FS schema objects in the database, and takes care of other configuration tasks.

Oracle 9*i*FS Configuration Assistant is launched automatically by Oracle Universal Installer during installation, but you can launch the tool from the command line as well. You can also prepare or modify a response file and pass the filename to the Configuration Assistant as a parameter, for a non-interactive, or "silent," configuration. (For details, see Chapter 3, "Installation and Configuration".)

Integration with Oracle9*i* Application Server

Oracle 9*i*FS is supported by Oracle9*i* Application Server and is especially designed to integrate with Oracle Internet Directory and Oracle Enterprise Manager, specifically with the new Oracle Enterprise Manager Web site that enables Web-browser-based monitoring and administration.

Oracle9*i* Application Server offers three primary installation types:

- Oracle9*i* Application Server
- Oracle9*i*AS Infrastructure
- Oracle9*i*AS Developer Kits

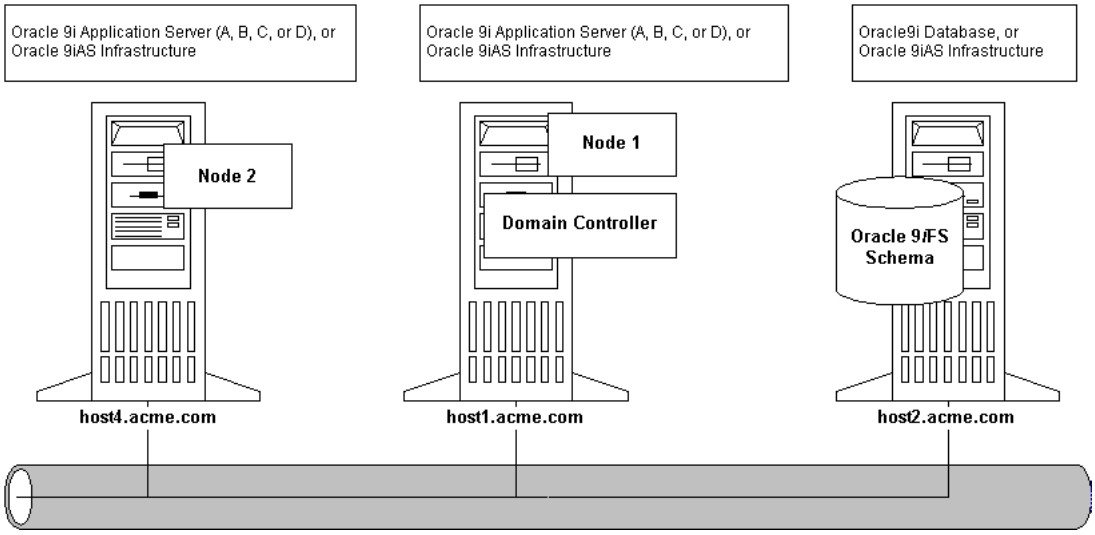
Of these three primary installation types, Oracle9*i*AS Infrastructure provides Oracle Internet Directory and Oracle Management Service (OMS, a component of Oracle Enterprise Manager) exclusively. Oracle9*i*AS Infrastructure includes a complete Enterprise Edition installation of the Oracle9*i* Database Server. During installation and configuration of Oracle9*i*AS Infrastructure, a database instance is created for the Oracle9*i*AS Metadata repository, and for the Oracle Internet Directory.

Oracle9*i* Application Server offers four different install types:

- A. J2EE and Web Cache
- B. Portal and Wireless
- C. Business Intelligence and Forms
- D. Unified Messaging

Any of these four installation types can be used as the basis of an Oracle 9*i*FS middle-tier server working in conjunction with an existing Oracle9*i* database, or with a database created on the same tier as the Oracle9*i*AS Infrastructure, as shown in Figure 1–5.

Figure 1–5 Example Oracle9i Application Server and Oracle 9iFS Configuration



Depending upon your needs, Nodes 1 and 2 in Figure 1–5 could also be supported by the other installation types (Oracle9*i* Application Server types B, C, or D, or the Oracle9*i*AS Infrastructure), but unless you're using some of the other software components provided by these installation types, there's no need for the extra overhead: Because of its small footprint, Oracle9*i* Application Server A. J2EE and Web Cache installation is ideal for supporting subsequent Oracle 9*i*FS nodes to comprise an Oracle 9*i*FS domain.

The remainder of this chapter provides a high-level overview of the integration of Oracle Internet Directory and Oracle Enterprise Manager with Oracle 9*i*FS. For more information about Oracle9*i* Application Server, see the *Oracle9i Application Server Installation Guide.*

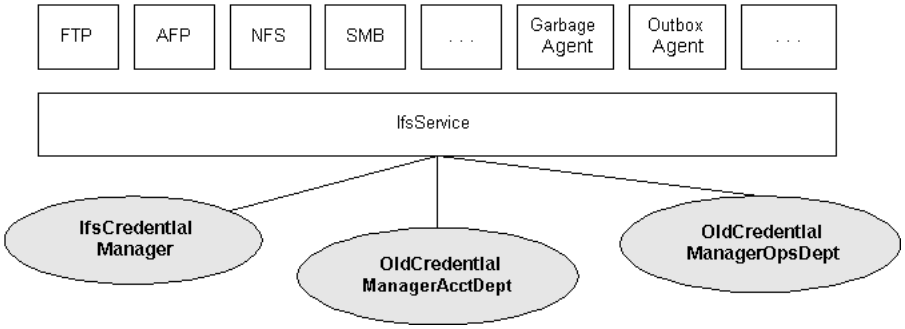
Integration with Oracle Internet Directory

Each Oracle 9*i*FS service handles user authentication by means of a credential manager. A user's credentials prove, or "authenticate," the user to the system that user is attempting to use, in this case, any one of the many Oracle 9*i*FS protocol servers. The credential manager associated with the service tells the service where and how to obtain the credential.

Services can use the native Oracle Internet File System credential manager, which stores credential information in the Oracle 9*i*FS schema. Or, services can use one or more Oracle Internet Directory instances for user authentication (see Figure 1–6).

Oracle Internet Directory is Oracle's LDAP (Lightweight Directory Access Protocol) v.3-compliant directory service implementation. Oracle Internet Directory can provide user authentication and other directory-service features to Oracle9*i* Application Server components, including Oracle 9*i*FS.

Figure 1–6 IfsCredentialManager and OidCredentialManagers



During configuration of Oracle 9*i*FS, you must select either the native Oracle Internet File System credential manager or Oracle Internet Directory. If you select the native credential manager, an "IfsCredentialManager" is created.

If you choose Oracle Internet Directory, the Oracle 9iFS Configuration Assistant launches and enables you to select an Oracle Internet Directory to be used with the credential manager, and then it creates the OidCredentialManager. Oracle Internet Directory must exist somewhere on the network. You will be prompted for the logon information for the Oracle Internet Directory service when you select OidCredentialManager during configuration of Oracle 9*i*FS.

When an OidCredentialManager is created during Oracle 9*i*FS, it is created with these default characteristics:

- The OidCredentialManager can accept cleartext, SMB Challenge/Response, HTTP Digest, or token credentials for authentication.
- Protocols that support cleartext authentication (AFP, CUP, FTP, and IMAP) are required to use an Oracle 9*i*FS-specific password, rather than the default Oracle Internet Directory password, for enhanced security.

You can use the Credential Manager Configuration Assistant to create credential managers of either type, or to delete or edit the settings for credential managers. Each service can use only one Oracle Internet File System credential manager, but can use multiple OidCredentialManagers, each associated with a different Oracle Internet Directory instance.

Administrators can use Oracle 9iFS Manager or WebUI to create users, delete users, list users, and set passwords in the Oracle Internet Directory (by means of the OidCredentialManager).

Oracle 9*i*FS Credential Manager Configuration Assistant

The Oracle 9*i*FS Credential Manager Configuration Assistant lets you create, edit, and configure IfsCredentialManagers and OidCredentialManagers.

For example, if the Oracle Internet Directory associated with a particular credential manager you've created migrates to a different host on the network, you will need to re-configure the OidCredentialManager accordingly. The Credential Manager Configuration Assistant is described briefly in the next section.

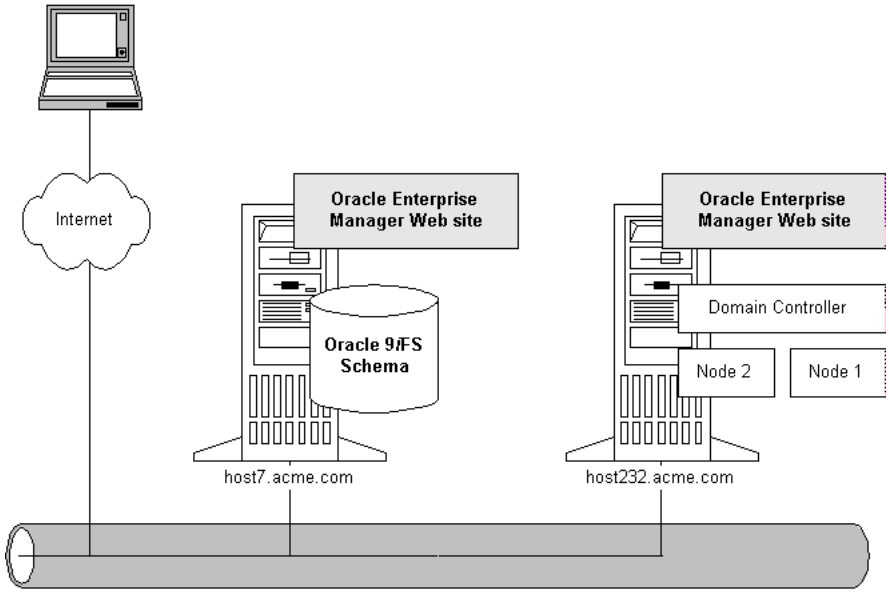
To identify and configure a specific OID instance for use with Oracle 9*i*FS as an OidCredentialManager, Oracle Internet Directory must already be configured and running (when you use this wizard), and you must know the administrative user name and password. See "Credential Manager Configuration Assistant" in Appendix B for information about how to use this tool.

Integration with Oracle Enterprise Manager

Oracle 9*i*FS leverages Oracle Enterprise Manager infrastructure to control Oracle 9*i*FS domain and node operations. Oracle Enterprise Manager is enterprise-class systems management software that enables you to manage and monitor Oracle databases and other Oracle server products, such as Oracle 9*i*FS. See "Oracle Enterprise Manager Configuration" in Appendix B, "Oracle Internet Directory and Oracle Enterprise Manager Reference" for information about configuring and using Oracle Enterprise Manager, specifically, the Java-based Oracle Enterprise Manager Console, with Oracle Internet File System.

With Oracle9*i* Application Server Release 2, Oracle introduces the Oracle Enterprise Manager Web site, which provides Web-based management tools designed specifically for managing Oracle9*i* Application Server and related components, including Oracle 9*i*FS, using a Web browser from anywhere on the network. Using this Web site, you can monitor Oracle 9*i*FS nodes, start a node, stop a node, and perform many other administration tasks. The administration page you see when you access an Oracle 9*i*FS node is called the "Oracle9*i*AS Home page."

Figure 1–7 Oracle Enterprise Manager Web Site



The software infrastructure that supports the Web-based management, specifically, the Oracle9*i*AS Containers for J2EE (OC4J) component of Oracle9*i* Application Server, is configured for Oracle 9*i*FS automatically at the end of the Oracle 9*i*FS configuration process. Whether you install Oracle 9*i*FS on one machine or multiple machines, you can use a browser to connect to the nodes in the domain on a server-by-server basis. For information about how to do so, see the *Oracle Internet File System Setup and Administration Guide.*

OC4J also supports Oracle 9*i*FS servlets, specifically, the DAV Servlet and the portlet servlet. After installing and configuring Oracle 9*i*FS, you must deploy these servlets to OC4J using a command-line utility provided with Oracle 9*i*FS. All such tasks are detailed in "Required Post-Configuration Tasks" in Chapter 4, "Post-configuration".

Many of the pre-installation, configuration, and post-configuration tasks detailed in this guide are designed to ensure successful integration of Oracle 9*i*FS and these other Oracle9*i* Application Server components. This overview has provided some key concepts only. See the *Oracle Internet File System Setup and Administration Guide* for complete information about administering Oracle 9*i*FS.

2

Pre-installation

This chapter provides information about system hardware and software requirements and how to prepare your system with the necessary Oracle software. Topics in this chapter include:

- Pre-Installation Tasks
- Hardware Requirements
- Operating System Requirements
- Oracle Database Requirements and Recommendations
- Oracle Software Requirements
- Deployment Configuration Options and Requirements
- Upgrade Requirements and Process Overview

> **Note:** Installing, configuring, and maintaining Oracle 9*i*FS requires knowledge of basic database administration concepts.

For additional information about any of the requirements or pre-installation steps involving Oracle9*i* Application Server, or components such as Oracle Internet Directory, see the appropriate guide from those listed under "Related Documents" in the Preface.

Pre-Installation Tasks

Before you attempt to install or upgrade Oracle 9*i*FS, be sure to:

- Verify Requirements and Choose a Deployment Type
- Gather Account, Password, and Service Information

- Back Up Existing Database and Log Files

Verify Requirements and Choose a Deployment Type

Evaluate your hardware resources and choose an appropriate deployment path:

- Multiple Tier Deployment
- Single Machine Deployment (not recommended for production environments)

Verify that all machines meet the requirements listed in "Hardware Requirements", "Operating System Requirements", "Oracle Database Requirements and Recommendations", and "Oracle Software Requirements".

Gather Account, Password, and Service Information

There are numerous administrative user accounts and passwords that you must know in advance or create as you install and configure these components. For example, if you plan to use Oracle Internet Directory for user authentication, you must know the Oracle Internet Directory service schema name and password, and `orcladmin` account password (the default is `welcome` at installation).

The "User Account and Password Summary Tables" in Appendix C is designed to help you organize the various schema, user account names, and passwords required during the installation and configuration process. If you document any system settings, be sure to keep the information in an absolutely secure place, or destroy it after you've successfully installed and configured all components.

Back Up Existing Database and Log Files

Before installing Oracle 9*i*FS into an existing database or before upgrading an Oracle 8.1.7.x database to Oracle 9*i*FS, you should shut down the database cleanly and perform a full backup so that you can recover from any errors that may occur. Also, back up the installation log files, located in the directory appropriate for the platform:

Platform	Installation Log File Location
AIX Based Systems	`/etc/oraInst.loc`
HP-UX	`/var/opt/oracle/oraInst.loc`
Linux Intel	`/var/opt/oracle/oraInst.loc`
Compaq Tru64	`/var/opt/oracle/oraInst.loc`

Platform	Installation Log File Location
Solaris	`/var/opt/oracle/oraInst.loc`

If you use SHUTDOWN IMMEDIATE or SHUTDOWN ABORT to force users off the system, be sure to restart the database in restricted mode, and then shut it down with normal priority before performing the backup.

Hardware Requirements

Table 2–1 lists the minimum requirements for CPU, RAM, and swap space for UNIX-based systems.

- The minimum hardware requirements are not intended for production deployments, but can support approximately two Oracle 9*i*FS users accessing two protocols concurrently.

Table 2–1 Minimum CPU, RAM, and Swap Space Requirements

Hardware Items	Minimum
AIX CPU	All AIX compatible processors
HP CPU	HP 9000 Series HP-UX processor for HP-UX 11.0 (64-bit)
Linux CPU	Pentium Pro or better
Tru64 CPU	Alpha Processor
Sun SPARC CPU	Sun Ultra 10
RAM (Middle-tier or Admin-only using the Java-based OEM Console)	384 MB
RAM (Single-machine Deployment)	512 MB
TMP or Swap space	1 GB

Table 2–2 lists the recommended requirements for CPU, RAM, and swap space for UNIX-based systems.

- The recommended hardware requirements support a workgroup of about 50 Oracle 9*i*FS users accessing all protocols moderately.
- To support more than 50 Oracle 9*i*FS users, Oracle recommends that you run the Oracle9*i* database (containing the Oracle 9*i*FS schema) and Oracle 9*i*FS domain controller and nodes on separate machines, in a multi-tier configuration.

Table 2–2 Recommended CPU, RAM, and Swap Space Requirements

Hardware Items	Recommended
AIX CPU	All AIX compatible processors
HP CPU	HP 9000 Series HP-UX processor for HP-UX 11.0 (64-bit)
Linux CPU	Pentium Pro or better
Tru64 CPU	Alpha Processor
Sun SPARC CPU	Sun Ultra 60, dual CPU
RAM (Middle-tier or Admin-only using the Java-based OEM Console)	512 MB
RAM (Single-machine Deployment)	1 GB
TMP or Swap space	2 GB

Oracle 9*i*FS requires 550 MB of free hard-disk drive space, in addition to the space required by Oracle9*i* Application Server. See the *Oracle9i Application Server Installation Guide* for hard-disk drive space requirements for UNIX-based systems.

Operating System Requirements

For AIX, HP-UX, Compaq Tru64, and Linux operating system requirements, see *Oracle9i Application Server Installation Guide*.

For Sun SPARC Solaris systems, Oracle 9*i*FS requires Sun SPARC Solaris 8 or Sun SPARC Solaris 7[1] with the specific patches required by Oracle9*i* Application Server. See the *Oracle9i Application Server Installation Guide* for Solaris patch requirements. You can download the patches from the Sun support web site (http://sunsolve.sun.com).

Kernel Parameters for Sun SPARC Solaris

For AIX-based systems, Compaq Tru64 UNIX, HP9000 Series HP-UX, and Linux Intel systems, see the release notes for the specific platform for information about additional configuration requirements.

For Sun SPARC Solaris systems, if you create a database instance on the machine, you must make sure the kernel parameters for shared memory match the settings in the *Oracle9i*

[1] Sometimes referred to as Solaris 2.8 or 5.8 and Solaris 2.7 or 5.7, respectively.

Installation Guide (excerpted as Table 2–3 for your convenience). However, note that the default settings typically meet or exceed these minimum values.

- If you make changes to the `/etc/system` file, be sure to reboot the machine so that the kernel settings can take effect.

Table 2–3 Minimum Values for a Single Oracle9i Database Instance

Kernel Parameter	Setting	Purpose
SEMMNI	100	Defines the maximum number of semaphore sets in the entire system.
SEMMNS	256	Defines the maximum semaphores on the system. This setting is a minimum recommended value, for initial installation only. The SEMMNS parameter should be set to the sum of the PROCESSES parameter for each Oracle database, adding the largest one twice, and then adding an additional 10 for each database.
SEMMSL	256	Defines the minimum recommended valvular initial installation only.
SHMMAX	4294967295	Defines the maximum allowable size of one shared memory segment. 4 GB = 4294967295
SHMMIN	1	Defines the minimum allowable size of a single shared memory segment.
SHMMNI	100	Defines the maximum number of shared memory segments in the entire system.
SHMSEG	10	Defines the maximum number of shared memory segments one process can attach.

See your hardware platform's documentation for more information.

Oracle Database Requirements and Recommendations

To use an Oracle9*i* Database Server, Release 1 database with Oracle 9*i*FS release 9.0.2, you must create a separate Oracle home for Oracle9*i* Application Server (Infrastructure, or Oracle9*i*AS A, B, C, or D) either on the same machine as the database or on a different machine, and into this Oracle home you install and configure Oracle 9*i*FS. See "Multiple Tier Deployment" for details.

If you have an existing Oracle production database that you want to use as the database tier for Oracle 9*i*FS, be sure that it meets these requirements:

- Oracle9*i* Database Server, Release 1 (9.0.1 or above); Enterprise or Standard Edition
- Oracle JVM 9.0.1 (or above). Required; included as part of Enterprise or Standard Edition Oracle database server. See "Oracle JVM Option ("JServer") Requirement" for information about how to confirm that this option exists in an existing database.
- Oracle Partitioning 9.0.1 (or above) Available in Enterprise Edition only. The Partitioning option is not required, but is recommended for faster performance. Oracle 9*i*FS uses the Partitioning option automatically if it's installed: administrators need not do anything other than install the option before configuring Oracle 9*i*FS.
- Oracle Text 9.0.1 (or above). Available in Enterprise Edition only. Optional, but highly recommended. Oracle Text option enables search capability on Oracle 9*i*FS content.
- Oracle Data Migration Assistant. Install ODMA to migrate an existing Oracle 8.1.7.2 database supporting Oracle Internet File System instance to Oracle9*i*.
- Oracle JDBC/OCI Driver for JDK 1.1 9.0.1.0.0
- Oracle JDBC/OCI Driver for JDK 1.2 9.0.1.0.0
- SQL*Plus 9.0.1 (or above)
- Initialization parameter values that meet the Initialization Parameter Requirements.
- Free space in the USERS tablespace of at least 450 MB to accomodate the tables and indexes created during Oracle 9*i*FS configuration (if you use the default USERS tablespace for Oracle 9*i*FS. For creating custom tablespaces instead, see "Custom Tablespace Definitions for Oracle 9iFS" in Appendix A for information about minimum free space in each custom tablespace.)

Initialization Parameter Requirements

Oracle9*i* Database Server should be configured using the parameters shown in Table 2–4. These parameters affect Oracle 9*i*FS installation and performance.

Table 2–4 Oracle9i Initialization Parameters

Parameter	Minimum Setting or Space Available
java_pool_size	30 MB
open_cursors	300
processes	100
shared_pool_size	50 MB (52428800 bytes)

To check the value of the parameters, connect to the database using SQL*Plus and query the `v$parameter` view, as follows:

```
% $ORACLE_HOME/bin sqlplus /nolog
SQL>connect system/<sys_password> as sysdba
Connected.
SQL>SELECT name, value FROM v$parameter WHERE name = 'processes';
```

The value of the processes parameter displays. Repeat the command above, replacing the word *processes* with the appropriate parameter name to check the other parameter values as listed in Table 2–4.

If you need to change any parameters, be aware that initialization parameter settings are managed differently in Oracle9*i* than in prior releases. See the database administration manual for your release for specific instructions before attempting to change any settings.

Oracle JVM Option ("JServer") Requirement

The Oracle 9*i*FS configuration will fail if the Oracle JVM option (also known as "JServer") is not installed and running in the database. The simplest way to verify that the Oracle JVM option exists is to connect to the database instance using SQL*Plus and run this query:

```
% sqlplus /nolog
SQL>connect sys/password as sysdba;
Connected.
SQL>select count(*) from all_objects where object_name = 'DBMS_JAVA';
```

The query should return a count of 3, as shown in the sample below. If it does not, JServer is not installed, and the Oracle 9*i*FS configuration will fail.

```
  COUNT(*)
----------
         3
```

See the *Oracle9i Installation Guide* for information about correctly installing the database with this option.

Oracle Software Requirements

Here are two important additional requirements for this release of Oracle 9*i*FS:

- Oracle 9.0.2 Home Requirement
- Manual Creation of tnsnames.ora File

Oracle 9.0.2 Home Requirement

Oracle 9*i*FS 9.0.2 requires an Oracle 9.0.2 home, specifically an Oracle home that comprises Oracle9*i* Application Server 9.0.2 software. You can use any of the following install types:

- Oracle9*i* Application Server, which offers:
  - A. J2EE and Web Cache
  - B. Portal and Wireless
  - C. Business Intelligence and Forms
  - D. Unified Messaging
- Oracle9*i*AS Infrastructure

The Oracle9*i*AS, Infrastructure installation is a pre-requisite for all other Oracle9*i* Application Server installation types except for A. J2EE and Web Cache. The Oracle9*i*AS, Infrastructure creates an Oracle database and installs a Metadata Repository for the Oracle9*i*AS instance. The Oracle9*i*AS, Infrastructure installation type includes:

- Enterprise Edition of the Oracle9*i* Database Server (with Oracle Text and Partitioning, two recommended features for Oracle 9*i*FS as noted in "Oracle Database Requirements and Recommendations"), which you can use to create a new database for your Oracle 9*i*FS instance, if you don't have an existing production database. See Appendix A, "Creating a Database for Oracle 9iFS" for details.
- Oracle Internet Directory. If you want to use Oracle Internet Directory with Oracle 9*i*FS for user authentication, you must configure the Oracle Internet Directory component of Oracle9*i*AS, Infrastructure.
- Oracle Enterprise Manager. If you want to use Oracle 9*i*FS Manager in addition to (or instead of) the Web-based administration tools, you must configure the Oracle Enterprise Manager component of the Oracle9*i*AS, Infrastructure.

See the *Oracle9i Application Server Installation Guide* for complete information about installing and configuring the appropriate type of Oracle9*i* Application Server.

Manual Creation of tnsnames.ora File

If you use the Oracle9*i*AS, A. J2EE and Web Cache install type for Oracle 9*i*FS, you must manually create a `$ORACLE_HOME/network/admin/tnsnames.ora` file with specifications for your server ***before*** you can install and configure Oracle 9*i*FS. Copy and paste the text below into the tnsnames.ora file:

```
myIfsInstance =
```

```
(DESCRIPTION =
  (ADDRESS_LIST =
    (ADDRESS = (PROTOCOL = TCP)(HOST = myIfsMachineName)(PORT = 1521))
  )
  (CONNECT_DATA =
    (SERVICE_NAME = myIfsService.myCompany.com)
  )
)
```

Replace `myIfsInstance`, `myIfsMachineName`, and `myIfsService.myCompany.com` with the correct information for the database service that you're using for Oracle 9*i*FS.

Deployment Configuration Options and Requirements

Here are some guidelines for how to deploy Oracle 9*i*FS and Oracle9*i* Application Server:

- Install and configure Oracle 9*i*FS in an Oracle9*i*AS 9.0.2 Oracle home.
- For best results, install and configure Oracle 9*i*FS in a multiple machine configuration in which the database runs on one machine and Oracle 9*i*FS runs on a separate machine. See "Multiple Tier Deployment" for details.
- In a production environment, Oracle Internet Directory should run on a separate database instance, preferably on a separate machine, especially if it's being used to support other Oracle applications in addition to Oracle 9*i*FS.
- To use Oracle Internet Directory for credential management for Oracle 9*i*FS, you must first install and configure Oracle Internet Directory. Oracle Internet Directory is part of the Oracle9*i*AS, Infrastructure installation type.
  - To configure the OidCredentialManager during Oracle 9*i*FS configuration, you will need to know `orcladmin` password and the service name of the Oracle Internet Directory.
  - You should decide in advance how you want to map the default Oracle 9*i*FS `system` and `guest` user accounts to Oracle Internet Directory. During the configuration process for the OidCredentialManager, you can either create new accounts for these users (if the Oracle Internet Directory does not already contain accounts with these names), or you can map these accounts to an Oracle Internet Directory account of your choice. The details are covered in Chapter 3, "Installation and Configuration".
- For this release of Oracle 9*i*FS, Oracle recommends using the Oracle9*i*AS Home page for administration. However, if you want to use Oracle Enterprise Manager console, the Oracle Enterprise Manager infrastructure (Oracle Enterprise Manager repository and

OMS) should run on a separate database instance. See "Oracle Enterprise Manager Configuration" in Appendix B.

See the *Oracle9i Application Server Installation Guide* and the *Oracle Enterprise Manager Configuration Guide* for additional recommendations and requirements.

Multiple Tier Deployment

Oracle 9*i*FS is designed to run as middle-tier application server software supported by Oracle9*i* Application Server. For best results, the tiers should be located on different physical machines: specifically, the database should run on one machine, the Oracle9*i* Application Server and Oracle 9*i*FS software should run on another machine. Here's a summary of the steps involved if you plan to use the Oracle9*i*AS, Infrastructure to create a new database instance for Oracle 9*i*FS.

On the Database Tier:

1. Install and configure Oracle9*i*AS, Infrastructure.
2. Configure Oracle Internet Directory if you plan to use it for authentication of Oracle 9*i*FS users (and likely other Oracle applications as well). (optional)
3. Create a new database instance for Oracle 9*i*FS. See "Creating a Database for Oracle 9iFS" in Appendix A for details.

On the Application Server Tier:

1. Install and configure Oracle9*i*AS (Type A, B, C, or D), Release 2.
   - If you use Oracle9*i*AS install type A, you will need to manually create the `tnsnames.ora` file for the database instance you want to use for Oracle 9*i*FS. See "Manual Creation of tnsnames.ora File" for details.
2. Into this same Oracle home where the Oracle9*i*AS (Type A, B, C, or D) is configured, install and configure Oracle 9*i*FS from CD. During configuration, select Create new repository, using the database instance on the Database Tier.

Single Machine Deployment

Oracle 9*i*FS can be installed on a single machine if the machine meets all hardware and software requirements. A single machine deployment is recommended ***for development purposes only***, or to evaluate the product in pre-production environment, because performance in this configuration can be less than satisfactory.

1. Install and configure Oracle9iAS Infrastructure, accepting all the defaults.

2. Configure Oracle Internet Directory if you want to use it for credential management with Oracle 9iFS (optional).
3. Create a new database instance for Oracle 9iFS using the Database Configuration Assistant that ships with Oracle9iAS Infrastructure.
4. Install Oracle 9iFS in the same Oracle home (Oracle directory) containing Oracle9iAS Infrastructure.
5. Using Oracle 9iFS Configuration Assistant, configure Oracle 9iFS following the "Configuring an Oracle 9iFS Domain" instructions in Chapter 3, "Installation and Configuration".

Upgrade Requirements and Process Overview

Oracle 9*i*FS 9.0.2 must be installed and configured in an Oracle9*i* Application Server 9.0.2 home, which means that upgrading from Oracle Internet File System 1.1.10 or from Oracle 9*i*FS 9.0.1 to Oracle 9*i*FS 9.0.2 in all cases requires implementing a multiple tier deployment. For a production environment, these tiers should comprise separate machines.

To use an existing Oracle database instance, see the "Oracle Database Requirements and Recommendations" on page 2-5 to ensure your instance meets all requirements.

Upgrading directly from releases prior to Oracle Internet File System 1.1.10 is ***not*** supported.

Upgrading from Oracle 9*i*FS 9.0.1 to Oracle 9*i*FS 9.0.2

To upgrade to Oracle 9*i*FS 9.0.2 from Oracle 9*i*FS 9.0.1, you must implement a multi-tier deployment model, one in which the Oracle 9*i*FS 9.0.2 software is installed and configured in an Oracle9*i* Application Server 9.0.2 home, either on the same machine or a different machine. Here's a summary of steps:

1. Create a new Oracle home on the machine running Oracle 9*i*FS 9.0.1, or, on a separate machine.
2. Into this Oracle home, install and configure Oracle9*i* Application Server, Release 2; this Oracle home is the required Oracle9*i* Application Server 9.0.2 home.
3. Into this same Oracle home, install and configure Oracle 9*i*FS 9.0.2. As you run the Configuration Assistant, reuse the schema that exists in the database.

Upgrading from Oracle Internet File System 1.1.10 to Oracle 9*i*FS 9.0.2

To upgrade to Oracle 9*i*FS 9.0.2 from an existing instance of Oracle Internet File System 1.1.10, you must first upgrade the database to at least release 9.0.1:

1. Upgrade to the Oracle9*i* Database Server by:
   a. Creating a new Oracle home for Oracle9*i*.
   b. Installing Oracle9*i* Database Server in this new Oracle home. During installation and configuration, install the Oracle Database Migration Assistant (ODMA).
   c. Migrating the Oracle 8.1.7 database instance to the Oracle 9.0.1 instance using ODMA.

   For more information on using the ODMA, see the *Oracle9i Administrator's Guide*. For more information about installing Oracle9*i*, see the *Oracle9i Installation Guide*.

With the database upgraded to release 9.0.1, you can then:

2. Upgrade the Oracle Internet File System instance to Oracle 9*i*FS.
3. Create a new Oracle home on either the same machine or a different machine (preferably, on a different machine).
4. Into this Oracle home, install and configure Oracle9*i* Application Server 9.0.2 (Infrastructure, or Application Server A., B., C., or D type).
5. Into this same Oracle home (the Oracle9*i*AS 9.0.2 Oracle home) install Oracle 9*i*FS 9.0.2 and configure using the "Upgrading an Oracle 9iFS Domain" instructions.

3

Installation and Configuration

This chapter guides you through the process of installing and configuring Oracle 9*i*FS. Topics include:

Overview

Installation and configuration of Oracle 9*i*FS starts from the Oracle Universal Installer, the graphical user interface wizard that copies all necessary software to the Oracle home on the target machine. (As an alternative to using the wizard for installation and configuration, you can use a scripted approach; see "Non-interactive Installation and Configuration" on page 3-22 for information.)

The Oracle 9*i*FS Configuration tool launches automatically at the end of the Oracle Universal Installer process and guides you through the process of identifying the Oracle database to be used for the Oracle Internet File System schema; selecting the type of authentication to use (native Oracle 9*i*FS credential manager or Oracle Internet Directory for credential management); and various other configuration tasks. The specific configuration tasks vary, depending on the type of deployment (new Oracle 9*i*FS domain vs. additional Oracle 9*i*FS nodes, for example); the information in this chapter is organized accordingly.

Before installing and configuring Oracle 9*i*FS:

- Shut down all extraneous applications, such as Oracle Management Server, to avoid resource contention.
- Make sure the Oracle9*i* Database Server and listener process are running on the database server machine. For a newly installed database instance, both of these services are typically started at the end of the installation process, but you can start them from the shell prompt as follows:

```
$ lsnrctl start
$ sqlplus /nolog
SQL>connect sys/<password> as sysdba
Connected.
SQL> startup

ORACLE instance started.
Total System Global Area  185369592 bytes
Fixed Size                   279544 bytes
Variable Size             117440512 bytes
Database Buffers           67108864 bytes
Redo Buffers                 540672 bytes
Database mounted.
Database opened.
SQL> exit
```

Note: Oracle 9*i*FS requires an Oracle 9.0.2 home, which means you must install and configure Oracle9*i* Application Server, Release 2 in an Oracle home separate from that of the database. The Oracle home can be on the same machine (resources allowing), or on a different machine.

Installing Software Components

These instructions presume that you have completed all necessary pre-installation tasks appropriate for the deployment. See Chapter 2, "Pre-installation" for details.

1. Logon to the UNIX machine using the account name that owns the Oracle database (typically, the user account is `oracle`, and is also a member of the `dba` group) and mount the Oracle CD or CD image containing the Oracle 9*i*FS software.
   - If you are upgrading an existing Oracle Internet File System instance, you must stop the protocol servers (and the domain, if relevant for your release).

Release	Command
Oracle Internet File System 1.x	`$ORACLE_HOME/ifs1.1/bin/ifsstop`
Oracle 9*i*FS 9.0.1 (and higher)	`$ORACLE_HOME/9ifs/bin/ifsstopdomain` (Or, use the Oracle Enterprise Manager Console to stop the domain and all nodes.)

2. Launch the Oracle Universal Installer from the CD, located in:

   `<CD-ROM>/install/<OS>/runInstaller`

   where <OS> is one of the following:

Platform	<OS>
AIX Based Systems	`aix`
HP-UX	hpunix
Linux Intel	linux
Compaq Tru64	decunix
Solaris	solaris

3. Read the Welcome page, then click Next. The File Locations page displays.
4. On the File Locations page, accept or select the location of the `products.jar` file from the product CD in the Source field. In the Destination field, enter the full path of the directory in which to install the Oracle 9*i*FS software.
   - ***Oracle 9iFS must be installed in the Oracle9i Application Server, Release 2 home***. Make sure to select the file location carefully; once installed, the Oracle 9*i*FS software cannot be moved without deinstalling and reinstalling.
5. Click Next to continue. The Summary page displays a list of the selected components. Oracle Internet File System should display among the listed items.
6. On the Summary page, click Install to begin installation. A progress indicator displays to monitor the installation as the files that comprise the software are copied to the appropriate directories on the server.

When the Oracle Universal Installer is finished copying files to the Oracle home directory, the Oracle Internet File System Configuration Assistant automatically starts.

Note: If you are using Oracle9*i* Application Server, A. J2EE and Web Cache, and you did not create a `tnsnames.ora` file before starting the installation process, you must modify the file now. Open the `$ORACLE_HOME/network/admin/tnsnames.ora` file, and copy and paste the text below into the file, replacing `myIfsInstance`, `myIfsMachineName`, and `myIfsService.myCompany.com` with the correct information for the database service that you're using for Oracle 9*i*FS:

```
myIfsInstance = (DESCRIPTION = (ADDRESS_LIST =
(ADDRESS = (PROTOCOL = TCP)(HOST =
myIfsMachineName)(PORT = 1521)))(CONNECT_DATA =
(SERVICE_NAME = myIfsService.myCompany.com)))
```

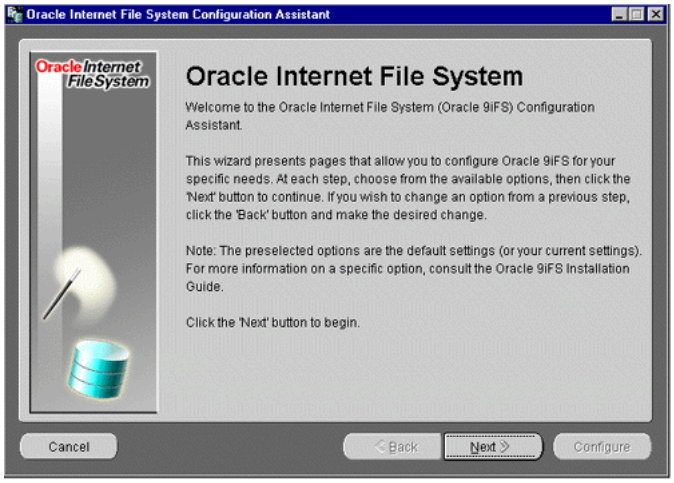
Oracle 9*i*FS Server Configurations

The Oracle Internet File System Configuration Assistant is a wizard that enables you to specify Oracle 9*i*FS configuration parameters. The Configuration Assistant is launched automatically by the Oracle Universal Installer; however, you can launch the configuration tool anytime (to reconfigure Oracle 9*i*FS by executing the `ifsconfig` script (`ifsconfig`), located in the following directory:

```
$ORACLE_HOME/9ifs/bin
```

The Configuration Assistant guides you through the range of possible deployment scenarios listed in Table 3–1. The Oracle Internet File System Configuration Assistant always begins with the Welcome page shown in Figure 3–1.

Figure 3–1 Oracle 9iFS Configuration Assistant



Make your choices on each screen and click the Next button to continue. (You can click the Cancel button to stop the wizard and configure at a later time by executing `ifsconfig` from the command line.) Figure 3–1 summarizes the types configurations you can perform:

Table 3–1 Configuration Assistant Configuration Options

Configuration Type	Usage Note
Configuring an Oracle 9iFS Domain	Once per domain only. Creates the Oracle 9*i*FS schema in the database and performs other configuration tasks.
Configuring Oracle 9iFS Nodes	Run on a middle-tier machine. Requires an existing Oracle 9*i*FS database schema.
Upgrading an Oracle 9iFS Domain	To upgrade an existing Oracle Internet File System instance to the Oracle 9*i*FS release. Requires an Oracle9*i* database with an existing Oracle 9*i*FS release 9.0.1 or Internet File System release 1.1.10 or 1.1.9.

To monitor the Oracle 9*i*FS Configuration Assistant as it progresses, you can view the logfile as it's being written to the following file:

```
$ORACLE_HOME/9ifs/log/IfsConfigOut.log
```

Configuring an Oracle 9*i*FS Domain

These instructions guide you through the process of configuring the Oracle 9*i*FS domain controller machine, which is typically the first machine in the domain that you're configuring. You must install and configure Oracle 9*i*FS 9.0.2 into an Oracle9*i*AS 9.0.2 Oracle home.

The instructions begin from the Oracle 9*i*FS Configuration Assistant Welcome page.

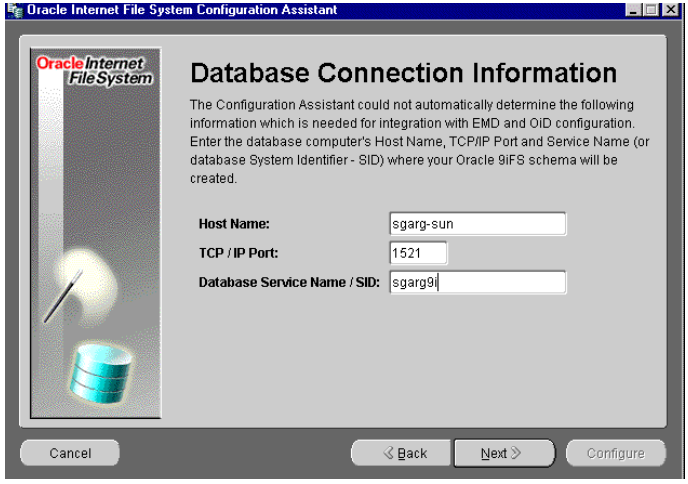
1. Read the Welcome page, then click the Next button to begin the configuration process. The Select Oracle Database page displays, enabling you to choose between a Complete 9iFS Configuration or a 9iFS Administration Configuration. The Select Oracle Database page also provides fields for database login information.
2. On the Select Oracle Database page, select Complete Oracle 9*i*FS Configuration and enter the Net service name and SYS password for the Oracle9*i* Database Server instance in which the new Oracle 9*i*FS schema for the Oracle 9*i*FS domain should be created.
   - The **Net Service Name** is the name for the Oracle database that contains the Oracle 9iFS instance. Use the service name even if you're installing on the same machine as the database. (See Item G in the tables in Appendix C.) If you configure subsequent Oracle 9*i*FS nodes later, as additional middle-tier servers for this Oracle 9*i*FS domain, you ***must*** use the same service name as the one on this first machine in the domain.
   - The **SYS password** is the password for SYS schema in the Oracle database. (See Item H in the tables in Appendix C.)
3. Click the Next button to continue. A message box displays progress as the Oracle 9*i*FS Configuration Assistant verifies the database connection and several requirements, including the CLASSPATH setting, the connection to the Oracle database, initialization parameters, and Oracle JServer installation.

   If an error occurs, you must correct the problem before configuration can continue. For example, if JServer is not installed in the database, you will see an error message related to the DBMS_JAVA package. (See Chapter 2, "Pre-installation" for information about preliminary setup requirements.)

   If an "insufficient privileges" error message displays point, it is likely due to a missing password file on the database server. The password file must exist for this connection between configuration assistant to be made.

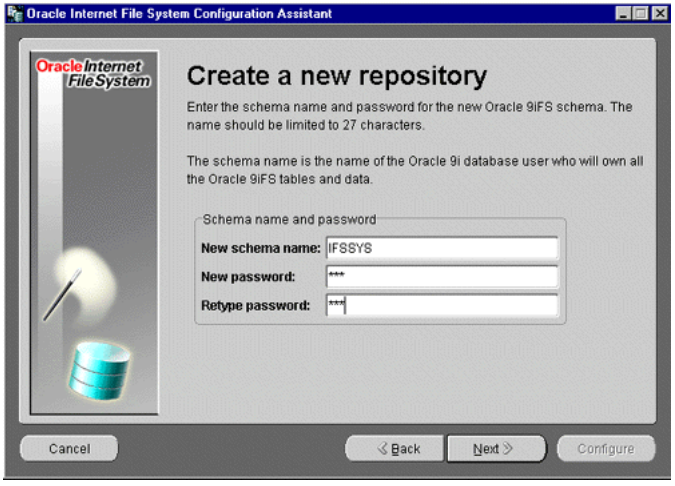
When the verification process completes, the Database Connection Information page displays.

Figure 3–2 Database Connection Information



4. Enter the hostname, port address, and service name for the database instance in which to create the Oracle 9*i*FS schema objects.
5. Click Next to continue. The Create New Repository page displays.

Figure 3–3 Create New Repository



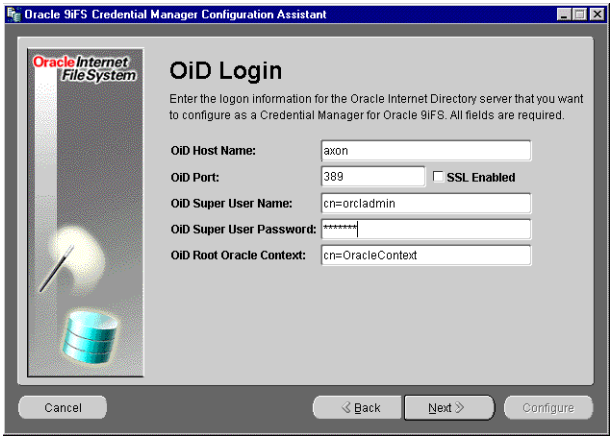
6. On the Create New Repository page, enter a name for the Oracle 9*i*FS schema (the default name is `ifssys`) and the password (in both the New Password and Re-type Password fields).
   - ***Never*** create a new schema with the same name as an existing Oracle 9*i*FS schema unless you want to drop the existing Oracle 9*i*FS schema and all its contents, including credential managers associated with the services. You cannot undo this process.
   - If you enter a name for the schema (rather than accept the default, `ifssys`), note that schema names must begin with an alphabetic character from your database character set; cannot contain quotation marks; and cannot be an Oracle reserved word. Schema names are not case sensitive. See the *Oracle9i SQL Reference* for more information about schema names.
7. Click Next. In a moment, the Create New Credential Manager page displays.

Figure 3–4 Create New Credential Manager Page

8. Select the Credential Manager Type, either Internet File System or Oracle Internet Directory, from the drop-down list.
   - If you select Oracle Internet File System, there's nothing else to configure, and you can skip to Step 10. The name of this credential manager is "Ifs."

- If you select Oracle Internet Directory, you must already have an Oracle Internet Directory instance configured and running. Click Next to continue; the OiD Login page displays.

Figure 3–5 OiD Login

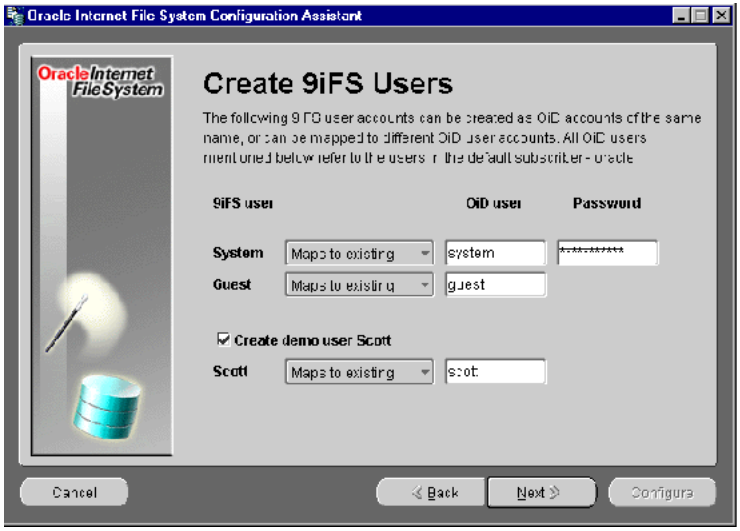


Enter the login information for the Oracle Internet Directory instance that you want to use for credential management.

- Enter the hostname for the machine running Oracle Internet Directory.
- The default port number is `389` for LDAP; you can usually leave this alone. If you have SSL enabled on Oracle Internet Directory, select SSL Enabled and change the port number. The default port number for SSL-enabled mode is 636.
- The default Oracle Internet Directory super user name/password is `cn=orcladmin/welcome`. Change if appropriate.
- The default OiD root Oracle context is set to `cn=OracleContext`. You can leave this as is. The concept of a "root context" is specific to LDAP directory services.

9. Click Next to continue. The Create 9iFS Users page displays. On the Create 9iFS Users page you can create the two default Oracle 9*i*FS users are created. These are `system` and `guest`. Optionally, you can also create an Oracle 9*i*FS user account for demo purposes named `scott`.

Figure 3–6 Create 9iFS Users



On the Create 9iFS Users page, you can map existing Oracle Internet Directory users to the Oracle 9*i*FS `system` and `guest` users that will be created at this point. The Oid User must be a member of the default OiD Subscriber, the name of which is displayed on this page for confirmation (as shown in Figure 3–6, the subscriber is *oracle*).

- If you have an existing account in Oracle Internet Directory that you want to use for the Oracle 9*i*FS `system` user, select "Maps to existing" from the drop-down list and enter account name and password. (As shown in Figure 3–6, an account named "`system`" that already exists in Oracle Internet Directory would be mapped to the Oracle 9*i*FS `system` account.
- If you don't have an account in Oracle Internet Directory to map to, select "create as new" from the drop-down list. When you do this, the corresponding field under "OiD User" is grayed out, and the name "system" displays. This account will be created in Oracle Internet Directory with the default password of `manager9ifs`. Click Next to continue and the Set Oracle 9*i*FS Options displays.

  If you attempt to create a new account but one already exists in Oracle Internet Directory, an error message displays.

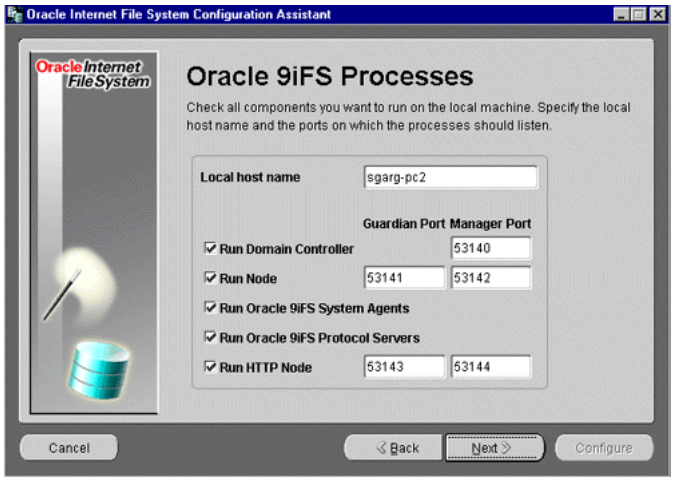
10. Click Next to continue. The OidCredentialManager is configured using the settings selected in steps 8 and 9. The Set Oracle 9*i*FS Options displays.

Be sure to set Oracle 9*i*FS-specific passwords using Oracle 9*i*FS Manager (User Manager tab) as detailed in Chapter 4, "Post-configuration" for any users who will need access to AFP, FTP, CUP, and IMAP protocol servers. See "Oracle 9iFS Credential Manager Configuration Assistant" on page 1-9 in Chapter 1, "Configuration Concepts" for additional information.

11. On the Set Oracle 9*i*FS Options page, you can choose the default tablespace or custom tablespaces. If you choose custom tablespaces, the tablespaces must already exist: the Oracle 9*i*FS Configuration Assistant does not create them. See Chapter 2, "Pre-installation" for additional information about creating custom tablespaces.

- If you have *not* created custom tablespaces for Oracle 9*i*FS content, select the default ("Use USERS tablespace for ALL Oracle 9*i*FS storage") and click Next. A message box displays as Oracle Text verification is performed, and in a moment, the Oracle 9*i*FS Processes page displays (see Figure 3–7).
- If you have created tablespaces specifically for Oracle 9*i*FS content, select "Choose custom tablespace" and click Next. A message box displays as Oracle Text verification is performed, and in a moment, the Oracle 9*i*FS Tablespaces page displays, enabling you to select different tablespaces for various types of content. On the Oracle 9*i*FS tablespace page, choose the tablespaces you want to use for each type of content (see the "Custom Tablespace Definitions for Oracle 9iFS" worksheet in Appendix A, "Creating a Database for Oracle 9iFS" for descriptions) from the drop-down lists. Click Next to continue. The Oracle 9*i*FS Processes page displays.

Figure 3–7 Oracle 9iFS Processes Page



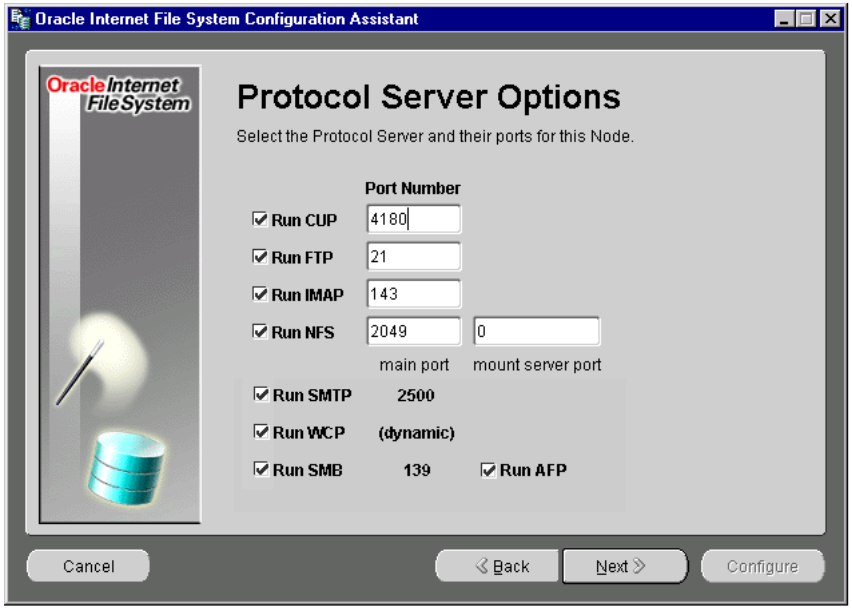
The Oracle 9*i*FS Processes page lists the Oracle 9*i*FS processes (such as the node, domain, and protocol servers discussed in Chapter 1, "Configuration Concepts") and default port addresses that will be used for these processes on the machine.

12. Select Run Domain Controller and all other processes that you want to configure for this domain. By default, all processes are selected on this page. Accept the defaults if you want to run everything on the same host.

- *Local host name* is the name of the machine. Change only if the machine contains multiple network interface cards (NICs) and you want Oracle 9iFS to be associated with a hostname other than the one displayed.
- *Run Domain Controller* configures the Oracle 9iFS Domain Controller process.
- *Run Node* configures an Oracle 9iFS node to run on this machine.
- *Run Oracle 9iFS System Agents* configures all the Oracle 9iFS system agents to run on this machine. Agents run on only one node in the domain.
- *Run Oracle 9iFS Protocol Servers* configures the Oracle 9iFS protocol servers to run on this machine.
- *Run HTTP Node* configures an HTTP node to run the Oracle 9iFS DAV server for HTTP and WebDAV access on this machine.

13. Click Next to continue. The Protocol Server Options page displays.

Figure 3–8 Protocol Server Options Page



14. Select the specific protocol servers you want to configure for the domain. These settings will be stored in a Server Configuration object for use by all middle-tier machines that use the Oracle 9*i*FS schema. To change the configuration on any single middle-tier machine, you must use the Oracle 9*i*FS Manager.

- To run both the native UNIX and the Oracle 9*i*FS versions of a specific protocol server listed on this machine, you must change the port numbers to avoid conflicts.
- If you change the main port for the NFS protocol server, you must also change the mount server port to a number other than 0.

Note: If you want to provide Oracle 9*i*FS NFS support to NFS clients running on AIX, HP-UX, or Compaq Tru64, you must use port 2049 (the default) for Oracle 9*i*FS and disable the native UNIX NFS protocol server, because AIX, HP-UX, and Compaq Tru64 NFS clients do not currently support the public file handle lookup protocol. Linux and Solaris NFS clients do not have this limitation, so you can use both UNIX NFS and Oracle 9*i*FS NFS protocol servers for these clients.

- If you do not want run the native UNIX implementations of the services, you can accept the default port numbers.

15. When you have finished specifying the Oracle 9*i*FS processes and protocol server options, click Next. The Document Content page displays.

16. On the Document Content page, select the default character set and indexing language to use when storing documents in Oracle 9*i*FS.

    The document character set defaults are used by client applications that do not specify a language or character set for documents being transferred to Oracle 9*i*FS. The default character set is also used by non-Unicode enabled protocols, such as FTP and WebDAV, to determine the character set that these protocol servers should use.

    Oracle recommends setting the character set to Unicode UTF8 to enable full multi-language functionality. Specifying non-UTF8 character sets may limit Oracle 9*i*FS functionality, with respect to accessing and displaying content in multiple languages.

    Note: Although Oracle 9*i*FS supports multi-byte character sets, when you create user accounts for Oracle 9*i*FS, you should create the names using single-byte characters only. Users whose account names are created with multi-byte characters are unable to access content through many of the Oracle 9*i*FS protocol servers. This is a known issue that will be corrected in a future release.

    Here are some recommended multi-byte character sets for supporting a single language only:

Table 3–2 Multi-byte Language Character Sets

Multi-byte Language	Character Set
Chinese	UTF8, ZHS16CGB231280, ZHS16GBK, ZHT32EUC, ZHT16BIG5, ZHT32TRIS, AL24UTFFSS
Japanese	UTF8, JA16SJIS, JA16EUC
Korean	UTF8, KO16KSC5601

If you need to support single-byte language functionality only, you can use UTF8 or any of the single-byte character sets supported by the database. For more information, see the section on "Multi_Lexer" in the *Oracle9i Oracle Text Reference Guide*.

17. Click Next to continue. The Oracle 9*i*FS Configuration wizard now has all the information it needs to create a new Oracle 9*i*FS schema and configure the node and other processes. Click Next to continue; the Begin Oracle 9*i*FS Configuration page displays.

18. Note the name and location of the log files displayed in the Begin Oracle 9*i*FS Configuration page and then click the Configure button to execute the configuration process using all the information entered via the wizard.

    Once you have started the configuration process, a progress window appears. If an error occurs, check the following log file for more information:

    ```
    $ORACLE_HOME/9ifs/log/IfsConfigOut.log
    ```

    When the process completes, a message displays, telling you that the configuration was successful.

19. Click OK to close the message. If the Oracle Internet File System Configuration Assistant was launched by the Oracle Universal Installer, the OUI End Installation page displays.

20. On the Oracle Universal Installer End Installation page, click the Exit button to quit the Oracle Universal Installer. Click Yes to confirm that you want to exit the Oracle Universal Installer.

At the end of the configuration process, several scripts execute automatically in order to integrate Oracle 9*i*FS and the Oracle Enterprise Manager Web site. However, you must also manually execute several other scripts, depending upon the specifics of your deployment. See Chapter 4, "Post-configuration" for instructions about how to make Oracle 9*i*FS operational.

Configuring Oracle 9*i*FS Nodes

These instructions are for configuring an additional middle-tier machine (referrred to in the steps below as host B) for an existing Oracle 9*i*FS domain (referred to as host A). Be sure to complete the Pre-installation tasks in Chapter 2, specifically:

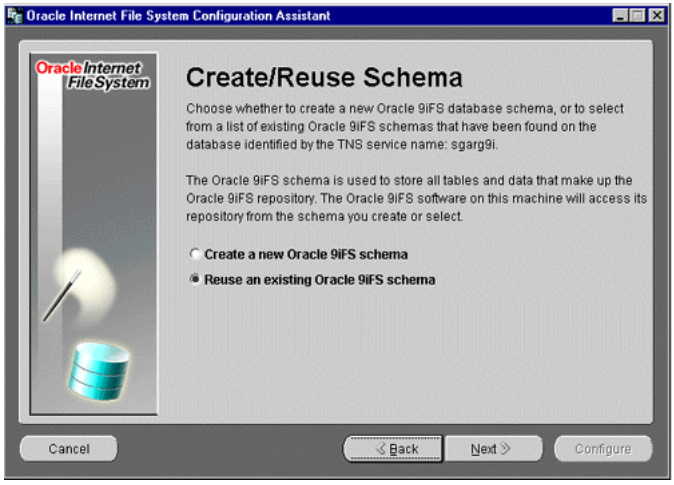
- Create an Oracle home and install and configure Oracle9*i*AS 9.0.2 in that Oracle home on host B;
- Install the Oracle 9*i*FS in the same Oracle home on host B.

At the end of the installation process (within the Oracle Universal Installer), the Oracle Internet File System Configuration Assistant launches. These instructions begin from the Oracle 9*i*FS Configuration Assistant Welcome page.

1. Read the Welcome page, then click the Next button to begin the configuration process. The Select Oracle Database page displays.
2. On the Select Oracle Database page, select Complete Oracle 9*i*FS Configuration and enter the service name and SYS password for the database that contains the Oracle 9*i*FS schema.
3. Click the Next button to continue. A message box displays progress as the Oracle 9*i*FS Configuration Assistant verifies the database connection and several requirements, including the CLASSPATH setting, the connection to the Oracle database, initialization parameters, and Oracle JServer installation.

   When the verification process completes, the Database Connection Information page displays.
4. Enter the hostname, port address, and service name for the database instance containing the Oracle 9*i*FS schema (located on host A). Click Next to continue. The Create/Reuse Schema page displays.

Figure 3–9 Create/Reuse Schema



If the Create/Reuse Schema page does not display, or if the Create New Repository schema page displays instead, the configuration tool did not find an existing Oracle 9*i*FS schema.

- ***Do not continue*** until you resolve the problem. For example, verify that the service name you entered is the same as the service name that was used to configure the initial Oracle 9*i*FS domain (schema), and that you have entered the correct SYS password for the database.
- ***Never*** create a new schema with the same name as an existing Oracle 9*i*FS schema unless you want to drop the existing Oracle 9*i*FS schema, and all its contents. This cannot be undone.

5. Select Reuse an existing Oracle 9*i*FS schema and click Next to continue. The Select Oracle 9*i*FS Schema page displays.
6. Select the name for the Oracle 9*i*FS schema from the drop-down list. If you selected the default at initial configuration, the name is IFSSYS. Enter the password, then click Next to continue. The Document Content page displays.
7. On the Document Content page, select the default character set and indexing that this Oracle 9*i*FS server should use for data sent to the database. The document character set defaults are used by client applications that do not specify a language or character set for documents being transferred to Oracle 9*i*FS. The default character set is also used by non-Unicode enabled protocols, such as FTP and WebDAV, to determine the character set that these protocol servers should use.

   Oracle recommends setting the character set to UTF8 to enable full multi-language functionality. After selecting language and character set, click Next to continue. The Begin Oracle 9*i*FS Configuration page displays.
8. Note the name and location of the log files displayed in the Begin Oracle 9*i*FS Configuration page and then click the Configure button to execute the configuration process using all the information entered via the wizard.

The nodes will be configured (in terms of protocol servers, agents, port numbers, and other such details) according to the information contained in the Oracle 9*i*FS schema for the domain. When the configuration process completes, an Oracle 9*i*FS Configuration Complete page displays. You can close the display and exit the Oracle Universal Installer (assuming you launched the Oracle Internet File System Configuration Assistant from within Oracle Universal Installer.)

See Chapter 4, "Post-configuration" for information about additional steps required to make Oracle 9*i*FS operational. Once the system is operational, you can verify that the Oracle 9*i*FS and HTTP node for host B were added to the Oracle 9*i*FS schema by using Oracle 9*i*FS Manager and examining the node configuration. You must use the Oracle 9*i*FS Manager to

configure precisely which protocol servers will run on which node. See the *Oracle Internet File System Setup and Administration Guide* for complete information.

Upgrading an Oracle 9*i*FS Domain

These instructions presume you have completed all necessary tasks detailed in Chapter 2. The instructions begin from the Oracle 9*i*FS Configuration Assistant Welcome page.

1. Read the Welcome page, then click the Next button to begin the configuration process. The Select Oracle Database page displays.
2. On the Select Oracle Database page, choose the "Complete 9iFS Configuration."

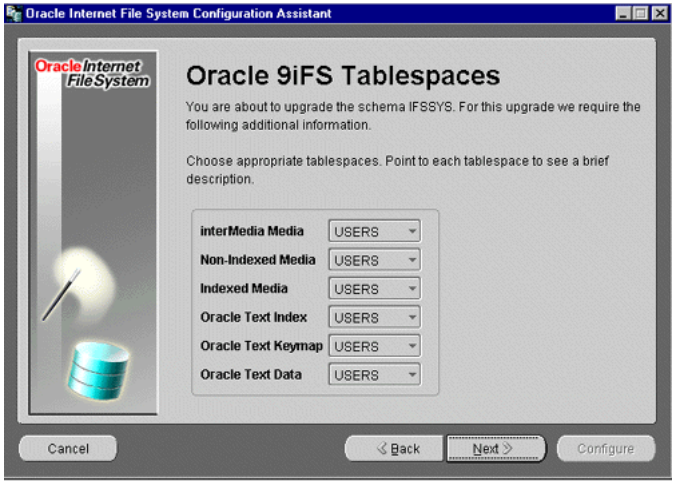
   Enter the following information:

Table 3–3 Oracle Database Login Parameters

Parameter	Description
Net Service Name	Service name associated with the database server you want to use for Oracle 9*i*FS.
SYS Password	Password for the SYS database schema.

3. Click the Next button to verify the database connection. A dialog box displays the progress as several validations are performed by the configuration tool. If an error occurs, you will not be able to continue until you correct the problem.
4. On the Create/Reuse Schema page, select "Reuse an existing Oracle 9*i*FS schema" and click Next.
5. On the Select Oracle 9*i*FS Schema page, select the existing schema you want to upgrade and enter its password. Then click Next to continue; the Oracle 9*i*FS Tablespaces page displays.

Figure 3–10 Oracle 9iFS Tablespaces Page



6. On the Oracle 9*i*FS Tablespaces page, select the tablespaces for the new content types supported in this release. Only the required tablespaces display.

7. Click Next to continue. The configuration tool searches for the presence of OracleText. If Oracle Text is installed but has not been enabled, the Enable Oracle Text page displays, giving you the opportunity to enable it at this point during the upgrade process. (If Oracle Text is not installed or has already enabled, the Enable Oracle Text page does not display. Continue with step 8.) Note that once you enable Oracle Text for an Oracle 9*i*FS domain, it cannot be disabled.

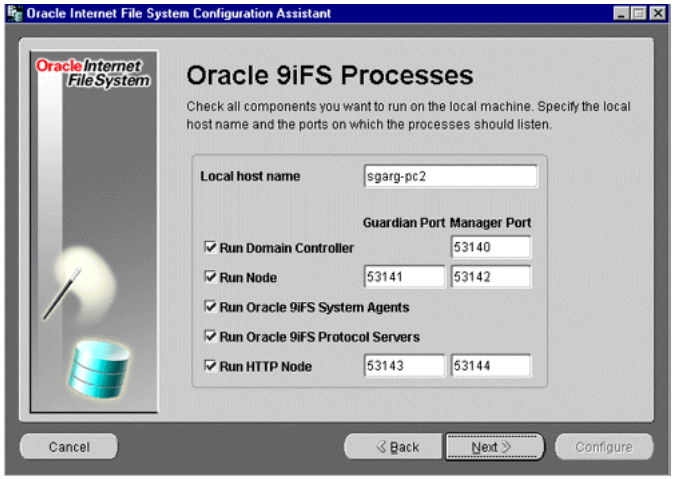
   - When upgrading a non-Oracle-Text-enabled Oracle 9*i*FS domain to an Oracle Text-enabled version, the index is created but not populated, during the upgrade process. See "Re-populate the Oracle Text Index" in Chapter 4, "Post-configuration" for information about populating the index.

     – To enable Oracle Text for your Oracle 9*i*FS domain, select the Yes radio button.

     – Select No if you don't want to enable Oracle Text for the Oracle 9*i*FS domain.

8. Click Next to continue. If you are upgrading from Oracle Internet File System release 1.x, the Oracle 9*i*FS Processes page displays.

Figure 3–11 Oracle 9iFS Processes Page

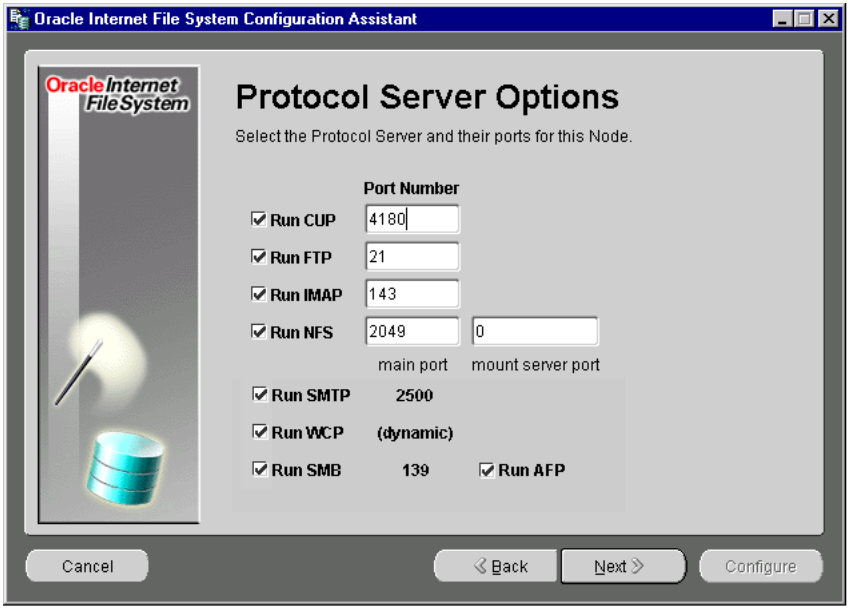


By default, all processes are selected on this page, and it's best to simply accept the defaults:

- *Local host name* is the name of the machine. Change only if the machine contains multiple network interface cards (NICs) and you want Oracle 9iFS to be associated with a hostname other than the one displayed.
- *Run Domain Controller* creates the Oracle 9iFS Domain Controller process.
- *Run Node* creates an Oracle 9iFS node to run on this machine.
- *Run Oracle 9iFS System Agents* configures all the Oracle 9iFS system agents to run on this machine. Agents run on only one node in the domain.
- *Run Oracle 9iFS Protocol Servers* configures the Oracle 9iFS protocol servers to run on this machine.
- *Run HTTP Node* configures an HTTP node to run the Oracle 9iFS DAV server for HTTP and WebDAV access on this machine.

9. Click Next to continue. The Protocol Server Options page displays.

Figure 3–12 Protocol Server Options Page



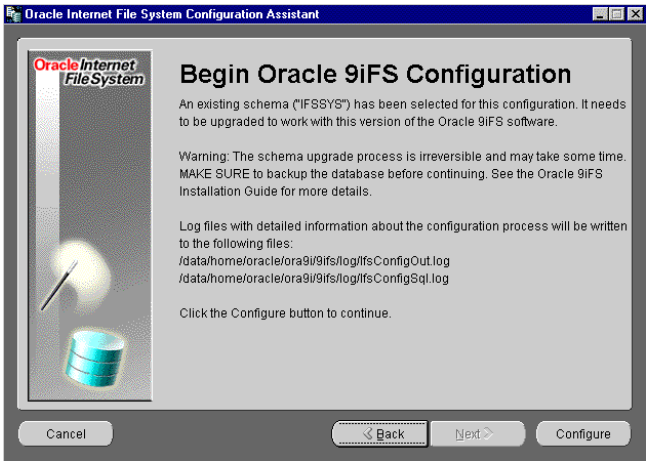
You can retain the default port numbers or change them. If you change the main port for the NFS protocol server, you must also change the mount server point.

Note: If you want to provide Oracle 9*i*FS NFS support to NFS clients running on AIX, HP-UX, or Compaq Tru64, you must use port 2049 (the default) for Oracle 9*i*FS and disable the native UNIX NFS protocol server, because AIX, HP-UX, and Compaq Tru64 NFS clients do not currently support the public file handle lookup protocol. Linux and Solaris NFS clients do not have this limitation, so you can use both UNIX NFS and Oracle 9*i*FS NFS protocol servers for these clients.

---

10. On the Document Content page, select the default character set and indexing language to use when storing documents in Oracle 9*i*FS. See Table 3–2 for additional information.
11. Click Next to continue. The Begin Oracle 9*i*FS Configuration page displays.

Figure 3–13 Begin Oracle 9iFS Configuration page for Upgrades



12. On the Begin Oracle 9*i*FS Configuration page, click the Configure button to begin the Oracle 9*i*FS configuration process.

    Once you have started the configuration process, a progress window appears. If an error occurs, check the following log file for more information:

    ```
    $ORACLE_HOME/9ifs/log/IfsConfigOut.log
    ```

    When the configuration process completes, an Oracle 9*i*FS Configuration Complete page displays.

13. Click OK to close the page and exit the Configuration Assistant.

See Chapter 4, "Post-configuration" for instructions about how to make Oracle 9*i*FS operational. Be sure to also perform the "Additional Post-configuration Tasks for Upgrades Only" on page 4-11.

Non-interactive Installation and Configuration

As an alternative to using the graphical tools described in Oracle 9iFS Server Configurations, you can pass the name of a response file (.rsp) to the `runInstaller` script as a parameter. If your response file contains responses for all of the installer prompts, you can use the `-silent` parameter to avoid seeing any dialogs or windows at all. Do this only if you have verified that the response file meets your specific deployment needs or if you have modified it to do so.

Table 3–4 Response File Parameters

Parameter	Description	Example
ORACLE_HOME=	Enter the correct Oracle home name for your machine.	ORACLE_HOME=data/ Ora9i
s_IfsConfigRspFile=	Enter the IfsConfig Response filename.	s_IfsConfigRspFile= ${ORACLE_ HOME}/9ifs/settings/silentconfig.properties
b_configureIFS=	Set to FALSE to install only (not configure). If you set b_ configureIFS=TRUE, be sure you've already modified the IFS response file as required for your particular configuration.	b_configureIFS=FALSE

The Oracle Universal Installer response file, which copies the base software, libraries, and various scripts to the machine for further configuration, is located on the CD in the `stage/Response/` directory.

After making any necessary changes to the file, you can install the software by using this command:

```
cd ${STAGE_LOCATION}/install/<OS>
./runInstaller -responseFile oracle.ifs.Complete.rsp -silent
```

where <OS> is one of the following:

Platform	<OS>
AIX Based Systems	`aix`
HP-UX	hpunix
Linux Intel	linux
Compaq Tru64	decunix
Solaris	solaris

You can configure the Oracle 9*i*FS domain using this same approach, by passing a response file (containing all the configuration settings) to the Configuration Assistant as a parameter at the command line. The response file is located in the $ORACLE_HOME/9ifs/settings directory after installing to the $ORACLE_HOME on the server using the OUI or the script:

```
$ORACLE_HOME/9ifs/settings/silentconfig.properties
```

The file itself contains instruction about how to modify and use it. Modify the response file to meet your specific needs. For example, change the default schema name to something other than IFSSYS, or disable the Run Domain Controller if you're installing and configuring an additional middle-tier machine to work with an existing instance.

1. Open the silentconfig.properties file in a text editor.
2. Set ifs.config.silent=TRUE, and then uncomment this line in the file.
3. Make any other changes to the settings in the file you need, and close the file when you're finished.
4. To run the Configuration Assistant using your modified response file:

```
cd ${ORACLE_HOME}/9ifs/bin
./ifsconfig -file $ORACLE_HOME/9ifs/settings/silentconfig.properties -silent
```

Oracle 9*i*FS will be configured on the machine to the specifications defined in the response file.

Continue with the required post-installation tasks for your configuration as detailed in Chapter 4, "Post-configuration".

4

Post-configuration

The instructions in this chapter presume that you have completed all pre-installation and configuration tasks described in previous chapters. Topics in this chapter include:

- Required Post-Configuration Tasks
- Optional Post-configuration Tasks
- Additional Post-configuration Tasks for Upgrades Only

Required Post-Configuration Tasks

The instructions presume that the Oracle 9*i*FS Configuration Assistant has successfully completed and that the Oracle 9*i*FS Configuration Complete page is displayed. You must perform these tasks to complete the Oracle 9*i*FS configuration and start the domain, and to ensure that your system is operational and secure.

- Start All Necessary Processes
- Create Private (Oracle 9iFS-specific) Passwords
- Change Default Passwords
- Validate Basic Operations

Start All Necessary Processes

These instructions presume that Oracle9*i* Application Server and Oracle 9*i*FS have been installed and configured on a machine separate from the Oracle database, and that the database and listener are running.

Oracle 9*i*FS uses the Oracle9*i*AS Containers for J2EE (OC4J) component of Oracle9*i*AS to support the DAV Servlet and Portlet Servlet, both of which must be deployed to OC4J. Deploying the servlets is a one-time step, the first step in this post-installation process:

1. Deploy the Oracle 9*i*FS servlets to OC4J by running the `ifsdeployear` shell script. The script contains all the necessary information to deploy all Oracle 9*i*FS servlets.

   ```
   $ORACLE_HOME/9ifs/bin/ifsdeployear
   ```

2. Start the Oracle Enterprise Manager Web site[1] on the Oracle 9*i*FS:

   ```
   $ORACLE_HOME/bin/emctl start
   ```

   If your Oracle 9*i*FS domain comprises multiple physical machines, you must run this `emctl start` command on each machine.

3. From a Web browser on the server machine or from another machine on the network, access the URL to connect to the Oracle Enterprise Manager Web site on the machine where the Oracle 9*i*FS domain controller is configured:

   ```
   http://<hostname>:1810
   ```

   A *Username and Password Required* or *Enter Network Password* prompt displays. You must enter the Oracle9*i*AS logon and password before you can proceed.

4. Enter `ias_admin` as the user name with the appropriate `<password>`, where <*password* >is the password for the Oracle9*i*AS instance (items I and J from the tables in Appendix C). The Oracle9*i*AS Home page (the name simply shows as *Enterprise Manager*) displays. You see a Targets tab in the upper-right area of the page.

   The web page displays a list of all Oracle9*i* Application Server instances (these are the Targets) running on the specified host.

5. Click on the name of the Oracle9*i*AS instance that is hosting the Oracle 9*i*FS software. You may be prompted for the Oracle9*i*AS instance user name and password again. Enter the user name (`ias_admin`/<password) to continue.

   A page displays all the Oracle9*i*AS system components running on the instance. This list should include the Oracle 9*i*FS domain controller and node processes (as shown below, using the default port numbers. If you changed port numbers during the configuration process, the port numbers you chose will display instead of the defaults):

   ```
   <hostname>:53140 Internet File System
   <hostname>:53141 Internet File System Node
   ```

   If your Oracle 9*i*FS domain comprises multiple nodes distributed across multiple physical machines, your list may contain additional hostnames and port numbers.

[1] Some Oracle documentation may refer to the Oracle Enterprise Manager Web site as the "Enterprise Manager Daemon" (EMD), or the Oracle Enterprise Manager.

Note that although you see Start and Stop buttons on this page, you cannot control Oracle 9*i*FS from this page. You must follow the next few steps.

6. Click on the <hostname:53141> link (or other appropriate port number for your Oracle 9*i*FS node), and on the subsequent page, click the Launch button. A page prompting you for the host credential to launch the Oracle 9*i*FS node displays.
   - Enter the OS (operating system) account name and password for the machine. On UNIX systems, this is typically the `root` user name and password.
   - Click the OK button to continue. In a few seconds, the Launch button dims and the status should display as *Up*.
   - Click on the link in the upper-left area of the page to return to the previous page.

   If your domain comprises multiple nodes across multiple machines, repeat step 6 for each node. You must enter the OS account name and password on each machine running a node that you want to start.
7. From the Oracle9*i*AS system components page, click on the <hostname:53140> link to display the top-level management page for Oracle 9*i*FS domain. The Oracle 9*i*FS top-level management page displays. You'll see *Internet File System: <hostname>:53140* displayed in the upper-left area of the display.
8. Click the Launch Domain Controller button. To launch the domain controller, use the `oracle` name and password.

The Oracle 9*i*FS domain starts. See the *Oracle Internet File System Setup and Administration Guide* for more information about starting, stopping, and otherwise controlling and managing Oracle 9*i*FS.

Create Private (Oracle 9*i*FS-specific) Passwords

If you configured an OidCredentialManager for this Oracle 9*i*FS domain (rather than the native Oracle Internet File System credential manager), you must create Oracle 9*i*FS-specific passwords to enable users to access Oracle 9*i*FS using AFP, CUP[2], FTP, or IMAP, you must create an Oracle 9*i*FS-specific password for such users.

Note that this requirement also applies to Oracle 9*i*FS users `system`, `scott,` and `guest`—by default, the Oracle 9*i*FS-specific password for these three accounts is null, so protocols such as FTP and CUP won't allow access (if you're using Oracle Internet Directory) until you create an Oracle 9*i*FS-specific password for these accounts.

[2] Only Oracle 9*i*FS administrators should have access to CUP (command line utilities protocol).

1. Launch Oracle 9*i*FS Manager:

   ```
   $ORACLE_HOME/9ifs/bin/ifsmgr
   ```

2. When prompted for account and password, login in as `system/<password>` (`manager9ifs` is the default password for Oracle 9*i*FS system user.)
3. From Oracle 9*i*FS Manager under Administrator's tasks, click on Users in the left-hand navigation pane. The User Selector pane displays in the right-hand portion of the display.
   - In the User Selector pane, search for the user account for which you want to create an Oracle 9*i*FS-specific password. When the name displays, double-click to open the Edit <username> dialog.
   - If you are creating a new user account rather than editing an existing account, right-click on Users to open the Create... dialog and create a new user account. Complete the fields as needed.
4. On the General tab, enter the "9iFS Private Password" for this user.
5. Confirm the Oracle 9*i*FS password by entering the password again in the "Confirm" field.

This additional password is stored in Oracle Internet Directory for use with the specific protocols. This password is different from (and, in addition to) the regular Oracle Internet Directory password. The result is added security: If a cleartext password is intercepted, it will not provide access to other applications using Oracle Internet Directory, because it uses a different password verifier in Oracle Internet Directory. See *Oracle Internet Directory Administrator's Guide* for complete details about Oracle Internet Directory and password verifiers.

See *Oracle Internet File System Setup and Administration Guide* for more information about creating users.

Change Default Passwords

You should change passwords for the `system` and `scott` user accounts as soon after installation as possible, to avoid potential security breaches. Do not change the `guest` account, or some protocols will stop functioning.

Be sure to pick a password for your `system` account that will be easy for you to remember, but difficult for anyone else to guess. If at some point in the future you forget your `system` password, you must file a TAR with Oracle Support to obtain instructions about how to reset the Oracle *i*FS system password.

See the *Oracle Internet File System Setup and Administration Guide* for details about changing user account passwords, including the `system` user account.

Validate Basic Operations

To validate that the domain and node started and that the core Oracle 9*i*FS components are working, you can attempt to connect to the system from another machine on the network. As shipped, Oracle 9*i*FS includes three Oracle Internet File System user accounts and default passwords:

```
system/manager9ifs
scott/tiger9ifs
guest/welcome9ifs
```

Table 4–1 Basic Functionality

Protocol or Server	Access Address or Method	Expected Result
`Oracle 9iFS Web Interface`	http://<hostname>:7778/ifs/files	A logon web page displays in the browser. Use `scott/tiger9ifs` or `guest/welcome9ifs` to logon to Oracle Internet File System.
`SMB`	\\<hostname>\root From Windows Explorer, select "Map network drive."	A Windows file share displays.

Note that if you attempt to connect to the Web server (HTTP) and get a "503 Service Temporarily Unavailable" message, it means that the domain hasn't started. You must launch the node, the domain controller, and then start the domain.

Optional Post-configuration Tasks

Depending on your requirements and the specifics of your Oracle 9iFS deployment, you may want to perform some or all of these post-installation tasks.

- Integrate Sendmail with Oracle 9iFS
- Enable UNIX Clients to Map Oracle 9iFS as NFS Mountpoints
- Register the Oracle 9iFS Portlet with Oracle Portal
- Additional Post-configuration Tasks for Upgrades Only

None of these tasks is required to get Oracle 9iFS up and running.

Integrate Sendmail with Oracle 9*i*FS

To integrate the public-domain-version of the sendmail process with your Oracle 9iFS instance so that your users can send and receive mail through Oracle 9*i*FS SMTP server, you can run the ifsemailsetup script provided with the Oracle 9iFS installation.

Run the script only if you want users to receive email in their inboxes, and you want to use the public-domain version of sendmail (not Sendmail, Inc. or Solaris sendmail). Running the script will replace Solaris sendmail (or other commercial Sendmail) configuration information, so be sure you want to do this.

1. Logon to UNIX as the user root.
2. Navigate to $ORACLE_HOME/9ifs/bin directory.
3. Execute the ifsemailsetup script. For example:

```
# <oracle_home>/9ifs/bin/ifsemailsetup
```

Configure Oracle 9*i*FS NFS Server

If you installed NFS Protocol Server during configuration, you must be aware of some possible post-installation tasks. By default during configuration, the Oracle 9*i*FS server is configured on port 2049, with the mount server port set to 0 (for dynamic allocation in the portmapper). This configuration (2049/0) is for the primary NFS server.

If you have UNIX NFS running on the same machine, you will be prompted during the configuration process to select another port, other than 2049, for the Oracle 9*i*FS NFS Server. Changing these defaults makes the Oracle 9*i*FS NFS Server the secondary NFS port.

- Set the IFS.SERVER.PROTOCOL.NFS.RegisterWithPortmap= parameter to `false` if the UNIX NFS Server is running as the primary NFS Server. This is the default.
- Set the IFS.SERVER.PROTOCOL.NFS.RegisterWithPortmap= parameter to `true` if the UNIX NFS Server is not running.

Enable UNIX Clients to Map Oracle 9*i*FS as NFS Mountpoints

The Oracle 9*i*FS NFS server uses the UNIX system authentication method to authenticate users. The system authentication method identifies each UNIX user account by a user id number (UID). When a client attempts to connect to connect to the Oracle 9*i*FS NFS Server, it passes this UID to the server, which maps the UID to an Oracle 9*i*FS username.

The result is that users can login once, to the UNIX operating system and then access Oracle 9*i*FS through the NFS server without having to log in separately to Oracle 9*i*FS, as long as their UNIX accounts are mapped to Oracle 9*i*FS accounts. (The assumption is that all UNIX

machines share a common user account definition file. That is, UID 0034 on hostname host4.acme.com is the same individual as UID 0034 defined for hostname host6.acme.com, and all other hosts in the network.)

`UidToName` is a default mapping file installed in the Oracle 9iFS instance during Oracle 9iFS configuration. This file maps all UNIX UIDs, including the root account, to the Oracle 9iFS `guest` user account. The `UidToName` file has the same general format as the UNIX password file (/etc/passwd), although the UNIX password file has additional information, including group ID (GID), login shell, and home directory.

```
username : password : uid :
```

The password field is ignored; only the username and UID entries are used to create a mapping from the UID to the Oracle 9*i*FS username. For example:

```
scott:x:1123
guest:x:0
```

The line `guest:x:0` maps the UNIX root account (UID 0) to the Oracle 9*i*FS guest account. This is the only account mapping that the UidToName file contains at installation, and it's the recommended setting for the root account. To enable system authentication for your Oracle 9*i*FS users, however, you'll want to modify or overwrite the UidToName file, using one of these two approaches.

Note: Always keep a backup copy of the original UidToName file before modifying it, in case you want to revert to it for some reason.

If *all* Oracle 9*i*FS users on your system are the same as all UNIX account names:

You can use the `/etc/password` file as starting point from which to create a new `UidToName` file, and then edit the file:

1. From a shell command, copy the UNIX `/etc/passwd` file to a temporary location, renaming it `UidToName`.
2. Open this `UidToName` file with a text editor.
3. Change the mapping of the UNIX root user (UID 0) to an Oracle 9*i*FS account that has administrative access to Oracle 9*i*FS. Or, for better security, map UID 0 (the `root` user) to the guest account, to minimize the impact of any security breach.
4. Delete extraneous information associated with each user account (such as home directory information) from the file.

5. Logon to Oracle 9*i*FS (through one of the Oracle 9*i*FS protocol servers) as the Oracle 9*i*FS `system` user and then navigate to the `/ifs/nfs/config` directory. In this directory is the `UidToName` file that is installed into the Oracle 9iFS instance.
6. Make a backup copy of the original `UidToName` file, in case you want to revert to it for some reason.
7. Copy the edited `UidToName` file (from step 4) into Oracle *i*FS into the `/ifs/nfs/config` location.
8. To implement the change, you must stop and start the protocol server.

If Oracle 9*i*FS user names and UNIX account names are different:

1. Logon to Oracle 9*i*FS (through one of the Oracle 9*i*FS protocol servers) as the Oracle 9*i*FS `system` user and then navigate to the /ifs/nfs/config directory.
2. Open the `UidToName` mapping file using a text editor.
3. Change the mapping of the UNIX root user (UID 0) to an Oracle 9*i*FS account that has administrative access to Oracle 9*i*FS. Or, for better security, map UID 0 (the `root` user) to the guest account, to minimize the impact of any security breach.
4. Create entries in the UidToName file for each UNIX user that should also have access to Oracle 9*i*FS. Assuming you have user accounts bsmith, rgomez, vjsingh on Oracle 9*i*FS and the UNIX UIDs for these same users are bobsmith(1130), robertog(1131), and vijay(1137), the UidToName mapping file would look like this:

```
bsmith:x:1130
rgomez:x:1131
vjsingh:x:1137
guest:x:0
```

(The password field entry, x, has no significance.) Any user attempting to access the Oracle 9*i*FS NFS server for whom there is no mapping of UNIX UID to Oracle 9*i*FS account is given `guest` access only.

Integrate the Oracle 9*i*FS Portlet with Oracle Portal

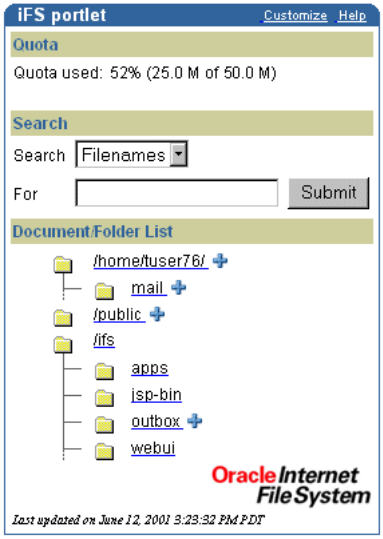
The Oracle 9*i*FS portlet is an Oracle Portal component that provides users with summary information about their Oracle 9*i*FS data (see Figure 4–1). Portal users can add the Oracle 9*i*FS portlet to their portal page and see at a glance how much of their storage quota is being used, and they can initiate a search, list documents or folders, and upload documents. To enable your users to use the portlet, you must:

1. Register the Oracle 9iFS Portlet with Oracle Portal

2. Enable the "Back to Portal" Button on Oracle iFS Web Interface

Optionally, users can customize the content that will display in the portlet by following the instructions in Edit Default Parameters (Optional)

Figure 4–1 The Oracle 9iFS Portlet



Register the Oracle 9*i*FS Portlet with Oracle Portal

Oracle Portal administrators can add the Oracle 9*i*FS portlet to their own installation of Oracle Portal, by registering it as a Web Provider on the portal:

1. On the portal, click the Administer tab.
2. In the Provider portlet, click the Add a Portlet Provider link.
3. Fill out the form to create a Web Provider, entering the values for the parameters shown in Table 4–3.

Table 4–2 Portlet Provider Parameters

Parameter	Value
Name	9iFS
Display Name	Oracle 9iFS

Table 4–2 Portlet Provider Parameters

Parameter	Value
Timeout	100
Timeout Message	9iFS portlet timed out
Implementation Style	Web
Register on Remote Node	No
Provider Login Frequency	Once per User Session
URL	http://<hostname>:<port>/ifs/portlet
Web provider in the same cookie domain as the portal	Do not check the checkbox.

4. Click OK to save the settings.

For more instructions on adding the portlet to a portal page see the Oracle Portal documentation.

Enable the "Back to Portal" Button on Oracle *i*FS Web Interface

When users click on any links displayed in the Oracle 9*i*FS portlet, the Oracle *i*FS Web interface displays. If you want users to be able to go back to Oracle Portal easily from Oracle *i*FS, you must modify one of the DavServer configuration parameter settings, specifically, the `IFS.SERVER.PROTOCOL.DAV.WEBUI.PortalUrl` parameter. Set the parameter to the URL of the Portal. For example:

```
IFS.SERVER.PROTOCOL.DAV.WEBUI.PortalUrl=http://my.oracle.com
```

If you don't change this parameter setting, the "Back to Portal" button won't display, and users won't be able to easily get back to the Portal from Oracle 9*i*FS.

See the *Oracle Internet File System Setup and Administration Guide* for details about how to modify protocol server parameters.

Edit Default Parameters (Optional)

The portlet parameters determine what the Oracle 9iFS portlet will display by default. Users can customize their portlets using the 'Customize' link in their portlet (located in the upper-right-hand corner of the portlet; see Figure 4–1).

As administrator, you can edit the defaults your users will have available in their portlets by changing the portlet parameter settings in the DavServerConfiguration (shown in Table 4–3)

using Oracle 9*i*FS Manager. For information about changing these parameters, see the *Oracle Internet File System Setup and Administration Guide*.

Table 4–3 Portlet Parameters

Parameter	Setting
IFS.SERVER.PROTOCOL.PORTLET.QuotaDisplayed=[true|false]	Set to true to display the Quota section on the portlet.
IFS.SERVER.PROTOCOL.PORTLET.SearchDisplayed=[true|false]	Set to true to display the Search section of the portlet.
IFS.SERVER.PROTOCOL.PORTLET.ItemListDisplayed=[true|false]	Set to true to display the Files/Folders List
IFS.SERVER.PROTOCOL.PORTLET.ExpandFolders=[true|false]	Set to true to enable top-level folder expansion.
IFS.SERVER.PROTOCOL.PORTLET.FolderItemCount=*n*	Where *n* = the number of items to be listed for each top-level folder.
IFS.SERVER.PROTOCOL.PORTLET.FileList+=HOME_FOLDER	Default folder location to list by default.
IFS.SERVER.PROTOCOL.PORTLET.FileList+=/public	Default files to be listed.

Additional Post-configuration Tasks for Upgrades Only

If you upgrade an Oracle Internet File System instance with Oracle Text support to the current release, you must perform these additional post-configuration tasks after the upgrade.

Re-populate the Oracle Text Index

Re-populate the Oracle Text index for all existing documents in the Oracle 9*i*FS schema. To do this, log on to the database server SQL*Plus as the Oracle 9*i*FS schema user (the database user that owns the schema, the default is IFSSYS), and type the following:

```
exec ctx_output.start_log('ifsidx.log')
update odmz_context_router set contentprocedure = contentprocedure;
commit;
exec ctx_ddl.sync_index('ifs_text');
exec ctx_output.end_log
```

This process can take several hours or longer, depending on the number of documents in the Oracle 9*i*FS schema. If you don't follow this step, the Oracle 9*i*FS servers will operate but you won't be able to search on the content of any documents. Monitor the file `ifsidx.log` located in the `$ORACLE_HOME/ctx/log` directory for any problems during the re-indexing.

Modify Oracle Text Indexing Scripts

In Oracle 9iFS, a new Oracle Text index replaces the old Oracle Text index. The new index uses the USER_DATASTORE feature to use multiple content stores with only one Text index. The name of the Text index, IFS_TEXT, is no longer derived from internal content store objects.

If you are upgrading from Oracle iFS 1.0 or 1.1, you need to update any scripts, such as DMBS_JOB procedures, with the new name. For 1.0, the index was named INDEXEDBLOB_I. For 1.1, the index was named GLOBALINDEXEDBLOB_I.

See *Oracle Internet File System Setup and Administration Guide* for details.

5

Client Software Installation

This chapter provides information about installing and configuring client software for use with Oracle 9*i*FS. Topics include:

- Oracle 9iFS Client Software Installation
- Oracle 9iFS Command Line Utilities Installation and Configuration
- Client Access to Oracle 9iFS

Oracle 9*i*FS Client Software Installation

In addition to using the networking protocols or client applications native to the Windows operating system (as described briefly in "Client Access to Oracle 9iFS" on page 5-5), Oracle 9*i*FS Windows users can also install and use Oracle 9*i*FS Windows Utilities and Oracle 9*i*FS FileSync. Both these applications are optional, but they do provide enhanced functionality. The software is ready to install from any Oracle 9*i*FS server, in the locations listed in Table 5–1.

Table 5–1 Windows Client Software Locations and Default Installation Directories

Client Tool	Oracle 9iFS Server	Windows Client Default Installation Directory
Oracle 9*i*FS Windows Utilities	/ifs/clients/winui	c:\Program Files\Oracle\Oracle 9iFS Utilities 9.0.2
Oracle 9*i*FS FileSync	/ifs/clients/filesync	c:\Program Files\Oracle\Oracle 9iFS FileSync

You can install each of these utilities by:

- Mapping a network drive to the appropriate subdirectory on Oracle 9*i*FS server.
- Executing the Setup.exe command by double-clicking the file (or by entering `setup.exe` in the Run... command from the Windows Start menu).

The default target directories for client installation are listed in Table 5–1. See "Installing Oracle 9iFS Windows Utilities" and "Installing Oracle 9iFS FileSync Utility" for more information.

Installing Oracle 9*i*FS Windows Utilities

Although Oracle 9*i*FS users do not need any additional software to access Oracle 9*i*FS from Microsoft Windows clients (Windows users can map Oracle 9*i*FS as a network drive, for example) the Oracle 9*i*FS Windows Utilities provide additional content management features, such as check-in, check-out, and versioning.

The Oracle 9*i*FS Windows Utilities software is loaded into the Oracle 9*i*FS server in the directory listed in Table 5–1. To install the Oracle 9*i*FS Windows Utilities, users should follow these steps:

1. Save and exit all Windows applications.
   - If you already have a previous release of Oracle 9*i*FS Windows Utilities software installed, be sure to first uninstall it by using the Add/Remove Programs control panel.
2. Map a drive to the Oracle 9*i*FS server directory:

   ```
   /ifs/clients/winui/
   ```

3. Double-click the `Setup.exe` program to execute the installation process, or run `Setup.exe` from the Run command in the Start Menu.
4. Follow all instructions and accept the defaults. The application will be installed in the Windows client machine in the directory listed in Table 5–1. During installation, if the Windows machine does not have the following Microsoft components[1] already installed, they will be installed on the client machine (select "Yes" if you are prompted to install or upgrade these components):
   - Windows Sockets Version 2 (WinSock2)
   - Common Control 4.0 Upgrade
   - HTML Help 4.0
5. After you install the Oracle 9*i*FS Windows Utilities, restart the machine.

With Oracle 9*i*FS Windows Utilities installed, the Windows Explorer File menu and the Windows Explorer context menu (right-click menu) provide access to advanced Oracle 9*i*FS

[1] All Windows operating systems newer than Windows 95 should already have WinSock2 preinstalled with the operating system.

features. To view the context menu, right-click a file or folder on an Oracle 9*i*FS drive. See the Online Help for additional information about using Oracle 9*i*FS Windows Utilities.

Installing Oracle 9*i*FS FileSync Utility

Oracle 9*i*FS FileSync is Windows client software that enables users to keep files synchronized between their local machine and Oracle 9*i*FS. To install FileSync, users should follow these steps:

1. Save and exit all Windows applications.
   - If you already have a previous release of Oracle 9*i*FS FileSync software installed, be sure to first uninstall it by using the Add/Remove Programs control panel.
2. Map a drive to the Oracle 9*i*FS server directory:

   ```
   /ifs/clients/filesync/
   ```

3. Double-click `Setup.exe` to run the installation program, or run `Setup.exe` from the Run... command in the Start Menu.
4. Follow the instructions and accept the defaults. The application will be installed in the Windows client machine in the directory listed in Table 5–1.
5. To start the FileSync application, select Oracle 9*i*FS FileSync from the Windows Start -> Programs menu.

See the Online Help for additional information about using Oracle 9*i*FS FileSync.

Oracle 9*i*FS Command Line Utilities Installation and Configuration

Oracle 9*i*FS Command Line Utilities are installed on the server machine when Oracle 9*i*FS is configured, and can be used on the server machine to perform a variety of administration tasks. Optionally, Oracle 9*i*FS administrators can also install the software on a UNIX workstation or Windows machine, for initiating commands remotely, as detailed in this section.

Table 5–2 Command Line Utilities Client Software Location

Client Tool	Oracle 9*i*FS on UNIX	Oracle 9*i*FS on Windows
Command Line Utilities	/ifs/clients/cmdline/unix	/ifs/clients/cmdline/win32

To install the Command Line Utilities, simply copy the entire directory where the files are located from the Oracle 9*i*FS server to a directory on your local machine, as follows:

1. Make a directory on the local machine for the Command Line Utilities, and change to that directory; for example, on a Windows client:

   ```
   c:\ cd cmdline
   ```

2. Select the version of the files, located in the directory on the Oracle 9*i*FS server, for the client workstation into which you're installing, and either map a drive (from Windows) or use FTP (from) to that directory (shown in Table 5–2).
3. Copy the contents to the local directory.
4. In a text editor, open the `ifscmdline.sh` (UNIX) or `ifscmdline.bat` file (Windows NT/2000 clients) on the local machine and edit the parameters listed in Table 5–3 to specify the appropriate path information for the Command Line Utility to run from the client and connect to the specified server.

Additional information about the settings is contained in the ifscmdline file.

Table 5–3 ifscmdline Parameters

Parameter	Description	Example
IFS_CMD_CLASSPATH	Location of the `cmdlineutils.jar` file. Set to the path on the local machine.	c:\cmdline\cmdlineutils.jar (Windows)
IFS_COOKIE_DIRECTORY	Location of the IfsCookie file. If not set, IfsCookie file is stored in the current working directory. The IfsCookie file is generated each time a user logs in. The file stores session information for the Command Line Client Utilities.	c:\cmdline (Windows)
IFS_CUP_SERVER	Machine name of the server on which the Command Line Utility Protocol (CUP) Server is running.	ifstestmachine
IFS_CUP_PORT	The default port for CUP protocol is 4180. Enter the correct port number in the ifscmdline file if the CUP server is running on a port other than 4180.	set IFS_CUP_PORT=4182 (Windows) export IFS_CUP_PORT=4182 (UNIX)

Windows NT (Western European Locale) and DOS Console Codepage

Before running the command-line utilities, you must make sure that your DOS console session is set for WinLatin1 code page. A *code page* is an internal table that the operating system uses to map symbols, such as letters, numerals, and punctuation marks, to a character

number. Different code pages provide support for the character sets used in different countries. Code pages are referred to by number. For instance, code page 437 represents DOSLatinUS.

If you are running the command-line utilities from a Windows NT machine that has been configured for Western European locale, you should set the code to 1252 at the console session before running the command-line utilities, as follows:

```
c:\mode con codepage select=1252
```

The console displays a status listing of all console settings, including the codepage just entered.

For more information about using the Command Line Utilities, see the *Oracle Internet File System Setup and Administration Guide*.

Client Access to Oracle 9*i*FS

Once users have an account and password for Oracle 9*i*FS, they can access Oracle 9*i*FS using the client tool of their choice: Web browser for HTTP or FTP, for example. Windows users can map drives or use WebDAV; Macintosh clients can use the Chooser to mount AFP (AppleTalk Filing Protocol) protocol server. Table 5–4 lists some of the supported client platforms, access methods, and protocols supported. See the *Oracle 9i*FS *Release Notes* for complete client certification information.

Table 5–4 Client Platforms and Protocol Support

Client Platform	Protocols Supported	Access Using
Windows NT, Windows 2000, Windows 98, Windows 95	FTP, HTTP, SMB, WebDAV	Browser, Windows Explorer
Macintosh	AFP, FTP, HTTP, WebDAV	Macintosh Chooser (MacOS 9.x); Macintosh Go... Menu (Mac OSX)
Solaris 7, Solaris 8	FTP, NFS	mount, link commands
Red Hat Linux 6.2	FTP, NFS	mount

This section provides some additional information about client access to Oracle 9*i*FS.

AppleTalk Filing Protocol (AFP) for Mac Clients

Oracle 9*i*FS includes an AFP 2.2-compliant AppleTalk Filing Protocol (AFP) server. MacOS 9 and MacOS X clients can use the AFP Server just as if it were an AppleShare server. The steps users must take to connect to the AFP server depend on the MacOS on the client. MacOS 9 clients use the Chooser, while MacOS X clients use the Go...menu from the desktop, as detailed below.

From MacOS 9.x Clients:

1. Select Chooser...from the Apple menu. AppleShare servers, printers, and other resources display.
2. Click on the AppleShare icon. AppleShare servers display in the right pane.
3. Click the Server IP Address... button in the lower portion of the dialog. A subsequent dialog displays.
4. Enter the IP address of the Oracle 9*i*FS machine running AFP Server.

The AppleShare icon displays on the client desktop.

From MacOS X Clients:

In MacOS X, the Chooser doesn't exist. Clients should connect using the new Go... menu, as follows:

1. Select Go...from the menu.
2. Select Connect to Server.... A dialog box displays.
3. Enter the address of the Oracle 9*i*FS machine running AFP Server as a URL, as follows:

   ```
   afp://machine-name
   ```

The AppleShare icon displays on the client desktop.

Web Browser (HTTP)

HTTP access to Oracle 9*i*FS is as follows:

Server Platform	URL
UNIX	`http://<server-name>:7777/ifs/files`
Windows NT/2000	`http://<server-name>:80/ifs/files`

The URL is required for access from:

- Web browser
- DAV applications, such as Web Folders
- Oracle 9*i*FS FileSync utility

NFS (Network File System) Protocol

Oracle 9*i*FS provides an NFS protocol server that is certified for use with several NFS clients, including:

- Solaris 7 and Solaris 8
- Red Hat Linux 6.2
- Windows 95, 98, NT, and 2000 Clients using Hummingbird Maestro NFS

If the Oracle 9*i*FS NFS server has been configured as the primary NFS server, then UNIX clients (Solaris 7, Solaris 8, and Red Hat Linux 6.2) can access the server using the standard NFS mount command, as shown in Table 5–5.

Table 5–5 Mount Oracle 9iFS Server (Configured as Primary NFS Server)

Syntax	Example
`mount <host>:<pathname> <mount_point>`	`mount ifsserver:home /data/ifs`

If the Oracle 9*i*FS NFS server is configured as the secondary NFS server, or if the Oracle 9*i*FS NFS server is not on the standard port number, Solaris clients must specify the 'public' option and Linux clients must specify the mount port, as described in Solaris 7 and Solaris 8 and Red Hat Linux 6.2.

Other caveats apply to Hummingbird Maesto clients, as detailed in "Linking an NFS Directory Using the NFS Maestro Network Access Tool".

In addition, given the nature of the NFS protocol itself, users should be aware of some Oracle 9iFS NFS Server Limitations.

Oracle 9*i*FS NFS Server Limitations

Permission mode bits used by native UNIX NFS are not used by the Oracle 9*i*FS NFS protocol server (issue 1750049). Instead, as it does with its other protocol servers, Oracle 9*i*FS NFS uses ACLs (access control lists) to control access. That means that displaying the permission mode bits from an NFS client is meaningless.

The Oracle 9*i*FS NFS server also does not support:

- UNIX symbolic and hard links.
- UNIX chown, chgrp, and chmod commands. (Use Oracle 9*i*FS Command-line Utilities to change the owner and access control list for a file.)
- UNIX lock manager. Handles returned by the Oracle 9*i*FS NFS server are not compatible with the UNIX lock manager. Applications requiring UNIX lock manager services won't work with Oracle 9*i*FS NFS server.

NFS clients cannot access the checked-out version of a versioned document. To avoid potential conflicts, the Oracle 9*i*FS NFS server does not allow access by NFS clients to the checked-out version of a versioned document.

Versioned documents cannot be deleted, moved, or renamed. Some applications, including Microsoft Office applications, save files by first saving the data to a temporary file, deleting the original file, and then renaming the temporary file to the original name. If a document is versioned, this would result in the loss of previous versions.

Solaris 7 and Solaris 8

If the Oracle 9*i*FS NFS server is running as the primary NFS server on the host, users can enter the standard mount command as shown in Table 5–5. If the Oracle 9*i*FS NFS server is the secondary NFS server on the host, you must explicitly include the port number in the mount command:

```
mount nfs://<host>:<portno>/home /data/ifs
```

For example, `mount nfs://ifsserver:4049/<pathname> <mount_point>`

Alternatively, you can enter:

```
mount -o port=<portno>, public <host>:<pathname> <mount_point>
```

For example, `mount -o port=4049, public ifsserver:home /data/ifs`

Red Hat Linux 6.2

If the Oracle 9*i*FS NFS server is running as the primary NFS server on the host, users can enter the standard mount command as shown in Table 5–5. If the Oracle 9*i*FS NFS server is the secondary NFS server on the host, you must explicitly include the port number in the mount command, as shown below:

```
mount -o port=<portno>,mountport=<portno1> <host>:<pathname> <mountpoint>
```

For example, `mount -o port=4049, mountport=4048 ifsserver:home /data/ifs`

Windows Clients

While client access to NFS is built-in to all UNIX-based operating systems, Windows systems require additional client software. Hummingbird Maestro NFS is one such client certified for use with Oracle 9*i*FS NFS Server.

- Windows 2000 users who want to connect to Oracle 9*i*FS NFS Server must use Hummingbird Maestro NFS 7.0.
- Windows 95, 98, and NT users who want to connect to Oracle 9*i*FS NFS Server can use Hummingbird Maestro NFS 6.0, and the caveats above do not apply.

See the *Release Notes* for other currently supported NFS client applications and version numbers.

Linking an NFS Directory Using the NFS Maestro Network Access Tool Before using the Hummingbird NFS Maestro client to access the Oracle 9*i*FS NFS server, you should check that the NFS Maestro client is properly configured.

1. From the NFS Maestro folder, start the NFS Network Access tool. The NFS Network Access dialog displays.
2. Enter the host name of the Oracle 9*i*FS NFS server and the pathname in the Network Path field using this format:

   ```
   \\<host>\<pathname>
   ```

3. In the Authentication Details area, enter the UNIX username and password for accessing the Oracle 9*i*FS NFS server. Select System/UNIX Authentication as the Authentication Protocol.
4. Set the Miscellaneous values:
   - DOS-style sharing: De-select DOS-style file sharing unless you have the HCLNFSD daemon running on the NFS server machine. HCLNFSD is required for DOS-style file sharing; If the HCLNFSD daemon is not running on the NFS server, response times in accessing files will be unacceptable.
   - UNIX lock manager: De-select UNIX lock manager if it's checked. The Oracle 9*i*FS NFS server is not compatible with the UNIX lock manager.
   - CD-ROM: De-select this box if it's selected. Used for CD-ROM or other read-only filesystem.
5. Select the Advanced button to display the Advanced Connection Properties dialog.
6. Select Preserve Case for Filename Case.

7. If the Oracle 9*i*FS NFS server is running as a secondary NFS server, change the NFS Port number from the standard port (2049) to the alternate port number that the Oracle 9*i*FS NFS server is using.
8. To use TCP instead of UDP for connection to the NFS server, select the Use TCP box. (TCP uses the standard NFS port 2049. Do not select this box if the Oracle 9*i*FS NFS server is running on an alternate port.)

Linking an NFS Directory Using the Command Line If the Oracle 9*i*FS NFS server is the primary NFS server on the host, you can mount Oracle 9*i*FS using the Maestro command-line syntax, as follows:

```
nfs link <drive>: \\<host>\<pathname> <username>
```

For example, `nfs link n: \\ifsserver\home scott`. If the Oracle 9*i*FS NFS server is the secondary NFS server on the host, you must specify the Oracle 9*i*FS NFS server port number in the command line, as follows:

```
nfs link <drive>: \\<host>\<pathname> <username> /n:4049
```

For example, `nfs link n: \\ifsserver\home scott /n:4049`.

The `nfs link` command uses the default values configured for the NFS Maestro Client, unless you specify options listed in Table 5–6.

Table 5–6 Maestro Command Line Options

Option	Meaning	Usage Note
/L:s	Use DOS-style sharing,	Requires that the hclnfsd daemon run on the server.
/L:	Disables locking.	Use this parameter if the server does not have hclnsfd daemon running.
/M:p	Preserve case of filenames	
/A:u	Use System/UNIX authentication	Always use this setting.
/T	Use a TCP connection instead of a UDP connection (optional).	TCP connections always use port 2049. Do not use this option unless the Oracle 9*i*FS NFS server is running port 2049 (the default).

Common problems are often due to incorrect port numbers. If the hclnfsd daemon is not running on the server, be sure that DOS-style locking and sharing is disabled on the client.

Maestro Error Messages Table 5–7 lists some common error messages and other Maestro client problems.

Table 5–7 Maestro Client or Server Error Messages or Problem Symptoms

Problem	Corrective Action
"Access denied by server" message	Check that the correct port number is being used for the Oracle 9iFS NFS server. Note: A TCP connection will always use the standard NFS port (2049). Do not use this option if the Oracle 9iFS NFS server is running on an alternate port.
"Authorization Error" message	The username and password may have been specified incorrectly. Make sure that a UNIX username and password which are valid on the authentication server are specified.
"Bad Network Name" message	Verify that the host name and pathname are correctly specified. If they are, then use the NFS Maestro Rpcinfo tool and verify that the NFS server (process number 100003) is running on the host.
Maestro client appears to hang	Verify that the hclnfsd daemon is running on the server machine. If it's not, either start the daemon (if possible), or verify that DOS-style sharing UNIX lock manager have been de-selected in the Maestro client settings. For the Maestro command line, be sure to specify '/L:' on the command line when linking to disable locking. (You can check all current mapped drives by using Maestro's `nfs use` command.).
"Network Timeout or HCLNFSD/PCNFSD not running on Host" message	Verify that the default authentication server has been correctly configured in the NFS client. Verify that the hclnfsd daemon is running. Perform the verifications listed for the "Bad Network Name" message.
`nfs link` command hangs	Verify that the correct host name and port number are specified and that the Oracle 9*i*FS NFS server is running.
"NFS service not responding" error message	Verify that the correct host name and port number are specified and that the Oracle 9*i*FS NFS server is running.
"Permission denied" error message	Verify that the host name and pathname are correctly specified. Verify that the port is correctly specified for the Oracle 9*i*FS NFS server.

6

Troubleshooting

This chapter describes common installation problems and solutions.

- Installation Problems
- Deinstalling Oracle Internet File System
- When to Contact Oracle Support Services

Installation Problems

Most installation errors involve failure to carefully follow pre-installation instructions. The following table describes some common installation problems, what may have caused them, and what you should do to correct the problem. Note that installation and configuration actions are captured in two different log files that you can examine to assist in troubleshooting efforts:

- `$ORACLE_HOME/oraInventory/logs/installActions.log` file records any errors encountered during installation.
- `$ORACLE_HOME/9ifs/log/IfsConfigOut.log` file records errors encountered during Oracle 9*i*FS configuration.

Problem	Probable Cause	Corrective Action
"Classpath verification error" message displays when running Oracle 9*i*FS Configuration Assistant.	Missing library files. The Configuration Assistant checks for ojsp.jar and servlet.jar (required for Oracle HTTP Server) and for translator.zip file, and raises the error message if any of these are missing. (Oracle 9*i*FS requires LoadJava, which is supported by the SQLJ library contained in translator.zip).	Re-install the Oracle database. Be sure to install Oracle9*i* and choose a "Typical" installation to ensure that all required components will be installed.
Error in creating or upgrading database objects.	The database is not running or is not available, or the Listener is not running.	Start the database and listener prior to configuration.
Database-related Installer error messages.	Starting installation without the database running. Attempting to configure Oracle 9*i*FS without correctly configuring OracleText.	Start database prior to installation and check the `tnsnames.ora` and `listener.ora` files.
Permission problems during installation.	Attempting to install as the wrong user.	Check filesystem permissions. Install Oracle 9*i*FS using the same account used to install Oracle9*i* on the machine.
Oracle 9*i*FS servers fail due to insufficient database resources.	Values in `init<sid>.ora` are too low.	Check the `$ORACLE_HOME/9ifs/log` directory for the log file of the failed server. Edit the init<sid>.ora file, but provide larger values.

Problem	Probable Cause	Corrective Action

iFSConfig hangs during "Verifying Oracle9*i* Text" phase.	**ctxhx** is misconfigured and is spinning.	1. Using **top** or **ps**, check your operating system processes to verify that **ctxhx** is using more than 80% of a CPU and does not complete within a minute.
		2. Kill the **ctxhx** process.
		3. Rerun iFSConfig.
		4. If that does not solve the problem, then test **ctxhx** independently of iFSConfig by issuing these two single lines:
		`cd $ORACLE_HOME/9ifs/admin/binaries`
		`./ctxhx $ORACLE_HOME/adm/sql/ifsctxtest.doc test.html`
		5. If this fails, contact Oracle Support.
		6. If this succeeds, then test **VerifyContext** independently of iFSConfig.
		- Create a temporary table with a BLOB column.
		- Create an Oracle9*i* Text index on that BLOB column.
		- Put a simple Microsoft Word document into the BLOB column.
		- Synchronize the Oracle9*i* Text index.
		- Query for the document content.
		Test VerifyContext by issuing these two single lines:
		`cd $ORACLE_HOME/9ifs/admin/binaries`
		`. ifsenv.sh $IFS_JRE -classpath $IFS_BASE_CLASSPATH oracle.ifs.tools.VerifyContext sys change_on_install $ORACLE_HOME/9ifs/admin/sql/ifsctxtest.doc`
		[and if the database is on a separate machine, supply the optional JDBC connect string, such as:
		`jdbc:oracle:oci8:@myTNSalias]`
		7. Examine the output of VerifyContext to determine the source of the error.

Problem	Probable Cause	Corrective Action

"No ocijdbc9 in java library path" error message during Oracle 9*i*FS configuration.	Attempting to configure on a 64-bit machine that has not had the LD_LIBRARY properly set.	Add $ORACLE_HOME/lib32 to the LD_LIBRARY_PATH environment variable to the shell profile in which `ifsconfig` is launched. Here are examples of the lines you would add to the `.profile` or `.login` file of the *oracle* account (assuming yo the account used to install Oracle 9*i*FS).
		Korn shell example (`.profile`)
		`...`
		`LD_LIBRARY_PATH=$ORACLE_HOME/lib32:$LD_LIBRARY_PATH; export LD_LIBRARY_PATH`
		C shell example (`.login`):
		`...`
		`setenv LD_LIBRARY_PATH $ORACLE_HOME/lib32:$LD_LIBRARY_PATH`
		After setting these environment variables, execute the `.profile` or `.login` so that they take effect. For the Bourne or Korn shell:
		`$ . .profile`
		For the C shell:
		`% source .cshrc`
		Run `ifsconfig` again after making the changes.

"Out of database cursors" message written to `$ORACLE_HOME/9ifs/log/Node.log`	Values of the `open_cursors` in the `init<sid>.ora` are too low.	Modify the init<sid>.ora file or change SPFILE using a larger value for `open_cursors`.
Server is slow	Tuning needs to be done.	See the "Chapter 9: Oracle 9*i*FS Troubleshooting and Performance Information" in the *Oracle Internet File System Setup and Administration Guide*.
Cannot search on document contents after upgrading the Oracle Internet File System schema from version 1.0 or version 1.1.	Oracle9*i* Text index was not re-populated.	See *Chapter 3, "Installation and Configuration"* for more information.

Deinstalling Oracle Internet File System

To deinstall Oracle 9*i*FS, you must run the Oracle Universal Installer, as follows:

1. Logon using the account that installed and configured Oracle 9*i*FS. Typically, this is an account called "oracle."
2. Stop the domain and nodes.
3. Shut down all protocol servers and agents using the appropriate command for your release of the product:

Release	Command
Oracle Internet File System	`$ORACLE_HOME/ifs/bin/ifsstop`
Oracle Internet File System 1.1	`$ORACLE_HOME/ifs1.1/bin/ifsstop`
Oracle 9*i*FS 9.0.1 (and higher)	`$ORACLE_HOME/9ifs/bin/ifsstopdomain` (Or, use the Oracle Enterprise Manager Console to stop the domain and all nodes.)

4. Allow some time for all processes to stop.
5. Launch the Oracle Universal Installer:

   ```
   ./runInstaller
   ```

6. On the Welcome page, click the Deinstall Products button. The Inventory page displays.
7. On the Inventory page, click the $ORACLE_HOME directory to display all installed components. The Oracle Internet File System should be included in the list.
8. Select Oracle Internet File System from the list and then click Remove.
9. Click Yes to confirm the Oracle 9*i*FS deinstallation. The software components will all be removed, and in a moment, the Oracle Universal Installer redisplays.
10. Click the Close button.
11. Exit the Oracle Universal Installer.
12. To completely remove the Oracle Internet File System directory from the machine, you must logon as `root` (or `oracle`) and use the UNIX remove (rm) command with the "recursive" and "force" options.

CAUTION: Be absolutely certain to enter the correct pathname before executing the command below. The force parameter (-f) will remove all files, even those for which you do not have write access, and the recursive parameter (-r) will remove all files in all sub-directories under the path. If you enter the wrong pathname, you could seriously damage your system.

```
rm -rf $ORACLE_HOME/9ifs
```

When to Contact Oracle Support Services

You can contact Oracle Support Services at http://metalink.oracle.com.

Before calling Oracle Support Services:

- Verify that your software, database, and environment meet Chapter 2, "Pre-installation" requirements.
- Have available your CSI number (if applicable) or full contact details, including any special project information, complete release numbers of Oracle 9*i*FS and associated products, operating system name and version number.
- Document error codes, messages, and all other details of the issue, including:
  - **What** occurred or did not occur? For example, what command was used and what was the result?
  - **When** did it occur? For example, during peak system load, after entering a specific command, or after upgrading the operating system?
  - **Where** did it occur? For example, on the database machine or on the Oracle 9*i*FS machine?
  - What is the **extent** of the problem? For example, is a production system unavailable, or is the impact minimal?
- Keep copies of installation logs, Oracle 9*i*FS logs, Oracle Text logs, trace files, core dumps, and redo log files from the time of the incident. Oracle Support Services may need these to further investigate your problem.

For installation-related problems, please have available:

- Listings of the contents of `$ORACLE_HOME` and any staging area, if used.
- All log files from the `$ORACLE_HOME/9ifs/log` directory.

Oracle Support Services can be reached at the following numbers. The hours are detailed in your support contract.

- In the USA: 1.800.223.1711
- In Europe: +44 1344 860160
- In APAC (Asia Pacific): +61 3.9246.0607

For a complete list of Support Numbers, see: http://www.oracle.com/support/contact_us/sup_hot_phone.html

A

Creating a Database for Oracle 9*i*FS

Follow these instructions to create a new database for Oracle 9*i*FS from the Oracle9*i*AS Infrastructure installation using the Oracle Database Configuration Assistant. The Oracle Database Configuration Assistant is located in:

```
$ORACLE_HOME/assistants/dbca
```

1. Select the General Purpose or Transaction Processing database template to ensure that initialization and other database sizing parameters meet or exceed all requirements listed in Table 2–4, "Oracle9i Initialization Parameters" in Chapter 2, "Pre-installation".

   - The General Purpose or Transaction Processing template also creates the necessary password file for the database, which must be there during Oracle 9*i*FS configuration. The password file enables you to connect to the service name using SYS as SYSDBA.

2. Enter a name for the database.

3. Select Unicode (UTF8) as the database character set to enable full multi-language functionality in Oracle 9*i*FS. Specifying a different database character set may limit Oracle 9*i*FS functionality.

   When you finish selecting all the specifics of the database, the Oracle Database Configuration Assistant launches and creates the database, giving it the name entered in step 2.

   After creating the database, you should logon to the database and change the `system/manager` and `sys/change_on_install` passwords (you can also do this during the Database Configuration Assistant process):

4. Use the command-line version of SQL*Plus to logon to the database and change the default sys password:

   ```
   $ sqlplus /nolog
   connect sys/change_on_install as sysdba
   ```

```
Connected.
SQL>alter user sys identified by new-password;
```

Once the database is operational, you should create tablespaces for the various Oracle 9*i*FS schema objects, such as Oracle Text tables and indexes.

Create Custom Tablespaces (Optional, but Recommended)

By default (during Oracle 9*i*FS configuration), all Oracle 9*i*FS schema objects get created and stored in the USERS tablespace. Depending upon your needs, this may not be optimal. You can use custom tablespaces for Oracle 9*i*FS rather than the USERS tablespace, if you create the tablespaces in advance of the Oracle 9*i*FS configuration process. When you create custom tablespaces for Oracle 9*i*FS, Oracle recommends that you:

- Create tablespaces as locally managed tablespaces. Locally managed tablespaces track all extent information in the tablespace itself, using bitmaps, resulting in simplified space allocation, ease of management, and performance benefits. Locally managed tablespaces have been available since Oracle 8.1, and beginning with the Oracle9*i* Database Server, locally managed is the default for all non-`SYSTEM` permanent tablespaces whenever the type of extent management is not explicitly specified. An example of the SQL syntax is:

  ```
  CREATE TABLESPACE "<tbspname>"
      LOGGING
      DATAFILE '/data1/home/oracle/product/oradata/<sidname>/<tbspname>
      TBSPNAME.dbf' SIZE 50M EXTENT MANAGEMENT LOCAL
  ```

  In this example, the EXTENT MANAGEMENT LOCAL clause is extraneous, since this is the default, but the full syntax is shown to highlight the fact that you need not provide segment, extent, and other sizing parameters.

  - If you create locally managed custom tablespaces, use the default options. Specifically, be aware that you should not specify automatic segment-space management for the tablespaces, because most all Oracle Internet File System data is stored as LOB[1]s, and AUTO SEGMENT SPACE MANAGEMENT does not support LOBs. (The default segment-space management type is MANUAL, so by default, locally managed tablespaces are created correctly for use with Oracle 9*i*FS.)

- Create custom tablespaces on disk storage appropriate for your implementation. See the *Oracle9i Database Performance Tuning Guide and Reference* for more information.

[1] Large Objects. See the *Oracle9i Application Developer's Guide - Large Objects (LOBs)* for more information about LOBs as implemented in the Oracle database.

See "Custom Tablespace Definitions for Oracle 9iFS" for information about what the various custom tablespaces contain.

For more information about creating tablespaces and about locally managed tablespaces, the *Oracle9i Database Administrator's Guide, Volume 1, Chapter 11, "Managing Tablespaces."* Also note that if you have Oracle Enterprise Manager installed and running, you can use the Console to create the tablespaces with just a few mouse clicks. See "Oracle Enterprise Manager" in Appendix B.

Custom Tablespace Definitions for Oracle 9*i*FS

For production Oracle 9*i*FS systems, Oracle recommends that you create custom tablespaces. (If you don't create custom tablespaces for Oracle 9*i*FS content, everything is stored in the USERS tablespace.) For Oracle9*i* Database Server, Oracle recommends that you create tablespaces as locally managed tablespaces.

Tablespace	Description	Your Tablespace Name
Primary	Stores metadata for documents, information about users and groups, and other Oracle 9*i*FS object data. (50 MB)	
Non-Indexed Media	Stores the LOB data for documents that are not indexed by Oracle Text, such as zip files. (50 MB)	
Indexed Media	Stores the LOB data for documents that are indexed by Oracle Text, such as text and word processing files. (50 MB)	
interMedia Media	Stores the LOB data for documents that are indexed by Oracle *inter*Media, such as image, audio, and video files. (50 MB)	
Oracle Text Index	Stores the Oracle Text tokens table (drifs_texti). (50 MB)	
Oracle Text Keymap	Stores the index on the Oracle Text tokens table (drifs_textx). (50 MB)	
Oracle Text Data	Stores the Oracle Text tables dr$_ifs_text$k, drifs_textn, and drifs_textr. (150 MB)	

B

Oracle Internet Directory and Oracle Enterprise Manager Reference

Topics in this appendix include:

- Oracle Internet Directory
- Oracle Enterprise Manager

Oracle Internet Directory

Oracle 9*i*FS can use one or more instances of Oracle Internet Directory to authenticate users. Each IfsService has a set of configuration properties that specify the credential managers used by that service. (Only one IfsCredentialManager per service is allowed, but multiple OidCredentialManagers are supported.) You must add the OidCredentialManagers to the service by using the Credential Manager Configuration Assistant, provided with Oracle 9*i*FS.

Credential Manager Configuration Assistant

You can use the Oracle 9*i*FS Credential Manager Configuration Assistant at any time to create new credential managers or edit and delete existing credential managers for use with Oracle 9*i*FS.

The Credential Manager Configuration Assistant (`ifsoidcm`) is located in the $ORACLE_HOME/9ifs/bin directory.

To run the script, you must be logged on to the system as the user who installed and configured all other Oracle software (probably "oracle").

1. After a welcome page displays, click Next to continue. A Login to Oracle 9*i*FS page displays, prompting you to enter the schema name (default is *IFSSYS)*, schema

password, and the service name associated with the database instance in which the Oracle 9*i*FS schema objects reside.

2. On the Login to Oracle 9*i*FS page, enter the schema name, password, and service name for the Oracle 9*i*FS instance for which you want to configure credential managers. Click Next to continue. The Database Connection Information page displays, prompting you for the host name, port number, and database service name.

3. Enter the host name [A from the User Account and Password Summary Tables in Appendix C], port number (typically 1521 for Oracle database server), and SID for the Oracle database. Click Next to continue. The Existing Credential Managers page displays:

Figure B–1 Existing Credential Managers Page

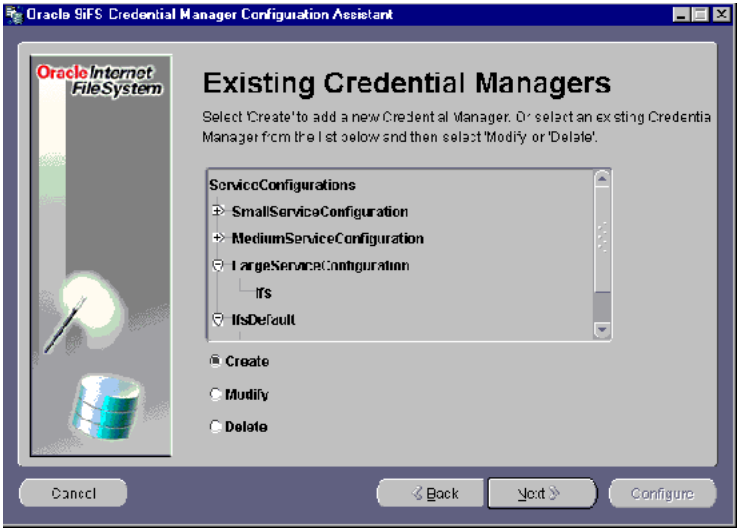
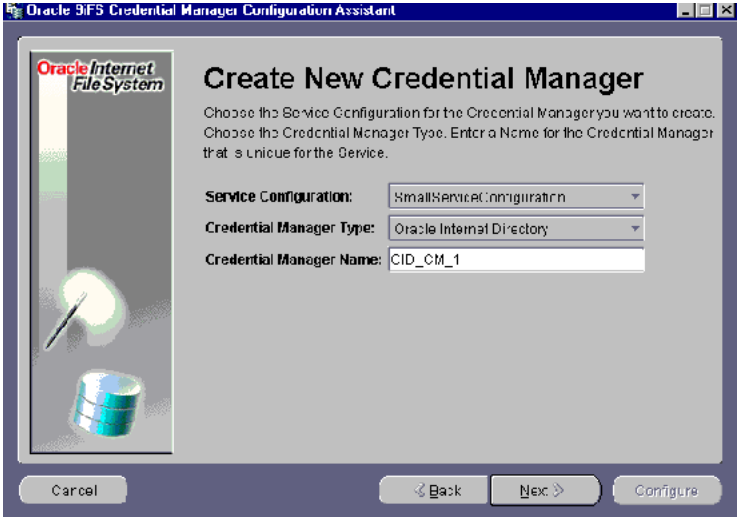


Figure B–1 shows an Ifs credential manager already exists for the LargeServiceConfiguration template, which means that whenever a LargeServiceConfiguration is used to create the service at runtime, an IfsCredentialManager will also be created for the instance of this service type.

4. To create an OidCredentialManager, select the Create radio button, and then click Next to continue. The Create New Credential Manager page displays.

Figure B–2 Create New Credential Manager



5. Select the Service Configuration for which you want to define an OidCredentialManager.
6. Select Oracle Internet Directory from the drop-down list in the Credential Manager Type field.
   – You can also select Internet File System as the type of Credential Manager. If you select Internet File System, the next two steps are bypassed and the Supported Functions page displays. Continue the instructions with step 10.
7. Enter a name for the credential manager in Credential Manager Name field. This name must be unique to the service configuration to which you are applying the entry, but it need not be unique across your domain.
8. Click Next to continue. The OiD Login page displays.

Figure B–3 OiD Login Page

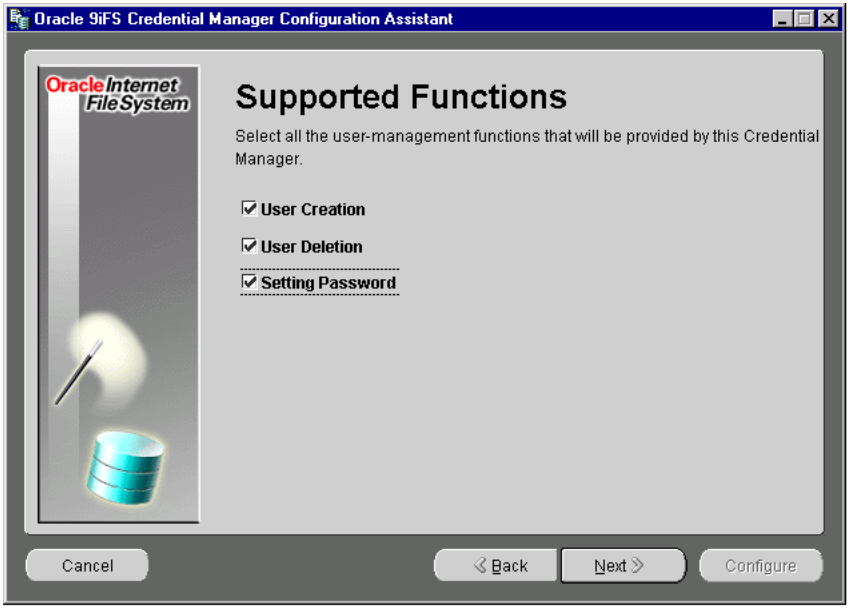
Enter the login information for the Oracle Internet Directory instance that you want to use for credential management.

- Enter the hostname for the machine on which Oracle Internet Directory is installed.
- The default port number for LDAP is 389. You can leave this alone.
- The default Oracle Internet Directory super user name and password is `cn=orcladmin/welcome`. Change only if appropriate.
- The default OiD root Oracle context is set to cn=OracleContext. You should leave this as is, unless you changed the directory context in Oracle Internet Directory.

See *Oracle Internet Directory Administrator's Guide for complete information about* Oracle Internet Directory.

9. Click Next to continue. The Supported Functions page displays.

Figure B–4 Supported Functions Page



Selecting a function on the Supported Functions Page enables the Oracle 9*i*FS Manager (User Manager) to be used with Oracle Internet Directory for that particular function. For example, if User Creation is selected, you can use Oracle 9*i*FS Manager to create new users in the Oracle Internet Directory.

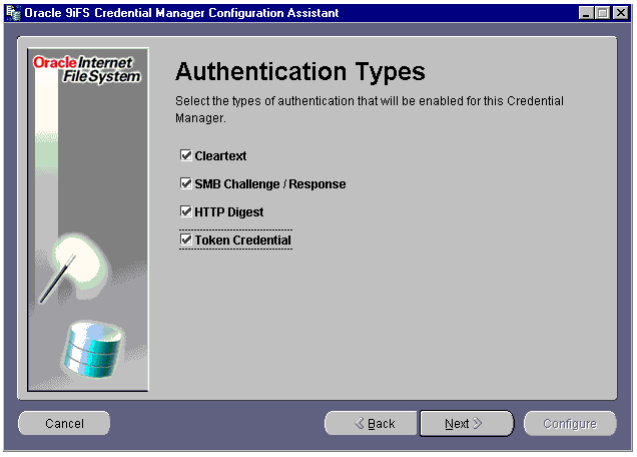
However, because the Oracle 9*i*FS Manager (User Manager) and APIs capture only a subset of the information managed by Oracle Internet Directory required for using Oracle 9*i*FS, Oracle recommends that you use Oracle Internet Directory user management tools. (You can still use Oracle 9*i*FS APIs to enable existing Oracle Internet Directory users for Oracle 9*i*FS.) In addition, if you use Oracle Internet Directory for other Oracle databases and applications in addition to Oracle 9*i*FS, you should definitely use Oracle Internet Directory management tools to manage users.

10. Select checkboxes in the Supported Functions page according to your needs.

- Do not select any functions if you use Oracle Internet Directory for other Oracle databases and applications in addition to Oracle 9*i*FS.
- Select all checkboxes if you use Oracle Internet Directory solely for Oracle 9*i*FS and if you want to manage users through the Oracle 9*i*FS Manager tool (using the User Manager tab).

11. Click Next to continue. The Authentication Types page displays.

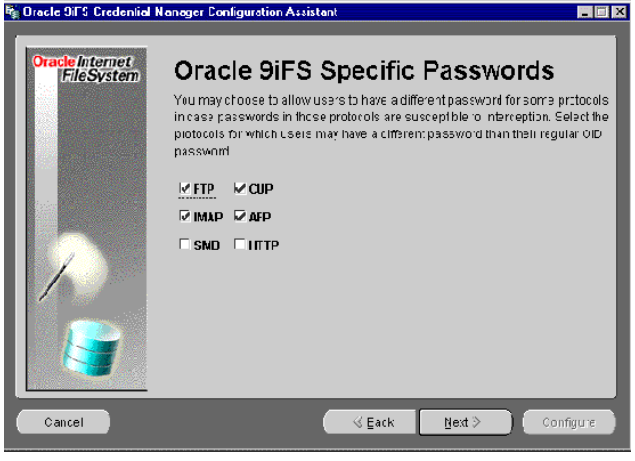
Figure B–5 Authentication Types



12. Select the types of authentication mechanisms that you want this credential manager to support. (You can accept the default setting, which is to enable all authentication types.)

13. Click Next to continue. The Oracle 9*i*FS Specific Passwords page displays.

Figure B–6 Oracle 9iFS Specific Passwords

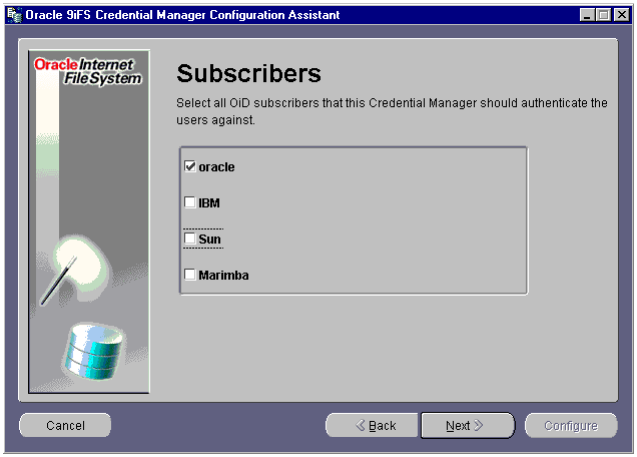


You can use an Oracle 9*i*FS private password (rather than the default OiD password) to authenticate users of selected protocol servers. The protocol servers shown in Figure B–6 all send passwords in cleartext, which means if one of these is intercepted it could potentially provide access to all systems controlled by OID for that user.

If you select any protocol servers on this page, you must also create a private password for all users who will access these protocols. Otherwise, the protocol server will not work. See Create Private (Oracle 9iFS-specific) Passwords for details.

14. Click Next to continue. The Subscribers page displays.

Figure B–7 Subscribers page



Oracle Internet Directory supports an application-service provider (ASP) or "hosted" model, in which multiple organizations can use the same directory service. If you are not working in such an environment, you see only one subscriber name listed on this page, that of your company. This is the default subscriber.

Click Next to continue. The Begin Configuration page displays. Click Next to continue. A credential manager is created according to the specifications you entered. During configuration of Oracle 9*i*FS, you can select this credential manager.

Oracle Enterprise Manager

Oracle 9*i*FS is integrated with Oracle Enterprise Manager. You can use the Oracle Enterprise Manager Web site available on every Oracle9*i*AS node to launch the nodes and

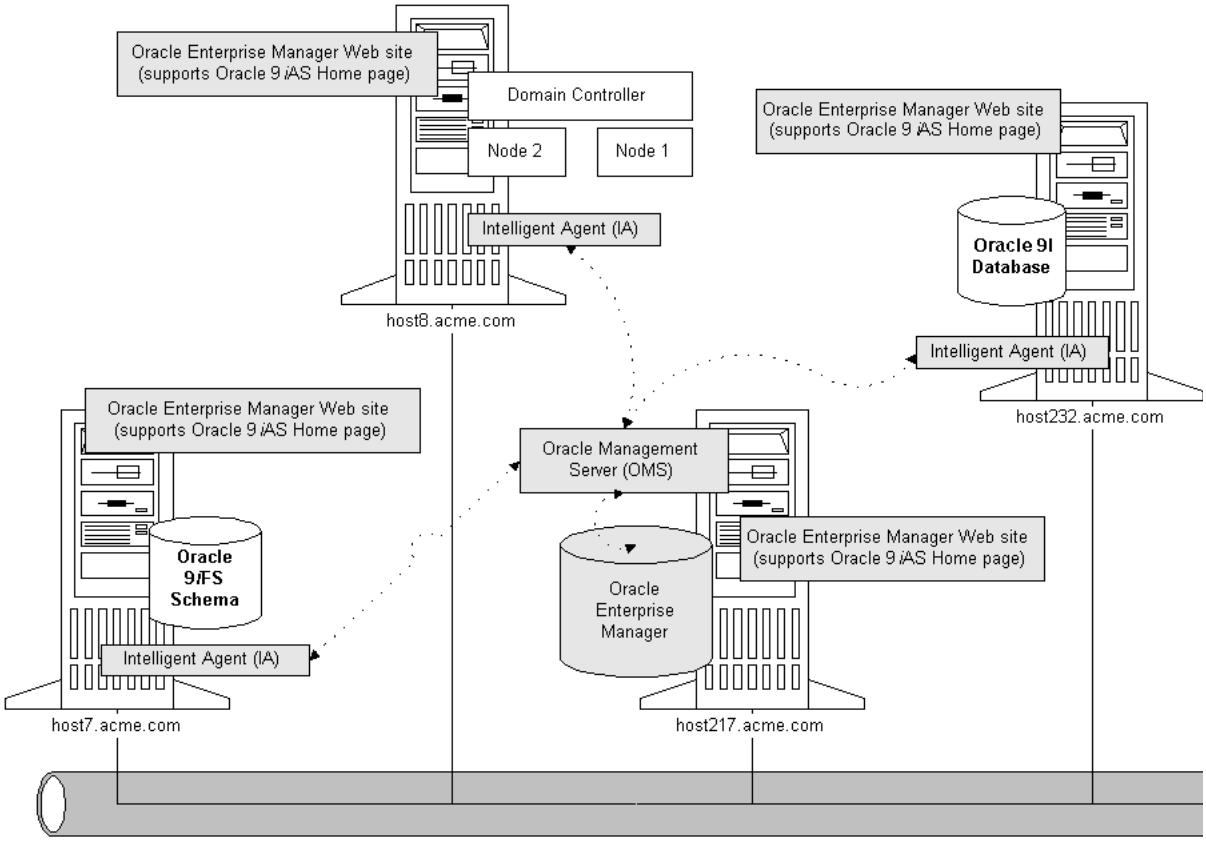
the domain controller, and then start the domain, from anywhere on your network (see *Oracle Internet File System Setup and Administration Guide* for details).

To use Oracle Enterprise Manager "fixit" jobs and other features of the Oracle Enterprise Manager job subsystem, you must install and configure an Oracle Enterprise Manager repository and run at least one OMS (Oracle Management Server) as detailed in this section.

Basic Concepts

In simple terms, Oracle Enterprise Manager is enterprise-class systems and network management software. Oracle Enterprise Manager encompasses one or more middle-tier Oracle Management Servers. An Oracle Management Server (OMS) sends and receives information from Intelligent Agents (IAs) that reside on the hardware throughout the network. The OMS gathers information from IAs, sends information to IAs, and then sends collected and consolidated information to the Oracle Enterprise Manager repository, which resides in an Oracle database somewhere on the network.

Figure B–8 Oracle 9iFS Is Integrated with Oracle Enterprise Manager



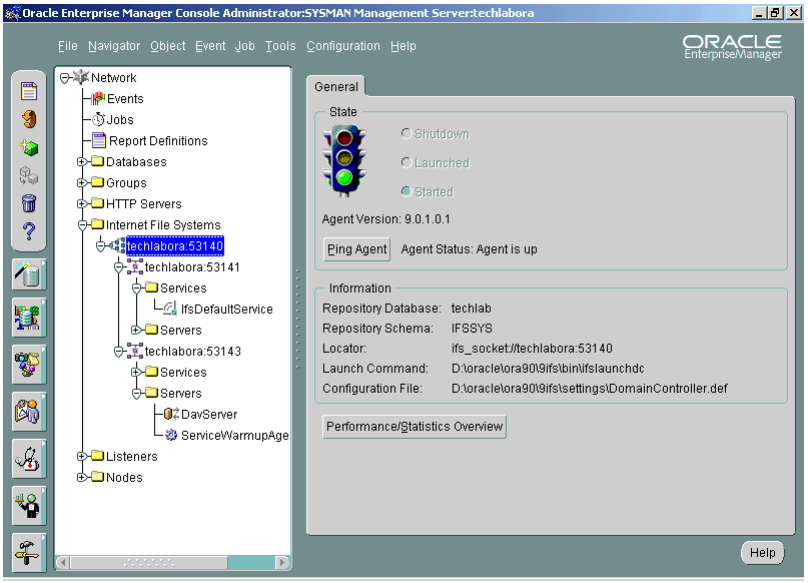
An IA discovers all Oracle services, servers, and other processes running on the server on which it is installed. Oracle Enterprise Manager can also detect failed domain controller and node processes and trigger Oracle Enterprise Manager "fixit" jobs which send email or automatically start these processes. For Oracle 9*i*FS nodes, such recovery is in addition to the fault detection provided by the node guardian.

The Java-based Oracle Enterprise Manager Console provides an enterprise-wide view of all systems, including Oracle Internet File System, which you can manage and monitor.

As shown in Figure B–9, Oracle 9*i*FS identifies domain controllers, nodes, and other resources using the Uniform Resource Locator (URL) format: hostname: port number. Figure B–9 shows the default port numbers: the domain is *hostname*:53140; the Oracle 9*i*FS

node displays under that listing as *hostname*:53141, and the HTTP displays as *hostname*:53143.

Figure B–9 Oracle Enterprise Manager Console



Oracle Enterprise Manager Configuration

To set up Oracle Enterprise Manager, log on to the UNIX machine using the account name and password of the user that installed the Oracle database (typically, the `oracle` account).

You will need to know an account name and password that has SYSDBA privileges (`system/manager`, for example) for the database instance. The Enterprise Manager Configuration Assistant wizard will use the credentials you supply to logon to the database and create a schema for the Oracle Enterprise Manager repository (the default is OEM_REPOSITORY) in the existing database.

If the Oracle Enterprise Manager infrastructure, including an Oracle Management Server (OMS) is already installed and configured, you can skip this step. Be sure to note the Administrator account and password for future reference.

1. Launch the Oracle Enterprise Manager Configuration Assistant (EMCA) from a shell prompt by entering the following:

```
$ $ORACLE_HOME/bin/emca
```

2. In a few seconds, the Welcome page displays. On the Welcome page, click Next to continue. The Configuration Operation page displays.
3. On the Configuration Operation page, choose "Configure local Oracle Management Server" and click Next to continue.

   If a configuration already exists, a dialog displays prompting you to edit the configuration or create a new configuration. Do not edit an existing configuration unless you know for sure that you should do so.
4. Click the Create button; the Configure Oracle Management Server page displays.
5. On the Configure Oracle Management Server page, select "Create a new repository" and click Next to continue. The Create New Repository Options page displays.

   - If an OMS already exists and you want to create an additional OMS to point to an existing repository, select "Use an existing repository" instead.
6. On the Create New Repository Options page, choose "Custom" and click Next to continue. The Select Database Location page displays.
7. On the Select Database Location page, choose "In another existing database" and click Next to continue. The Select Database for Repository page displays.
8. On the Select Database for Repository page, enter the service name, account name, and password information for the database. The account must have SYSDBA privileges for the database; for example, system/manager. The EMCA wizard uses the information you enter here to connect to the database and then and create the schema for the Oracle Enterprise Manager repository and associated user account and passwords. Be sure that Connect as: SYSDBA is selected.
9. Click Next to continue. The Repository Login Information page displays.
10. On the Repository Login Information page, enter a unique user name (schema) for the Oracle Enterprise Manager repository. The name must be unique throughout the network. The Intelligent Agents of Oracle Enterprise Manager send information to the OMS by means of the repository name, so more than one Oracle Enterprise Manager repository with the same name will cause addressing problems.
11. Click Next to continue. The Select Repository User Tablespaces page displays.
12. On the Select Repository User Tablespaces page, select the default to Create a new OEM_REPOSITORY tablespace and click Next to continue. The Create Repository Summary page displays, summarizing all the configuration details that you've entered

thus far (schema (user) name and password, database target, tablespace name, and so on).

13. Click the Finish button if you're certain of the settings. The tablespace, schema, and a default administration account for the Oracle Enterprise Manager repository is created.

The process may take several minutes to complete. When it's finished, you will have an Oracle Management Server (OMS) and an Oracle Enterprise Manager repository on the machine.

To use this OMS for Oracle 9*i*FS, you must install the complete Oracle 9*i*FS installation or the Administration-only configuration on this machine, and you must then run the ifsomssetup script on this machine to register Oracle 9*i*FS with the Oracle Enterprise Manager/OMS job subsystem.

14. Run the ifsomssetup script to register the OMS with the job[1] system of Oracle Enterprise Manager. If OMS is running on a machine other than where Oracle 9*i*FS is configured, you must install and configure the Administration-only option of Oracle 9*i*FS on the OMS machine in order to obtain the necessary software. Running ifsomssetup is a one-time task.

```
$ ifsomssetup
```

You'll be prompted for the entries below, a line at a time.

```
Please type in the following:
OEM Repository Schema Name:
OEM Repository Schema Password:
OEM Repository TNS Name :
```

The entries refer to items L, M, and G, respectively, from the User Account and Password Summary Tables in Appendix C, "Configuration Worksheets".

When you successfully execute the ifsomssetup script, the console displays the following:

```
..10%..20%..100%
Finished the oemctl setup process
```

15. Restart the OMS by running the following command:

```
$ oemctl start oms
...
Starting the Oracle Management Server....
```

[1] If you don't want to use the job subsystem of Oracle Enterprise Manager for fixit and other jobs and events, you do not have to run the ifsomssetup script.

```
The OMS is now started and ready.
```

16. Now you can start Oracle Enterprise Manager Console:

    ```
    $ oemapp console
    ```

    In a few seconds, the Oracle Enterprise Manager Console login dialog displays.

17. Select the "Login to the Oracle Management Server" radio button; do not launch standalone. (Launching standalone enables you to manage databases only, not any additional Oracle software.)

    The first time you attempt to logon to Oracle Enterprise Manager through a connection to OMS (if Oracle Enterprise Manager has just been installed, that is), you are prompted to change the password for OMS administrator `sysman` from the default initial password, `oem_temp`.

    - Change the password if you're prompted to do so, and make note of it for future reference. This refers to Item O from the tables in Appendix C, "Configuration Worksheets". Or, if you already changed the password for `sysman`, enter it now.
    - Make sure the Management Server (OMS) that you configured for use with Oracle 9*i*FS is selected in the drop-down, or select it if necessary.

18. Click OK when you are finished with the entries. In a few seconds, the Oracle Enterprise Manager Console displays.

19. From the Oracle Enterprise Manager Console menu, select Discover Nodes from the Navigator. The Oracle Enterprise Manager Discovery wizard displays. Click Next to get past the welcome screen. A large empty text box displays.

20. Type in the hostname (or IP address) of your machine and then click Next. In a few seconds, the wizard should discover the node and display its status in the window. Click Next and Finish to close the display and return to the Oracle Enterprise Manager Console. You should now see *Internet File Systems* listed in the navigation tree of the Oracle Enterprise Manager Console.

21. Under Internet File Systems, select the domain controller (by default, *hostname:53140*). With this object selected, right-mouse-click to pop-up the menu and select Start Domain... from the menu. (Alternatively, with the object selected, you can select Start Domain... from the Object menu.) You are prompted for several names and passwords:

    - Host / Node Credential Information: *Host* is the name of the machine on which you've installed Oracle 9*i*FS. For the username and password, enter `root` and the password for the UNIX box. (See Item C in the tables in Appendix C.)

- Start the 9iFS domain: Under the Start the Domain Controller, enter the Oracle 9*i*FS schema password. (See Item V in the tables in Appendix C.)
- Under the Launch the 9iFS nodes in the domain, the "System Administrator" is the `system/manager9ifs` combination for the Oracle 9*i*FS schema (*IFSSYS* is the default Oracle 9*i*FS schema name. See Item U in the tables in Appendix C if you did not accept the default schema name.)

You can save these entries as Preferred Credentials by clicking the checkbox in this dialog box, but be aware that if you do, anyone accessing the Oracle Enterprise Manager Console will be able to run jobs and perform any tasks without having to enter the machine's root password (or any other administration accounts and passwords that you save in this way). Unless you have complete physical control over this machine, this may be not be as secure as not saving the preferred credentials. Not saving simply means that you must enter them each time you attempt to access the function, in this case, the Oracle 9*i*FS Manager.

If you have trouble getting the domain and the nodes launched, it's usually because of an incorrect account and credential combination:

- Check the Preferred Credentials page in the Oracle Enterprise Manager Console (go to the Configuration-->Preferences menu, then select the Preferred Credentials tab). You'll see the Oracle 9*i*FS Domain Controller, Oracle 9*i*FS Node and other objects that Oracle Enterprise Manager is managing listed in the display.

The domain, Oracle 9*i*FS nodes, and HTTP nodes should display as operational (a green light) in the Oracle Enterprise Manager Console. See the *Oracle Internet File System Setup and Administration Guide* for details about all Oracle 9*i*FS administration tasks.

Administration-Only Configuration

These instructions presume that an Oracle 9*i*FS domain already exists, and that you want to configure a machine elsewhere on the network for use as an administration console (using Oracle Enterprise Manager Java-based Console) for managing an Oracle 9*i*FS instance.

1. Install and configure one of the Oracle9*i* Application Server, Application Server, option A from the Oracle9*i* Application Server CD.
2. Remove the Oracle9*i* Application Server software CD and insert the Oracle 9*i*FS software CD.
3. Install the Oracle 9*i*FS software from the CD. At the end of the Oracle Universal Installer process, the Oracle Internet File System Configuration Assistant launches. The Welcome page displays.
4. Click the Next button to close the Welcome page and begin the configuration process. The Select Oracle Database page displays.

5. On the Select Oracle Database page, select 9iFS Administration Configuration (monitor servers only) as the configuration type.
6. Click the Next button to continue. The Oracle Internet File System Configuration Assistant wizard has all the information it needs for configuration, so the Begin Oracle 9*i*FS Configuration page displays.
7. Click Configure to configure the machine. When the configuration process completes, a list of tasks displays in the Oracle 9*i*FS Configuration Complete page. These tasks pertain to the nodes on which Oracle9iFS server software is installed, not to the Administration console, so you can disregard the message text as far as this machine is concerned.

You can now launch the Oracle Enterprise Manager and re-discover the nodes in the Oracle 9*i*FS domain. An Internet File Systems item should display in the Oracle Enterprise Manager Console, and if you click on this item, the Oracle 9*i*FS domain should display under this item, showing the *hostname:53140* (default port number).

C

Configuration Worksheets

User Account and Password Summary Tables

During installation and configuration of Oracle 9*i*FS and related components (such as the Oracle9*i* Database Server, Oracle Internet Directory, or Oracle Enterprise Manager), you must enter various schema (user) names, passwords, and the like. You can use the tables in this section to keep track of the information that you create during a full installation and configuration, or to gather them in advance if some of the components are already installed and configured. See the *Oracle9i Application Server Installation Guide* for additional information.

CAUTION: **If you use this Appendix to document any settings in your environment, be sure to keep it in a completely secure place, or destroy it.**

The alphabetical item references in the tables are used in various places throughout this guide to assist you in entering the appropriate name/password combinations.

Oracle9*i* Database Server Administration Reference

Item	Object	Description or Usage Note	Default Value or Password	Your Setting
A	Hostname	Name of the machine on which you're installing the product. Fully qualified names such as *host1.yourcompany.com*	No default.	
B	IP address	Identifies the host at the network card level. Used by Mac clients to initially connect to the AFP Server.		
C	UNIX root account	Super-user account. Required to initially setup the machine for Oracle installation, and by Oracle Enterprise Manager to run OS jobs.	No default.	
D	Oracle home	Directory path into which Oracle software gets installed. Displays in Oracle Universal Installer as "OracleHome," "OracleHome1," and so on, depending on how many Oracle homes are on the machine already, if more than one.		
E	Global database name	Uniquely identifies the database throughout the network, in the format *database_name.database_domain*, where database_domain name maps to the network domain, such as *yourDB.yourcompany.com.*	No default.	
F	System identifier (SID)	Identifies a specific instance of the Oracle database.	Defaults to *database_name* portion of the global database name.	
G	Service name	Created during database configuration. Sometimes called *TNS name* or *Local service name*.	No default.	
H	`SYS`	An important schema created during installation of the database. Owns the data dictionary.	`change_on_install`	
I	`SYSTEM`	Default database administrator account that has privileges on SYS schema objects.	`manager`	

Oracle9*i* Application Server Administration Reference

Item	Object	Description or Usage Note	Default Value or Password	Your Setting
J	Instance name	Name of the Oracle9*i* Application Server instance. You create this during Oracle9*i* Application Server configuration.	No default.	
K	`ias_admin`	Management account for the Oracle9*i* Application Server instance. You will use this account and password to logon to management server.	No default. You create your own during configuration of Oracle9*i* Application Server.	

Oracle Enterprise Manager Administration Reference

Item	Object	Description or Usage Note	Default Value or Password	Your Setting
L	Database instance	Name of the database into which you want to create the Oracle Enterprise Manager repository. Can be the same database instance or a different database than that used for other products.	No default.	
M	Schema name	Called "OEM Repository" in Oracle Enterprise Manager configuration dialogs. Owner of all Oracle Enterprise Manager database objects.	`OEM_`*`hostname`*	
N	Schema password	Password for the Oracle Enterprise Manager schema (L).	No default. Created during configuration.	
O	`sysman`	User account with privileges on OMS (Oracle Management Server), middle-tier server that works with Oracle Enterprise Manager.	`oem_temp` You are prompted to change this at first logon to OMS from Oracle Enterprise Manager Console.	
P	Tablespace name	Default tablespace into which to store all Oracle Enterprise Manager data.	OEM_REPOSITORY	

Oracle Internet Directory Administration Reference

Item	Object	Description or Usage Note	Default Value or Password	Your Setting
Q	Database instance	Name of the database instance for the Oracle Internet Directory. See *Oracle Internet Directory Administrator's Guide* for complete information about Oracle Internet Directory.	No default.	
R	Schema name	Owner of all Oracle Internet Directory database objects.		
S	`orcladmin`	User account with administration privileges on the Oracle Internet Directory.	`welcome`	
T	Tablespace name	Default tablespace in which all Oracle Internet Directory data is stored.		

Oracle Internet File System Administration Reference

Item	Object	Description or Usage Note	Default Value or Password	Your Setting
U	Schema name	Owner of all Oracle Internet File System objects in the database.	IFSSYS	
V	Schema password	Password for the Oracle Internet File System schema. You must create one during the configuration.	No default.	
W	`system`	Default Oracle 9*i*FS administrative user. Has privileges on IFSSSYS schema objects (IFSSYS tablespace, tables, views, and so on).	`manager9ifs`	
X	TNS name	Variously referred to as *local service name* or simply, *Service name* in other Oracle products. Use the same name as that entered for item G above. In a multiple machine Oracle 9*i*FS configuration, all Oracle 9*i*FS nodes must use the same service name.	No default.	

Index

Symbols

A

B

C

D

E

F

G

H

I

L

M

N

O

P

Q

R

S

T

U

V

W