

## **Oracle® Files**

Administrator's Guide

Release 2 (9.0.4.1)

**Part No. B10872-01**

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Oracle Files Administrator's Guide, Release 2 (9.0.4.1)

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## **Oracle Files Administrator's Guide Release 2 (9.0.4.1)**

### **Part No. B10872-01**

Oracle Corporation welcomes your comments and suggestions on the quality and usefulness of this document. Your input is an important part of the information used for revision.

- Did you find any errors?
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If you have problems with the software, please contact your local Oracle Support Services.



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# Preface

Part of the Oracle Collaboration Suite, Oracle Files is a hosted content management application that supports user collaboration and file sharing. Oracle Files provides a sophisticated, Web-based user interface that enables users to easily share files of any kind with others in a workspace or across an enterprise.

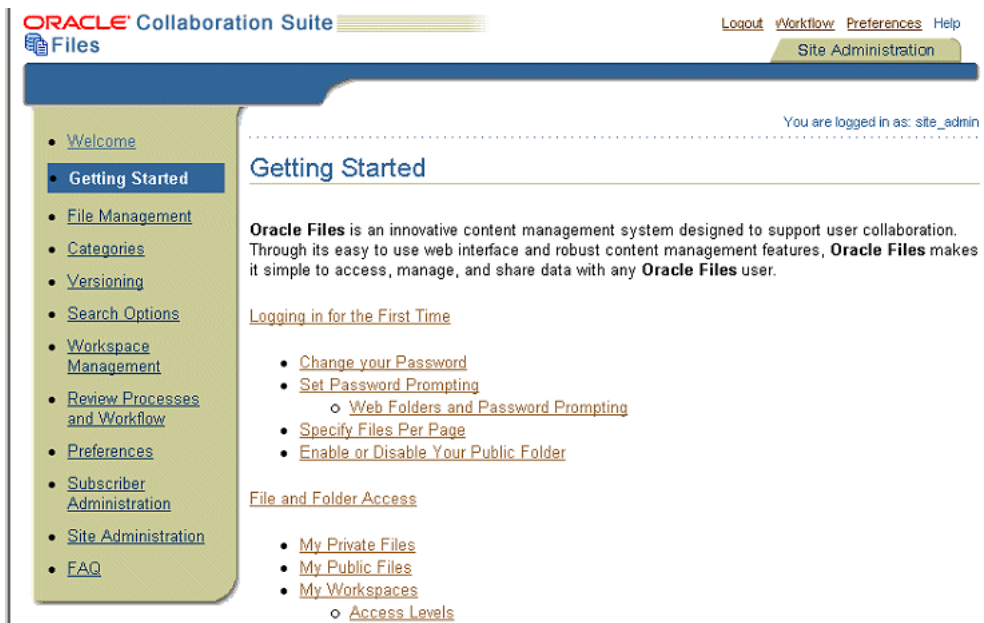
Oracle Files runs with Oracle9i Application Server and an Oracle9i database and provides a highly scalable content management repository. This guide describes administration functions for Oracle Files.

## Intended Audience

This guide is for System Administrators, Site Administrators, Subscriber Administrators, or anyone involved in configuring, running, and maintaining an Oracle Files instance.

Additional information for administrators can be found in the Oracle Files online help. To access online help:

1. On any Oracle Files page, click the Help icon. A table of contents appears.
2. You can only view topics for administrators if you are logged in as an administrator. Subscriber Administrators can view the Subscriber Administration topic link; Site Administrators can view both the Subscriber Administration and Site Administration topic links.



Online help is also available in Oracle Enterprise Manager. To access Oracle Enterprise Manager online help:

1. On any Oracle Enterprise Manager page, click **Help**. A table of contents appears.
2. Click **Managing Oracle Files**. The Oracle Files-specific help appears.





## Documentation Accessibility

Our goal is to make Oracle products, services, and supporting documentation accessible, with good usability, to the disabled community. To that end, our documentation includes features that make information available to users of assistive technology. This documentation is available in HTML format, and contains markup to facilitate access by the disabled community. Standards will continue to evolve over time, and Oracle Corporation is actively engaged with other market-leading technology vendors to address technical obstacles so that our documentation can be accessible to all of our customers. For additional information, visit the Oracle Accessibility Program Web site at <http://www.oracle.com/accessibility/>

**Accessibility of Code Examples in Documentation** JAWS, a Windows screen reader, may not always correctly read the code examples in this document. The conventions for writing code require that closing braces should appear on an otherwise empty line; however, JAWS may not always read a line of text that consists solely of a bracket or brace.

# Structure

This guide contains these chapters and appendices:

## [Chapter 1, "Oracle Files Concepts"](#)

Introduces the components of Oracle Files, functions, and administration concepts and terminology. Also summarizes the key Oracle technologies with which Oracle Files is integrated.

## [Chapter 2, "Oracle Files Protocol Support"](#)

Discusses the protocols supported by Oracle Files and shows how to specify access paths for the client software.

## [Chapter 3, "Oracle Files Administrative Roles and Tasks"](#)

Describes the administrative roles and the basic tasks associated with each role.

## [Chapter 4, "Administration Tools Overview"](#)

Provides an overview of the tools provided to administer Oracle Files, including the bulk administration tools.

## [Chapter 5, "Administrative Operations in Oracle Enterprise Manager"](#)

Covers runtime processes such as starting and stopping the domain controller, domains, and nodes. Shows how to monitor domain and node performance.

## [Chapter 6, "Maintenance and Tuning"](#)

Discusses several methods for optimizing performance and scalability.

## [Chapter 7, "Customizing Oracle Files"](#)

Discusses branding the Oracle Files user interface and creating custom workflows.

## [Chapter 8, "Troubleshooting"](#)

Provides information for solving administrative and globalization problems.

## [Appendix A, "Oracle Text Reference"](#)

Explains strategies for maintaining the Oracle Text index.

## [Appendix B, "Service Configuration Reference"](#)

Describes the service configuration properties.

## [Appendix C, "Server Configuration Properties"](#)

Describes the server configuration properties.

### [Appendix D, "Migrating Data to Oracle Files"](#)

Provides advice on how to migrate from other file systems to Oracle Files.

### [Appendix E, "FTP Quote Command Reference"](#)

Provides a description, syntax, and example of each FTP Quote command.

### [Appendix F, "Globalization Support"](#)

Contains information on globalization issues.

## Related Documents

For more information, see the following manuals in the Oracle Files, Oracle Collaboration Suite, Oracle9i Application Server, and Oracle9i Database Server documentation sets.

### **Oracle Files**

*Oracle Files Planning Guide*

### **Oracle Collaboration Suite**

- *Oracle Collaboration Suite Installation and Configuration Guide*
- *Oracle Collaboration Suite Quick Installation Guide*
- *Oracle Collaboration Suite Release Notes*

### **Oracle9i Application Server**

- *Oracle9i Application Server Administrator's Guide*
- *Oracle9i Application Server Installation Guide*
- *Oracle9i Application Server Concepts*
- *Oracle Enterprise Manager Concepts*
- *Oracle Internet Directory Administrator's Guide*

### **Oracle9i Database Server**

- *Oracle9i Database Administrator's Guide*
- *Oracle9i Backup and Recovery Concepts*
- *Oracle9i Net Services Administrator's Guide*

- *Oracle9i Globalization Support Guide*
- *Oracle Workflow Guide*

## Conventions

The following conventions are used in this manual:

| Convention    | Description                                                                                                                                                                                                                                            |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>italic</i> | Italicized type identifies document titles.                                                                                                                                                                                                            |
| Monospace     | Monospace type indicates commands.                                                                                                                                                                                                                     |
| <b>bold</b>   | Boldface type indicates script names, directory names, path names, and file names (for example, the <b>root.sh</b> script).                                                                                                                            |
| UPPERCASE     | Uppercase letters indicate parameters or environment variables (for example, ORACLE_HOME).                                                                                                                                                             |
| .<br>.<br>.   | In code examples, vertical ellipsis points indicate that information not directly related to the example has been omitted.                                                                                                                             |
| ...           | In command syntax, horizontal ellipsis points indicate repetition of the preceding parameters. The following command example indicates that more than one input_file may be specified on the command line.<br><br>command [input_file ...]             |
| < >           | In command syntax, angle brackets identify variables that the user must supply. You do not type the angle brackets. The following command example indicates that the user must enter a value for the variable input_file:<br><br>command <input_file>  |
| [ ]           | In command syntax, brackets enclose optional clauses from which you can choose one or none. You do not type the brackets. The following command example indicates that the variable output_file is optional:<br><br>command <input_file> [output_file] |
| { }           | In command syntax, curly brackets indicate that a choice of two or more items separated by a vertical bar or pipe (   ). You do not type the curly brackets. The following command example indicates a choice of either a or b:<br><br>command {a   b} |

| Convention | Description                                                                                                                                                                           |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| \$         | The dollar sign represents the shell prompt in UNIX. <sup>1</sup>                                                                                                                     |
| /          | A forward slash is used as a separator in pathnames, except where a given path is specific to the Windows platform. Windows users should always type pathnames using a backslash (\). |

<sup>1</sup> In examples, an implied return occurs at the end of each line, unless otherwise noted. You must press the [Enter] key at the end of a line of input.



---

# Oracle Files Concepts

Oracle Files is designed as an enterprise file server replacement, with added content management features (for example, versioning) that enable users to collaborate more productively. All content is stored in an Oracle database.

No additional client software is required, unless you choose to run Oracle FileSync, the file synchronization tool. Oracle FileSync must be installed separately on each client in order to be used.

Oracle Files provides:

- Support for file-sharing and collaboration protocols.
- A Web user interface designed for large-scale deployments.
- Workspace-based collaboration.
- Content management features like extensible metadata, versioning, and content-based searching.
- Workflow integration for approval and routing.
- User and administrator options for single file recovery.
- Scalability, reliability, security, and platform independence.

These features and capabilities are designed to help IT managers lower costs through file server consolidation while simultaneously making employees more productive.

This chapter discusses basic concepts you should understand when administering Oracle Files. Topics include:

- [Oracle Files Architecture](#)
- [Oracle Files Features](#)

- [Integration with Key Oracle Technologies](#)

## Oracle Files Architecture

The following sections describe the technology underlying Oracle Files, as well as how the domain controller, nodes, and other processes interact. It also provides information about Oracle Internet Directory and the Oracle Files Subscriber model.

### Built With Oracle Content Management SDK

Oracle Files was built using the Oracle Content Management Software Development Kit (Oracle CM SDK), a robust development platform for content management applications. It provides a set of Java APIs for versioning, check-in/check-out, security, searching, extensible metadata and other standard content management operations.

You can find more information about Oracle Content Management SDK at:

<http://otn.oracle.com/products/ifs>

### The Oracle Files Domain

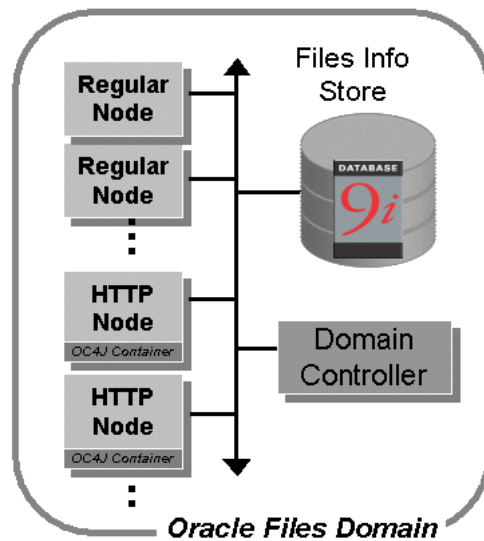
An Oracle Files *domain* is a logical grouping of Oracle Files nodes, running under the control of the domain controller process, and an Oracle9i database instance (called the "Files Information Store") that contains the Oracle Files data.

#### Oracle Files Schema

The Oracle Files schema is created in an Oracle database during the configuration process. The schema owns all database objects, including metadata about Oracle Files and configuration information (see [Figure 1-1](#)).

An Oracle Files node is the application software that comprises the product, along with the underlying Java Virtual Machine (JVM) required to support the software at runtime. The Oracle Files domain controller process (the "domain controller") controls and manages the nodes making up the domain.



**Figure 1–1 The Oracle Files Domain**

## Oracle Files Nodes

Important concepts to understand about nodes include:

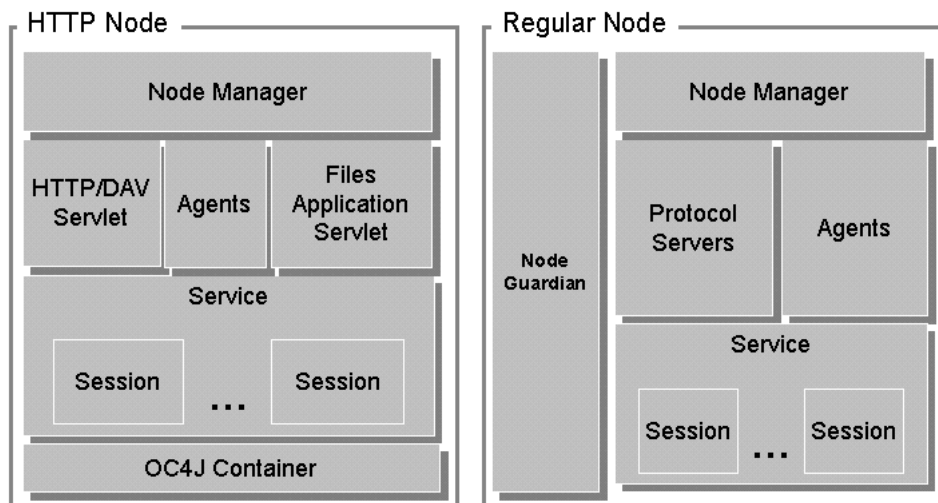
- An Oracle Files domain encompassing any number of nodes is controlled by one (and only one) domain controller process.
- An Oracle Files domain includes two nodes by default: one regular node, and one HTTP node (see [Figure 1–2](#)). You can also configure additional nodes on the same machine or on additional machines.
- The regular node supports protocol servers, such as AFP, FTP, NFS, and SMB, as well as agents, such as the Garbage Collection Agent.

Each regular node is monitored by a node guardian process, which automatically attempts recovery when error conditions occur. This means that the regular node has built-in fault tolerance.

- The HTTP node supports the Oracle Files application, portlet, Oracle FileSync, and WebDAV by means of servlets that are configured to work with the Oracle9iAS Containers for J2EE (OC4J).

The HTTP node is not guarded by a separate guardian process. However, administrators can use Oracle Enterprise Manager Web site to monitor the HTTP node and re-start it when necessary.

**Figure 1–2 Oracle Files Nodes**



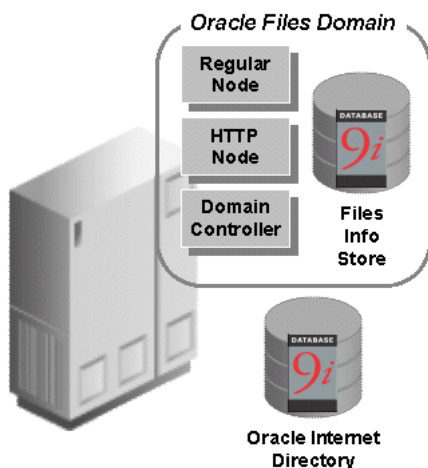
The relationship between the domain, the Oracle Files schema, and the domain controller is 1:1:1. However, the Oracle Files domain is a *logical* construct, not a physical one, which means that the Oracle Files domain controller process, node processes, and the database itself can be physically configured on a single host machine, as shown in [Figure 1–3](#), or across several, separate hosts, as shown in [Figure 1–4](#).

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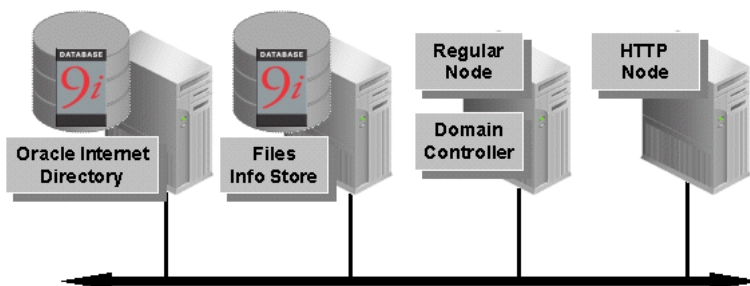
**Note:** For information about hardware requirements and sizing guidelines for Oracle Files, see the *Oracle Files Planning Guide*.

---

**Figure 1–3 A Single-Machine Oracle Files Deployment**



**Figure 1–4 A Multiple-Machine Oracle Files Deployment**



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**Note:** If you choose the single-machine configuration illustrated in [Figure 1–3](#), you must ensure that your server meets the recommended hardware requirements for all components. Be aware that administration is more complex in a single-machine environment. In most cases, you should install Oracle Internet Directory on a separate machine.

---

With appropriate network load balancers and machine configuration, users may not be aware of whether the Oracle Files instance is running on one machine or across

several machines. Users access content, such as folders and documents, using the appropriate client application for a particular Oracle Files protocol server.

Macintosh users can connect to Oracle Files through AFP using the Mac Chooser, the same client they use to connect to Macintosh-based AppleShare servers.

Windows users can map a network drive (SMB or NTFS), or they can use the Web Folders feature (WebDAV) of Window's Map Network Drive dialog. UNIX and Windows clients can connect using NFS. Macintosh, UNIX, and Windows clients can connect through FTP or HTTP. See the *Oracle Collaboration Suite Release Notes* for specific client certifications.

Windows users can take advantage of Oracle FileSync, a file synchronization client program that lets you work offline (in disconnected mode) and then synchronize your file changes with a remote Oracle Files server.

When a user connects to a specific protocol server, the underlying service on the node manages authentication of that end user by means of the associated Oracle Internet Directory credential manager, and manages the connection to the database where the content is actually stored.

## Services, Servers, and Agents

Each node supports a *service* with specific configuration parameters, such as language, default character set, credential managers, connections to the database, and cache sizes.

The service, in turn, supports the *servers*. Each server is either a protocol server or an agent. The protocol servers listen for requests from clients on a specific Internet Protocol (IP) port and respond to requests according to the rules of the protocol specification. By default, each protocol server listens on the industry-standard well known port (for example, FTP listens on port 21) and adheres to the specification of the protocol server. Each protocol may interact with Oracle Files in a different way. For example, when uploading a file, FTP just inserts the file, while SMB creates a 0-byte dummy version of the file before creating the actual file.

Agents are similar to 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 Content Garbage Collection Agent, which is installed automatically during configuration, deletes objects no longer associated with any document in Oracle Files. It does so based on an activation period parameter that you set for the server configuration object. See [Appendix C, "Server Configuration Properties"](#) for more information. If you don't configure the Garbage Collection Agent to run, performance of your Oracle Files instance can be adversely affected.

All the shipped agents must be run to ensure a healthy system. Each agent must be run only on a single node. Different agents can run in different nodes.

The Oracle Files architecture is flexible: services and servers are de-coupled so that you can configure services, protocol servers, and agents across a wide array of hardware to best meet your business needs. For example, you can run all protocol servers on one node, and run all agents on another node.

By default, a single service starts on each node, and that service supports all protocol servers selected during installation.

Given the flexibility and granularity of the deployment options, it is important to think about the physical configuration before you install and configure the system. You should plan how the various processes that comprise the system—the domain controller, nodes, agents, and so on—will be configured across your hardware.

The Oracle Files Configuration Assistant sets up an initial domain and node configuration for you, but you can change this later. You can configure the protocol servers at any point by using the Oracle Enterprise Manager Web site.

For 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) for English. You could also create a separate node to accomplish this.

See [Appendix B, "Service Configuration Reference"](#) for more information about viewing or modifying service configuration parameters.

## Oracle Internet Directory

An Oracle Files service handles user authentication by means of a credential manager. A user's credentials authenticate the user to the system being accessed (for example, any one of the Oracle Files protocol servers). The credential manager associated with the service tells the service where and how to obtain the credential.

Oracle Files uses Oracle Internet Directory for its identity management directory (in other words, for its list of users and passwords). During configuration of Oracle Files, you use the Oracle Files Configuration Assistant to select an Oracle Internet Directory server to be used with Oracle Files.

When an Oracle Internet Directory credential manager is created during installation, it is created with these default characteristics:

- Ability to accept the following credentials for authentication:
  - Cleartext

- SMB Challenge/Response
- HTTP Digest
- Token
- Protocols that only support Cleartext authentication (AFP, FTP) use the Oracle Files-specific password, rather than the default Oracle Internet Directory password, for enhanced security. Other protocols use the default Oracle Internet Directory password, also known as the Single Sign-On password.

To administer the Oracle Internet Directory associated with Oracle Files, use Oracle Directory Manager and other associated Oracle Internet Directory management tools. See the *Oracle Internet Directory Administrator's Guide* for more information.

## The Subscriber Model

In Oracle Files, a Subscriber is an organizational entity whose users collaborate. Oracle Files Subscribers are based on Oracle Internet Directory Subscribers. The Site Administrator chooses which Subscriber to associate with the Oracle Files domain during Oracle Files configuration.

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**Note:** Because you must use Single Sign-On (SSO) for Oracle Files, and because of current SSO limitations, you can have only one Oracle Files Subscriber.

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The Oracle Files Subscriber has a designated Subscriber Administrator to manage quota, specify Subscriber settings, and perform other tasks. See [Chapter 3, "Oracle Files Administrative Roles and Tasks"](#) for more information about the different types of administrators in Oracle Files.

## Oracle Files Features

Oracle Files administrators should be familiar with the following key features:

- [Three Levels of Administration](#)
- [Workspaces](#)
- [File Management](#)
- [Searching](#)
- [Categories](#)

- [Versioning](#)
- [Review Process](#)
- [Trash](#)
- [Edit-in-Place](#)
- [File Synchronization](#)

## Three Levels of Administration

There are three different administrative roles in Oracle Files:

- The System Administrator is responsible for managing the Oracle Files domain by starting and stopping the domain controller, nodes, services, and servers, and tuning the system to ensure reliability and performance.
- The Site Administrator is responsible for creating, modifying, and deleting Subscribers, as well as registering custom workflows.
- The Subscriber Administrator, an enhanced user, is responsible for managing quota, specifying Subscriber settings, administering users, restoring files from the Archive, and administering categories.

Each administrative role does not have to be filled by a different person. In some cases, a single user may act in multiple roles. In addition, each role has a different set of access permissions. See [Chapter 3, "Oracle Files Administrative Roles and Tasks"](#) for more information about the different types of administrators in Oracle Files.

## Workspaces

A *workspace* is where a selected group of Oracle Files users store and collaborate on files and folders. The content of a workspace is visible and editable only by its members. A workspace includes at least one administrator, and can include participants and viewers.

### Workspace Access Levels

- **Workspace Administrator.** The role of the Workspace Administrator is to manage the workspace. The management role includes such functions as adding and removing workspace members, modifying member access, requesting more workspace quota, and specifying the visibility and workspace type. The Workspace Administrator has full access to the files and folders of the

workspace, and can unlock files that have been locked by other workspace members.

- **Participant.** A workspace participant can edit the contents and properties of files and folders in the workspace. A workspace participant can copy and move items to and from the workspace, and can delete files and folders from the workspace, and the workspace's Trash folder.
- **Viewer.** A workspace viewer is restricted to viewing workspace files and folders.

### Workspace Quota

Each workspace is allocated a quota. The contents of each workspace, including its Public folder and Trash folder, count against the workspace's allocated quota. Exceeding the workspace's quota prevents the workspace members from storing additional content into the workspace. The workspace's administrators can, however, request that the Subscriber Administrator increase the workspace's quota.

See "Workspace Management" in the online help for Oracle Files for detailed information.

## File Management

Each user has a Public folder where he or she can store files, viewable by all users in the Subscriber.

Each user has a Private folder where only he or she can access, store, and view files.

See "File Management" in the online help for Oracle Files for detailed information.

## Searching

Users can conduct simple or advanced searches. Advanced searching lets users refine and combine search criteria.

See "Search Options" in the online help for Oracle Files for detailed information.

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**Note:** In addition to the Oracle Files search feature, Oracle Collaboration Suite users can take advantage of Oracle Collaboration Suite Search, an application that lets users search any and all configured applications in the Oracle Collaboration Suite. See "[Oracle Collaboration Suite Search Configuration](#)" on page 5-30 for more information.

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## Categories

By associating categories with files or folders and modifying the attributes of a category, users can organize and classify their information. Users can also search for files by category.

See "Categories" in the online help for Oracle Files for detailed information.

## Versioning

Users can retain a history of file modifications by creating and saving one or more snapshots of a file.

See "Versioning" in the online help for Oracle Files for detailed information.

## Review Process

Users can submit files for review to a specified set of reviewers. These reviewers fall into two categories: Approvers, who can approve or reject the file, or simply Reviewers, who have read-only access to the file.

The backbone of a review process in Oracle Files is Oracle Workflow. Using a review process, any workspace member can submit for review one or more files from their workspace to other members of their workspace. A review process ends in the approval or rejection of these files, or the process can expire or be canceled. Members can either be Approvers or Reviewers of a review process:

- **Approver.** After receiving notification from Oracle Workflow that he or she has been asked to approve one or more files, an Approver must either approve or reject the files that have been submitted for review. An Approver cannot approve or reject individual files associated with one review process, but must approve or reject the files as a whole. The workspace member, who initiated the review process, is notified of its approval or rejection.
- **Reviewer.** After receiving notification from Oracle Workflow that he or she has been asked to review one or more files, a Reviewer can review the files. He or she can neither approve or reject files that have been submitted for review.

When you complete the review process, the initiator is notified of the approval or rejection of the files.

See "Review Processes and Workflow" in the online help for Oracle Files for detailed information.

## Custom Review Processes

You can create custom review processes, also called workflow processes, to use in Oracle Files. A *workflow designer*, a person with the necessary skills to design a workflow process in Oracle Workflow Builder, creates the custom workflow process. Then, the Site Administrator registers the custom workflow process with Oracle Files.

See ["Using Custom Workflows in Oracle Files"](#) in [Chapter 7](#) for detailed information.

## Trash

Files deleted in Private and Public folders are moved to Personal Trash. Files deleted in workspaces are moved to a corresponding Trash folder. A user can request that the Subscriber Administrator restore files that have been emptied from their trash, or from the trash of Workspaces in which they collaborate.

See "File Management" in the online help for Oracle Files for detailed information.

## Edit-in-Place

Using Microsoft Web Folders, Windows users can open and edit an Oracle Files workspace file and save their changes directly back to Oracle Files. When a user opens a workspace file from Microsoft Web Folders to edit in Microsoft Office, the file is automatically locked in Oracle Files. Any changes made to the file are automatically saved back to Oracle Files. When the user closes the file in Microsoft Office, the file is automatically unlocked in Oracle Files.

See "File Management" in the online help for Oracle Files for detailed information.

## File Synchronization

Oracle FileSync synchronizes all file changes between a local machine and Oracle Files, ensuring that the contents of selected local folders and remote folders match.

See ["Oracle FileSync Client Software"](#) on page 2-3 for information about how to install Oracle FileSync. Consult the online help for Oracle FileSync for information about how to synchronize your files.

## Integration with Key Oracle Technologies

Oracle Files, a part of the Oracle Collaboration Suite, is middle-tier software that leverages the capabilities of both Oracle9i Database Server and Oracle9i Application Server.

### Integration With Oracle Collaboration Suite

Oracle Collaboration Suite is an integrated suite of enterprise information management products. It provides a number of shared, “cross-product” features such as an integrated portal home page, a consistent web UI look-and-feel, and federated search for content across all products.

### Integration with Oracle9i Database Server

Oracle Files uses the database to store all content and metadata.

#### Oracle9i Database and the Oracle Files Schema

All content and metadata about the Oracle Files instance is stored in an Oracle database. These objects include tablespaces, tables, indexes, views, sequences, and procedures owned by the schema (by default, `IFSSYS`) that ultimately provide the underpinnings of the fully functioning system.

There are additional schemas created to ensure secure connectivity to other systems. By default, these schemas are `IFSSYS$CM`, `IFSSYS$DR`, and `IFSSYS$ID`. When you backup or migrate your system, make sure to include these schemas.

User content—word processing files, spreadsheets, sound files, presentations, and other business content—is stored by Oracle Files in the database as LOBs (large objects).

LOBs enable fast access and optimized storage for large amounts of content. The metadata in the Oracle Files schema is stored as standard data types in various tables.

#### Oracle Advanced Queueing

Oracle Advanced Queueing provides an infrastructure for distributed applications to communicate asynchronously using messages. Oracle Advanced Queueing is built into the Oracle9i Database Server.

See ["Using Custom Workflows in Oracle Files"](#) on page 7-4 for information on how Oracle Files uses Oracle Advanced Queueing to integrate with Oracle Workflow.

## Oracle Text

Oracle Text is full-text retrieval technology built into the Oracle9i Database Server for indexing and searching documents stored in the Oracle database. Oracle Text supports mixed languages and character sets in the same index. Oracle Files uses the text indexing and retrieval features of Oracle Text.

## Oracle9i Real Application Clusters (RAC)

A *cluster* is a group of servers that can be used as a single computing system, effectively taking advantage of the combined resources (memory and CPUs) of all the servers in your cluster.

In a traditional single-server configuration, if the server goes down due to a hardware, software, or power failure, the Oracle database instance on the server is not available. The single server has many points of failure.

With Oracle9i Real Application Clusters, if one of the servers in your cluster fails, users are automatically transferred to a remaining live server. This failover operation can occur rapidly, since your shared database is already up and running on the other servers in your cluster, effectively masking server failures from your users.

RAC is based on Oracle's CacheFusion architecture, which provides the ability to share your database on a common set of disks and enables efficient communication between servers. It delivers near-linear scalability as each additional server is added to the cluster.

For more information about setting up Oracle9i Real Application Clusters, consult your database documentation. For more information about setting up Oracle Files for use with RAC, see the Oracle Files section of the *Oracle Collaboration Suite Installation and Configuration Guide*.

## Integration with Oracle9i Application Server

Oracle Files is designed to integrate with several important components from the Oracle9i Application Server product family, including Oracle Internet Directory, Oracle Enterprise Manager Web site, and Oracle9iAS Containers for J2EE (OC4J).

See the *Oracle Collaboration Suite Installation and Configuration Guide* for detailed information on recommended Oracle Files installation and deployment models.

## **Oracle9iAS Containers for J2EE (OC4J)**

Oracle9iAS Containers for J2EE (OC4J) is a J2EE-compliant application server that supports Java Server Pages (JSP), Java servlets, Enterprise Java Beans, and many other APIs from the Java 2 Platform, Enterprise Edition (J2EE). Services are deployed to an OC4J instance using XML-based configuration files as standard .WAR (Web Application Archive), .EAR (Enterprise Application Archive), and .JAR (Java Archive) files. Oracle Files uses the Java Servlet and the runtime environment of OC4J to support the HTTP/DAV servlet, application servlet, and portlet servlet.

OC4J is automatically configured for the Oracle Files HTTP node as part of the Oracle Files configuration process. You can manage OC4J through the Oracle Enterprise Manager Web site.

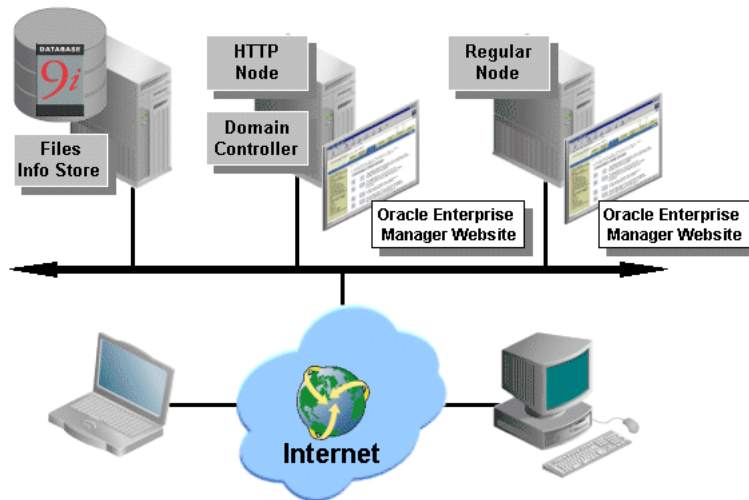
## **Oracle Enterprise Manager**

Oracle Enterprise Manager is systems management software that enables you to manage and monitor Oracle9i Application Server instances and other Oracle server products. Oracle Files uses the Oracle Enterprise Manager Web site to operate and monitor system processes associated with the Oracle Files domain and nodes.

Using a Web browser from anywhere on the network, you can connect to an Oracle9i Application Server instance Web site, from which you can launch the Oracle Files domain controller process, start and stop Oracle Files nodes, and monitor the domain and nodes.

The administration page you see when you access Oracle Enterprise Manager Web site is called the "Oracle9iAS Home page."

**Figure 1–5 Oracle Enterprise Manager Enables Host-by-Host Management**



### Oracle Internet Directory

Oracle Internet Directory is Oracle's LDAP (Lightweight Directory Access Protocol) v.3-compliant directory service implementation. Oracle Internet Directory provides user authentication and other directory-service features to Oracle Collaboration Suite components, including Oracle Files.

For more information about Oracle9i Application Server and its components, see the *Oracle9i Application Server Installation Guide*, *Oracle Internet Directory Administrator's Guide*, and *Oracle Enterprise Manager Concepts*.

### Oracle Workflow

Oracle Workflow is business-process automation software. Oracle Workflow lets you automate the process of routing and approving information, according to business rules you specify. Key components include:

- Oracle Workflow Builder, a modeling tool that lets you define and model your business processes in a graphical environment
- Workflow Engine, which coordinates the routing activities and approvals at runtime
- A notifications system for sending notifications to and receiving notifications from users (such as approvers) in a workflow

- A Web-based graphical monitoring tool for tracking workflow processes

Oracle Files comes with a default workflow process (also called review process) that enables Oracle Files users to submit their documents for review. In addition, a *workflow designer*, a person with the necessary skills to design a workflow process in Oracle Workflow Builder, can create custom workflow processes for Oracle Files. Once a custom workflow process has been created, the Site Administrator is responsible for registering it with Oracle Files.

See "[Using Custom Workflows in Oracle Files](#)" in [Chapter 7](#) for more information about custom workflows.





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# Oracle Files Protocol Support

This chapter discusses the protocol servers supported by Oracle Files, along with the client access paths and software for the supported protocols. Topics include:

- [Industry-Standard Protocol Servers](#)
- [Client Access Paths and Software](#)
- [Using Oracle Files with NFS](#)

## Industry-Standard Protocol Servers

Oracle Files supports a wide range of protocols through its various protocol server implementations, including the following:

- AFP, the AppleTalk Filing Protocol, enables Macintosh users to use Oracle Files as if it were an AppleShare server. MacOS 9.x and above supports AFP over TCP, which allows AFP services to be made available over the Internet and networks that use TCP/IP as the underlying transport.
- FTP, the File Transfer Protocol, is used for file transfers across the Internet.
- HTTP, the Hypertext Transfer Protocol, is used for Web browser-based access. HTTP has been extended with WebDAV, a protocol designed for Internet collaboration. Currently, the most widespread WebDAV client is the Web Folders extension to Windows Explorer, also known as Network Places in Windows 2000/XP.
- NFS, the Network File System, is a mechanism for mounting remote file systems on UNIX platforms.
- NTFS, the NT File System (for Windows NT and Windows 2000), allows you to map a local drive to the Oracle Files repository on the server machine.

- SMB, the low-level server message block file-sharing protocol, lets you map Oracle Files as a network drive or browse to it via the Network Neighborhood.

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**Note:** SMB is only supported when Oracle Files is running on a UNIX or Linux server. When Oracle Files is running on a Windows server, it uses NTFS rather than SMB.

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Users can connect to Oracle Files using protocols appropriate to their platform. For example, Mac users can connect from the Chooser to Oracle Files as if it were any other AppleShare server, Windows users can map a network drive or connect using Web Folders, and UNIX clients can connect using NFS.

The NFS, NTFS, and SMB protocols have the following limitation: 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.

## Oracle Files-Specific Passwords

Some protocols, including AFP and FTP, send unencrypted passwords over the network, which means that if one of these passwords is intercepted, it could provide access to all systems controlled by Oracle Internet Directory for that user. To provide more security, you should create an Oracle Files-specific password (rather than the default Oracle Internet Directory password) to authenticate users of these protocol servers.

Protocols with which to associate the Oracle Files-specific password were selected during Oracle Files configuration. To change the set of protocols that require the Oracle Files-specific password, edit the following service configuration property:

```
IFS.SERVICE.CREDENTIALMANAGER.Oid.IfsPasswordApplications
```

Only the AFP, FTP, SMB, and NTFS protocols may use the Oracle Files-specific password. See ["Changing a Service Configuration"](#) on page 5-20 for information on editing service configuration parameters.

To set Oracle Files-specific passwords, use the Protocol Access page in Oracle Files. See the Oracle Files online help for details.

## Client Access Paths and Software

This section describes the client access paths for various protocols, including AFP, HTTP, and NFS. It also describes how to install the Oracle FileSync client software.

### Oracle FileSync Client Software

In addition to using the networking protocols or client applications native to the Windows operating system, Windows users can install and use Oracle FileSync to keep local directories on a desktop machine and folders in Oracle Files synchronized.

#### Installing Oracle FileSync

Oracle FileSync is a Windows client software application that enables users to keep files synchronized between their local machine and Oracle Files. To install Oracle FileSync, users should follow these steps:

1. Save and exit all Windows applications.
2. Log in to Oracle Files and click **Help**. On the main online help page, click the link in the Oracle FileSync section.
3. Save the install executable to your hard drive.
4. Double-click `FileSync.exe` to run the installation program.
5. Follow the instructions and accept the defaults. The application will be installed in the Windows client machine in the directory:  
`c:\Program Files\Oracle\Oracle FileSync`
6. To start the Oracle FileSync application, select **Oracle FileSync** from the Windows Start -> Programs menu.

### Client Access Paths

With an account name and password, users—administrators or regular end-users—can access Oracle Files using the client tool of their choice. Web users can use a Web browser for HTTP or FTP access; Windows users can map drives or use WebDAV; Macintosh users can use the Chooser to mount AFP (AppleTalk Filing Protocol) protocol server. [Table 2–1](#) lists some of the supported client platforms, access methods, and protocols supported. See the *Oracle Collaboration Suite Release Notes* for complete client certification information.

**Table 2–1 Client Platforms and Protocol Support**

| Client Platform               | Protocols Supported                | Access Using                                                    |
|-------------------------------|------------------------------------|-----------------------------------------------------------------|
| Windows                       | FTP, HTTP, SMB, NTFS, WebDAV, NFS  | Browser, Windows Explorer, Oracle FileSync, Hummingbird Maestro |
| Macintosh                     | AFP, FTP, HTTP, WebDAV (Mac OS 10) | Macintosh Chooser (MacOS 9.x); Macintosh Go... Menu (Mac OSX)   |
| UNIX                          | FTP, NFS                           | mount, link commands                                            |
| Red Hat Linux Adv. Server 2.1 | FTP, NFS                           | mount                                                           |

The following sections provide additional information about client access to Oracle Files.

### **AppleTalk Filing Protocol (AFP) for Mac Clients**

Oracle Files 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 in the following sections.

**From MacOS 9.x Clients** From MacOS 9.x clients, follow these steps:

1. Select **Chooser...** from the Apple menu. AppleShare servers, printers, and other resources appear.
2. Click the AppleShare icon. AppleShare servers appear in the right pane.
3. Click **Server IP Address...** in the lower portion of the dialog. A subsequent dialog appears.
4. Enter the IP address of the Oracle Files machine running AFP Server.

The AppleShare icon appears 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 appears.

3. Enter the address of the Oracle Files machine running AFP Server as a URL, as follows:

afp://machine-name

The AppleShare icon appears on the client desktop.

**HTTP (Web Browser) and WebDAV Access**

HTTP, WebDAV, and Oracle FileSync access to Oracle Files is as follows:

http://<server name>:<port>/files/content

**Note:** The default port is 7777.

The URL is required for access from:

- Web browser
- DAV applications, such as Web Folders
- Oracle FileSync utility

**NFS (Network File System) Protocol**

Oracle Files provides an NFS protocol server that is certified for use with several NFS clients, including:

- Solaris 7 and Solaris 8
- Red Hat Linux Adv. Server 2.1
- Windows NT and 2000 Clients using Hummingbird Maestro NFS

If the Oracle Files NFS server has been configured as the primary NFS server, then UNIX clients (Solaris 7, Solaris 8, and Red Hat Linux Adv. Server 2.1) can access the server using the standard NFS mount command, as shown in [Table 2-2](#).

**Table 2-2 Mount NFS Server (Configured as Primary NFS Server)**

| Syntax                       | Example                     |
|------------------------------|-----------------------------|
| mount <host>:/ <mount_point> | mount ifsserver:/ /data/ifs |

If the Oracle Files NFS server is configured as the secondary NFS server, or if the Oracle Files 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 Clients"](#) and ["Red Hat Linux Adv. Server 2.1 Clients"](#).

Other caveats apply to Hummingbird Maestro clients, as detailed in ["Linking an NFS Directory Using the NFS Maestro Network Access Tool"](#).

**NFS Server Limitations** Permission mode bits used by native UNIX NFS are not used by the Oracle Files NFS protocol server. Instead, as it does with its other protocol servers, Oracle Files NFS uses access control lists (ACLs) to control access. Because of this, displaying the permission mode bits from an NFS client is meaningless.

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**Note:** If Oracle Files is configured to use a schema that is enabled for multiple subscribers, the guest user cannot access any folders using NFS. The guest account is valid only in a dedicated single-subscriber schema.

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The Oracle Files NFS server also does not support:

- UNIX symbolic and hard links.
- UNIX `chown`, `chgrp`, and `chmod` commands.
- UNIX lock manager. Handles returned by the Oracle Files NFS server are not compatible with the UNIX lock manager. Applications requiring UNIX lock manager services will not work with the Oracle Files NFS server.

**Solaris 7 and Solaris 8 Clients** If the Oracle Files NFS server is running as the primary NFS server on the host, users can enter the standard mount command as shown in [Table 2–2](#). If the Oracle Files NFS server is the secondary NFS server on the host, you must explicitly include the port number in the mount command:

```
mount -o port=<portno>,public <host>:/ <mount point>
```

For example:

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

Alternatively, you can enter:

```
mount nfs://<host>:<portno>/ <mount point>
```

For example:

```
mount nfs://ifsserver:4049/ /data/ifs
```

**Red Hat Linux Adv. Server 2.1 Clients** If the Oracle Files NFS server is running as the primary NFS server on the host, users can enter the standard mount command as shown in [Table 2–2](#). If the Oracle Files NFS server is the secondary NFS server on the host, you must explicitly include the port number in the mount command:

```
mount -o port=<portno>,mountport=<portno1> <host>:/ <mount point>
```

For example:

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

**Windows Clients** While client access to NFS is available on all UNIX operating systems, Windows systems require additional client software. Hummingbird Maestro NFS is one such client certified for use with Oracle Files NFS Server.

- Windows 2000 users who want to connect to Oracle Files NFS Server must use Hummingbird Maestro NFS 7.0.
- Windows NT users who want to connect to Oracle Files NFS Server can use Hummingbird Maestro NFS 6.0.

See the *Oracle Collaboration Suite Release Notes* for other supported NFS client applications and version numbers.

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**Note:** Enter the fully-qualified hostname (hostname.yourcompany.com) in the Windows client network configuration for the NFS client. Move the NFS client to the top of the list (network access in Network control panel, if you have more than one NFS client installed) to ensure that its driver is used for the connection.

---

---

**Linking an NFS Directory Using the NFS Maestro Network Access Tool** Before using the Hummingbird NFS Maestro client to access the Oracle Files 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 appears.

2. Enter the host name of the Oracle Files NFS server in the Network Path field, using this format:  
`\\<hostname>\`
3. In the Authentication Details area, enter the UNIX username and password for accessing the Oracle Files 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 is checked. The Oracle Files NFS server is not compatible with the UNIX lock manager.
  - CD-ROM: De-select this box if it is selected. (Used for CD-ROM or other read-only file system.)
5. Click **Advanced** to display the Advanced Connection Properties dialog.
6. Select **Preserve Case for Filename Case**.
7. If the Oracle Files 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 Files NFS server is using.
8. To use TCP instead of UDP for connection to the NFS server, select **Use TCP**. (TCP uses the standard NFS port 2049. Do not select this box if the Oracle Files NFS server is running on an alternate port.)

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

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

For example:

```
nfs link n: \\ifsserver\ scott
```

If the Oracle Files NFS server is the secondary NFS server on the host, you must specify the Oracle Files NFS server port number in the command line, as follows:

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



For example:

```
nfs link n: \\ifsserver\ scott /n:4049
```

The `nfs link` command uses the default values configured for the NFS Maestro Client, unless you specify options listed in [Table 2-3](#).

**Table 2-3 Maestro Command Line Options**

| Option | Meaning                                                      | Usage Note                                                                                                                          |
|--------|--------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| /L:s   | Use DOS-style sharing.                                       | Requires that the <code>hclnfsd</code> daemon run on the server.                                                                    |
| /L:    | Disables locking.                                            | Use this parameter if the server does not have <code>hclnfsd</code> 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 Files 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 2-4](#) lists some common error messages and other Maestro client problems.

**Table 2-4 Maestro Client or Server Error Messages or Problem Symptoms**

| Problem                           | Corrective Action                                                                                                                                                                                                                                                  |
|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| "Access denied by server" message | <p>Check that the correct port number is being used for the Oracle Files NFS server.</p> <p><b>Note:</b> A TCP connection will always use the standard NFS port (2049). Do not use this option if the Oracle Files NFS server is running on an alternate port.</p> |

**Table 2–4 (Cont.) Maestro Client or Server Error Messages or Problem Symptoms**

| <b>Problem</b>                                                | <b>Corrective Action</b>                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| "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 <code>Rpcinfo</code> tool and verify that the NFS server (process number 100003) is running on the host.                                                                                                                                                                                                                                                   |
| Maestro client appears to hang                                | Verify that the <code>hclnfsd</code> 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 <code>'/L: '</code> on the command line when linking to disable locking. (You can check all current mapped drives by using Maestro's <code>nfs use</code> command.). |
| "Network Timeout or HCLNFS/PCNFS not running on Host" message | Verify that the default authentication server has been correctly configured in the NFS client. Verify that the <code>hclnfsd</code> daemon is running. Perform the verifications listed for the <a href="#">"Bad Network Name" message</a> .                                                                                                                                                                                                                     |
| <code>nfs link</code> command hangs                           | Verify that the correct host name and port number are specified and that the Oracle Files 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 Files 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 Files NFS server.                                                                                                                                                                                                                                                                                                                     |

## Using Oracle Files with NFS

Depending on the specifics of your Oracle Files deployment, you may choose to perform the post-configuration task of configuring the NFS Server. This task is not required to get Oracle Files up and running.

## Configuring the NFS Server

There are three different configuration changes you may want to make to the Oracle Files NFS Protocol Server:

- [UNIX-UID-to-Oracle Files-User Account Client Mapping](#). Creates a mapping between UNIX UIDs and Oracle Files user accounts so that users can access Oracle Files after logging on to their UNIX user accounts.
- [Setting Up a Trusted Client List](#). Explicitly grants or revokes access privileges to a specific IP address (or host machine) or domains. The Trusted Client list is an Oracle-specific capability to enhance NFS protocol security.
- [Enabling NIS Authentication](#). If your environment uses NIS for user, group, and password information, you can configure the Oracle Files NFS protocol server to use the NIS server to authenticate users.

In most environments, you should map the UNIX and Oracle Files accounts.

The Trusted Client List and NIS authentication are NFS server configuration properties. UID mapping is specified in a dynamic domain property.

### UNIX-UID-to-Oracle Files-User Account Client Mapping

Oracle Files NFS Protocol Server uses the UNIX system authentication process to authenticate users; that is, the UNIX UID (user identification) number is passed to the Oracle Files NFS protocol server.

Users can log in once to the UNIX operating system, and then access Oracle Files without having to undergo an additional log in process, as long as their UNIX accounts are mapped to Oracle Files accounts.

UNIX-UID to-Oracle Files client mapping is configured in the `IFS.DOMAIN.PROTOCOL.NFS.UidToUserMap` domain property. You can map UIDs manually, through the Oracle Enterprise Manager Web site, or you can upload UIDs using the Java Bulk NFS Tool.

To map UIDs manually:

1. From a Web browser, access the URL to connect to the Oracle Enterprise Manager Web site running on the machine where the Oracle Files domain controller is configured:

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

2. Enter the Oracle9iAS login username and password to continue.

- Enter `ias_admin` as the username with the appropriate password for the Oracle9iAS instance.

The Application Server Home page appears, listing all the Oracle9iAS system components running on the instance, including the Oracle Files domain:

```
ifs_<hostname.companyname.com>:1521:<DBServiceName>:<files schema>
```

3. Click the name of the Oracle Files domain. The Oracle Files top-level page appears, listing the Domain Controller and nodes that comprise the domain.
4. Click **Domain Properties** (under the Configuration heading). The Domain Properties page appears, listing 25 property bundles at a time. Scroll down until you find `IFS.DOMAIN.PROTOCOL.NFS.UidToUserMap` (you may need to move to the second or subsequent page to find this object).
5. Click `IFS.DOMAIN.PROTOCOL.NFS.UidToUserMap`. The Edit page appears. By default, the UID 60001 (default UNIX guest account) is listed on the page.
6. Click **Add** to add a UNIX UID and create a mapping to an Oracle Files user account:
  - Enter the UID in the **Name** field.
  - Enter the Oracle Files user account name in the **Value** field.
  - Leave the **Type** setting as "String."
7. Continue adding users in this manner until you have added all users with UNIX client accounts that will access Oracle Files using NFS.

To map UIDs using the Bulk NFS Tool:

1. On any middle-tier host, ensure that the `CLASSPATH` includes `files.jar`.
2. Run the following Java code with the required values:

```
java oracle.ifs.protocols.nfs.tools.UidLoader SmallServiceConfiguration
system <files system user password>
uidfile=$IFSROOT/test/common/sosd/uidtoname
```

Where `uidtoname` is a flat file you have created with entries of type:

```
<files user>:x:<uidonclient>
```

For example:

```
jsmith:x:44610
```

3. When prompted, enter the name of the Oracle Files domain, in the format:

```
ifs://<host>:<port>:<service>:<schema>
```

4. When prompted, enter the Oracle Files schema password.

### Setting Up a Trusted Client List

You can create a list of trusted clients for Oracle Files to enhance NFS security. You should change these settings in the Configuration Object and then load the server on the service using the modified configuration object so that the client list is used after a restart. (Optionally, you can modify these properties dynamically).

1. From a Web browser, connect to the Oracle Enterprise Manager Web site running on the machine where the Oracle Files domain controller is configured:

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

2. Enter the Oracle9iAS login username and password to continue.

- Enter `ias_admin` as the username with the appropriate password for the Oracle9iAS instance.

The Application Server Home page appears, listing all the Oracle9iAS system components running on the instance, including the Oracle Files domain:

```
IFS_<hostname.companyname.com>:1521:<DBServiceName>:<files schema>
```

3. Click the name of the Oracle Files domain. The Oracle Files top-level page appears, listing the Domain Controller and nodes that comprise the domain.
4. Click **Server Configurations** (under the Configuration heading). The Server Configurations page appears, listing 25 property bundles at a time. Scroll down until you find `NfsServerConfiguration`.
5. Click `NfsServerConfiguration`. The Edit page appears.
6. Scroll down to the Properties section of the page to the `IFS.SERVER.PROTOCOL.NFS.TrustedClientList` and the `IFS.SERVER.PROTOCOL.NFS.TrustedClientsEnabled` properties. (You may need to move to the subsequent page for these properties.)
7. Select the `IFS.SERVER.PROTOCOL.NFS.TrustedClientsEnabled` property and click **Edit**. The Edit Property page appears.
8. Set the **Value** to True. Click **OK** to save the change and return to the Edit page.

9. Select the `IFS.SERVER.PROTOCOL.NFS.TrustedClientList` property and click **Edit**. Specify each entry in one of the following formats:

- **Client address**, specified by a hostname or an IP address, such as `smith.oracle.com` or `130.35.59.9`
- **Domain suffix**, specified as a string starting with a period character, such as `.us.oracle.com`
- **Subnet**, specified as an "@" character followed by an IP address, with an optional subnet bit length (/n) specifying the number of significant bits in the subnet address. Low order zero bytes of the subnet address may be omitted. Examples include `@130.35.68.0`, `@130.35.68`, and `@130.35.68.0/24`.

If an entry is preceded by a hyphen, then that specific client will be denied access through the Oracle Files NFS server.

10. Click **OK** to save the change and return to the Edit page.
11. Click **OK** to save and return to the Server Configuration page.

If the node is currently running, you must either restart the node or load the modified configuration object onto the node.

To reload the node configuration:

1. Return to the Oracle Files top-level page.
2. Click the Node where the NFS protocol server (NfsServer) is running. The Node page appears.
3. Stop the existing NfsServer (if one is already running on the service).
4. Unload this NfsServer.
5. Load the modified NFS protocol server object.
6. Start the new, modified NfsServer.
7. Restart the service.

## Enabling NIS Authentication

NIS (Network Information System) is a centralized management facility that consolidates UNIX password, group, and host file information. It is essentially a distributed database of information that is easier to maintain than individual files (`/etc/group`, `/etc/passwd`, `/etc/hosts`) in large UNIX networks.

1. Using a Web browser, connect to the Oracle Enterprise Manager Web site running on the machine where the Oracle Files domain controller is configured:

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

2. Enter the Oracle9iAS login username and password to continue.
  - Enter `ias_admin` as the username with the appropriate password for the Oracle9iAS instance.

The Application Server Home page appears, listing all the Oracle9iAS system components running on the instance, including the Oracle Files domain:

```
IFS_<hostname.companyname.com>:1521:<DBServiceName>:<files schema>
```

3. Click the name of the Oracle Files domain. The Oracle Files top-level page appears, listing the Domain Controller and nodes that comprise the domain.
4. Click **Server Configurations** (under the Configuration heading). The Server Configurations page appears, listing 25 property bundles at a time. Scroll down until you find `NfsServerConfiguration`.
5. Click `NfsServerConfiguration`. The Edit page appears.
6. Scroll down to the Properties section of the page to the `IFS.SERVER.PROTOCOL.NFS.NISEnabled` and `IFS.SERVER.PROTOCOL.NFS.NISServiceProvider` properties.
7. Select the `IFS.SERVER.PROTOCOL.NFS.NISEnabled` property and click **Edit**. The Edit Property page appears.
8. Set the **Value** to `True`. Click **OK** to save the change and return to the Edit page.
9. Select the `IFS.SERVER.PROTOCOL.NFS.NISServiceProvider` property and click **Edit**.
  - Specify the name of the NIS server in your network that should be used to authenticate users. The format is:

```
nis://<NIS-Server-Name>/<files domain>
```

10. Click **OK** to save the change and return to the Edit page.
11. Click **OK** to save and return to the Server Configuration page.

If the node is currently running, you must either restart the node or load the modified configuration object onto the node.

To reload the node configuration:

1. Return to the Oracle Files top-level page.
2. Click the Node where the NFS protocol server (NfsServer) is running. The Node page appears.
3. Stop the existing NfsServer (if one is already running on the service).
4. Unload this NfsServer.
5. Load the modified NFS protocol server object.
6. Start the new, modified NfsServer.
7. Restart the service.



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# Oracle Files Administrative Roles and Tasks

There are three administrative roles in Oracle Files: System Administrator, Site Administrator, and Subscriber Administrator. Each type of administrator performs different tasks, using tools specifically for the task at hand.

This chapter provides an overview of the Oracle Files administrative roles and their associated tasks.

Topics include:

- [Administrative Roles Quick Reference](#)
- [System Administrator](#)
- [Site Administrator](#)
- [Subscriber Administrator](#)

## Administrative Roles Quick Reference

The documentation resources available to each administrative role are summarized in [Table 3-1](#).

**Table 3–1    Administrative Roles Quick Reference**

| If you are a:            | Your responsibilities include:                                                                                                                                       | Consult these sources:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| System Administrator     | <ul style="list-style-type: none"><li>■ Installing and configuring Oracle Files.</li><li>■ Managing the Oracle Files domain, nodes, services, and servers.</li></ul> | <i>Oracle Files Planning Guide</i><br><i>Oracle Collaboration Suite Installation and Configuration Guide</i><br><a href="#">Chapter 3, "Oracle Files Administrative Roles and Tasks"</a><br><a href="#">Chapter 4, "Administration Tools Overview"</a><br><a href="#">Chapter 5, "Administrative Operations in Oracle Enterprise Manager"</a><br><a href="#">Chapter 6, "Maintenance and Tuning"</a><br><a href="#">Chapter 7, "Customizing Oracle Files"</a><br><a href="#">Chapter 8, "Troubleshooting"</a> |
| Site Administrator       | <ul style="list-style-type: none"><li>■ Adding, deleting, and managing subscribers.</li><li>■ Registering custom workflows.</li></ul>                                | <a href="#">Chapter 3, "Oracle Files Administrative Roles and Tasks"</a><br><a href="#">Chapter 7, "Customizing Oracle Files"</a>                                                                                                                                                                                                                                                                                                                                                                             |
| Subscriber Administrator | <ul style="list-style-type: none"><li>■ Managing users, quotas, categories, subscriber settings, and content.</li></ul>                                              | <a href="#">Chapter 3, "Oracle Files Administrative Roles and Tasks"</a><br><a href="#">Chapter 4, "Administration Tools Overview"</a><br><a href="#">Chapter 8, "Troubleshooting"</a>                                                                                                                                                                                                                                                                                                                        |

**Administrative Accounts**

The following table summarizes the administrative accounts used in Oracle Files and other related applications:

**Table 3–2 Administrative Accounts**

| Account Name                                    | Password                                                                                                                                                                        | Purpose                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| system                                          | Set during Oracle Files configuration.                                                                                                                                          | Used internally. If you run <code>ifscsca</code> to add a second OCS middle tier for an additional HTTP node, regular node, or to migrate the domain controller, and you choose to reuse the existing files schema, you will need the system account. When you connect to Oracle Enterprise Manager Web site on the new middle tier, you will be prompted to enter the system user name and password. You also need the system account to run the Bulk NFS Tool (see <a href="#">"Using Oracle Files with NFS"</a> on page 2-10 for more information). |
| ias_admin                                       | Set during OCS Infrastructure or OCS middle-tier installation.                                                                                                                  | Used to access Oracle Enterprise Manager.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| cn=orcladmin                                    | Set during OCS Infrastructure installation.                                                                                                                                     | Used for Oracle Internet Directory administration. Also used in the Oracle Files Configuration Assistant when you create the files schema.                                                                                                                                                                                                                                                                                                                                                                                                             |
| site_admin                                      | Set during Oracle Files configuration.                                                                                                                                          | Used to access Site Administration functions in the Oracle Files Web interface. Also needed to run the bulk tools.                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Subscriber Administrator account (user-defined) | Site Administrators choose the Subscriber Administrator user name when they create the Subscriber. The password is auto-generated and e-mailed to the Subscriber Administrator. | Used to access Subscriber Administration functions in the Oracle Files Web interface. Also needed to run the bulk tools.                                                                                                                                                                                                                                                                                                                                                                                                                               |

## System Administrator

The System Administrator installs and configures Oracle Files, manages the Oracle Files domain, and performs system tuning and troubleshooting. Most of these tasks are the subject of a chapter in this guide:

| Task:             | Consult:                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Installation      | <i>Oracle Collaboration Suite Installation and Configuration Guide</i><br><i>Oracle Collaboration Suite Quick Installation Guide</i>                                                                                                                                                                                                                                      |
| Configuration     | <i>Oracle Collaboration Suite Installation and Configuration Guide</i><br><a href="#">Chapter 4, "Administration Tools Overview"</a>                                                                                                                                                                                                                                      |
| Domain management | <a href="#">Chapter 1, "Oracle Files Concepts"</a><br><a href="#">Chapter 4, "Administration Tools Overview"</a><br><a href="#">Chapter 5, "Administrative Operations in Oracle Enterprise Manager"</a>                                                                                                                                                                   |
| System tuning     | <a href="#">Chapter 6, "Maintenance and Tuning"</a>                                                                                                                                                                                                                                                                                                                       |
| Troubleshooting   | <a href="#">Chapter 8, "Troubleshooting"</a>                                                                                                                                                                                                                                                                                                                              |
| Reference         | <a href="#">Appendix A, "Oracle Text Reference"</a><br><a href="#">Appendix B, "Service Configuration Reference"</a><br><a href="#">Appendix C, "Server Configuration Properties"</a><br><a href="#">Appendix D, "Migrating Data to Oracle Files"</a><br><a href="#">Appendix E, "FTP Quote Command Reference"</a><br><a href="#">Appendix F, "Globalization Support"</a> |

The Oracle Enterprise Manager Web site provides access to basic Oracle Files process management and monitoring functions, such as starting and stopping the domain, nodes, services, and servers. This tool also allows administrators to monitor and dynamically tune the domain's nodes, services, and servers. See [Chapter 5, "Administrative Operations in Oracle Enterprise Manager"](#) for more information.

After installing and initially configuring Oracle Files, you can monitor document storage, session usage, and memory usage so you can adjust service and server parameters to maintain optimum performance. For example, if the storage space consumed by users is approaching the quota allocated, you might want to take steps to add storage or reduce the number of documents stored. You can use the Server Configurations page to create a new server. You can use the Domain Performance & Statistics pages to monitor the domain and obtain an overall usage summary for the domain.

### Skills Required to Administer Oracle Files

System administrators should have the following skills:

- **Basic Oracle RDBMS administration experience.** Since the file system is stored in an Oracle9i database, you need to understand the basics of how to administer the database.
- **Knowledge of Internet and Intranet protocols.** You need to understand how HTTP, SMB, WebDAV, and the other networking protocols used by Oracle Files work.
- **Familiarity with Internet technologies.** Since Oracle Files serves Web pages representing the file system, relies on XML for system configuration data, and uses Java as the language of server-side application development, familiarity with these technologies is important.
- **Web Server administration experience.** You need to understand how to administer the Oracle HTTP Server, powered by Apache.

## Changing the Oracle Files Schema Password

Follow these steps to change the Oracle Files schema password:

1. Stop the Oracle Files domain using Oracle Enterprise Manager Web site, or using `ifscctl stop [domain]`. See ["Starting and Stopping an Oracle Files Domain"](#) on page 5-1 for more information.
2. Change the schema password for the database user.
3. Change the schema password in Oracle Internet Directory:
  - a. Start Oracle Directory Manager.
  - b. In the System Objects directory tree, navigate to the following location:
 

```
<Root_Oracle_Context>
  + Entry Management
    + cn=OracleContext
      + cn=Products
        + cn=IFS
          + orclApplicationCommonName=<domain_name>
```
  - c. Double-click `orclApplicationCommonName=<domain_name>` to display the Properties tab.
  - d. Enter the new schema password in the **userpassword** field and click **Apply**.
4. Stop the Oracle Enterprise Manager Web site:
 

```
emctl stop
```

5. Change the password in the `targets.xml` file, located in `$ORACLE_HOME/sysman/emd`. If the password is not changed in `targets.xml`, you will not be able to see any Oracle Files Nodes or HTTP Nodes when you browse to the Oracle Files top-level page in Oracle Enterprise Manager Web site. To change the password in `targets.xml`:

- a. Look for the following property under the `oracle_ifs` target:

```
<property NAME="SchemaPassword" VALUE="<password>" ENCRYPTED="TRUE"/>
```

- b. Update the `VALUE` attribute with the new schema password.
  - c. Make sure that the `ENCRYPTED` attribute is set to `FALSE`:

```
<property NAME="SchemaPassword" VALUE="<password>" ENCRYPTED="FALSE"/>
```

- d. Save the file.

6. Start the Oracle Enterprise Manager Web site:

```
emctl start
```

When Oracle Enterprise Manager is started, it encrypts the password in `targets.xml`.

7. Repeat steps 4 - 6 for each middle-tier host in the domain.
8. Restart the Oracle Files Domain using Oracle Enterprise Manager Web site, or using `ifscctl start [-v] [-n] [domain]`. See ["Starting and Stopping an Oracle Files Domain"](#) on page 5-1 for more information.

## Site Administrator

The Site Administrator manages Oracle Files Subscribers. A Subscriber is a discrete organizational entity whose users can collaborate on files and folders. Users in one Subscriber do not have access to the content of users in another Subscriber. The Site Administrator creates, modifies, and deletes Subscribers.

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**Note:** Because Site Administrators must use Single Sign-On (SSO) for Oracle Files, and because of current SSO limitations, you can have only one Oracle Files Subscriber.

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The Site Administrator has a different view in Oracle Files than regular users:

**Figure 3–1 Site Administration View**

ORACLE Collaboration Suite  
Files

Logout Workflow Preferences Help

Site Administration

Subscribers Defaults Workflow

You are logged in as: site\_admin

### Browse Subscribers

New Subscriber

☒ Indicates that the Subscriber is disabled.  
☒ Indicates that the OiD subscriber is no longer configured for OiD. None of the subscriber's users will be able to log in.

Select and ... Email Administrator Enable Disable Delete

Select All | Select None

| Select Subscriber               | Allocated Quota | Consumed Quota | Allocated Users | Users Created |
|---------------------------------|-----------------|----------------|-----------------|---------------|
| <input type="checkbox"/> Oracle | 25 GB           | 3.2 MB         | 30              | 30            |
| <input type="checkbox"/> us     | 35 GB           | 14.9 MB        | 70              | 9             |

New Subscriber

Site Administration | Logout | Workflow | Preferences | Help

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Subscribers are created through Oracle Files integration with Oracle Internet Directory. The System Administrator selects the Oracle Files Subscriber from Oracle Internet Directory during Oracle Files installation.

The Site Administrator and the Subscriber Administrator log in to Oracle Files through the Administration Login Page. This page can be found at:

`http://<host>:<port>/files/app/AdminLogin`

## Managing Subscribers

The primary role of the Site Administrator is to manage the Oracle Files Subscriber. The following sections provide an overview of the primary tasks involved in managing the Subscriber.

See "Site Administration" in the online help for Oracle Files for detailed information.

## Creating, Modifying, and Deleting Subscribers

After the Oracle Files Configuration Assistant is used to create a new Oracle Files domain, you can configure Oracle Internet Directory Subscribers for Oracle Files so that they may be created in Oracle Files.

In addition, since the use of Single Sign-On is expected, only the default Subscriber should be created in Oracle Files.

---

---

**Note:** If you change the default Subscriber, you must restart the Oracle Files domain. See ["Starting and Stopping an Oracle Files Domain"](#) on page 5-1 for more information.

---

---

## Enabling and Disabling Subscribers

Using the Oracle Files wizards, the Site Administrator can enable or disable a Subscriber.

See ["Subscriber Administrator"](#) for more information about Subscribers.

## Notification and Archive Settings

The Site Administrator can specify notification and archive settings, such as setting up a notification that warns of a Subscriber's expiration date, or specifying how long archived files should remain in the Archive.

## E-mailing a Subscriber

The Site Administrator can e-mail a Subscriber Administrator. The Site Administrator, for instance, may want to contact a Subscriber Administrator about a Subscriber's expiration date.

## Viewing Subscriber Statistics

The Subscriber Statistics page in Oracle Files is divided into two sections: Subscriber Information and User and Workspace Information. Both sections provide statistical information about their respective areas; for instance, the total space consumed by the Subscriber and the total space consumed by Workspaces.

## Resetting a Subscriber Administrator Password

The Site Administrator can reset a Subscriber Administrator's password.



## Registering Custom Workflows

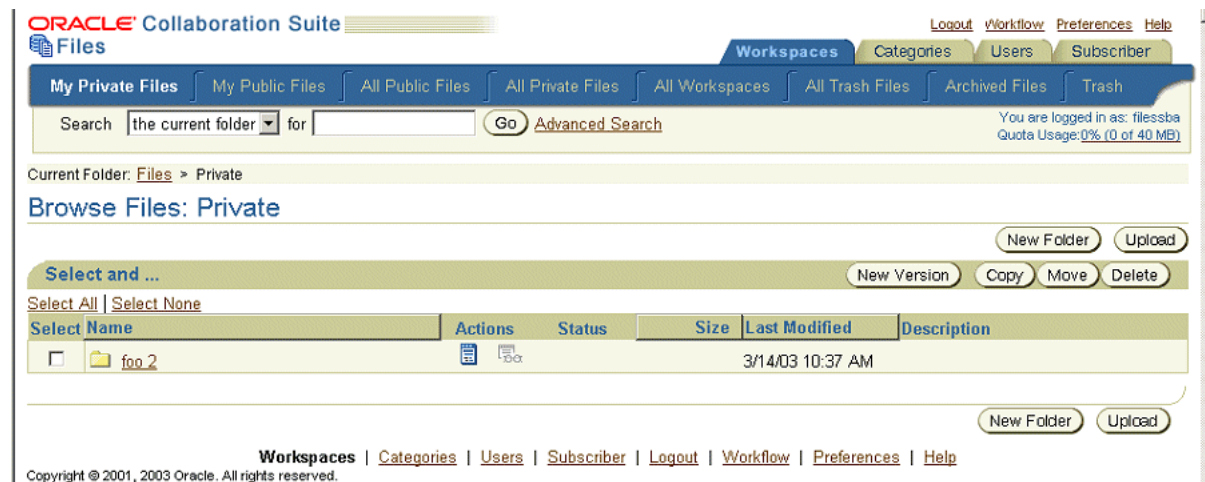
A *workflow designer*, a person with the necessary skills to design a workflow process in Oracle Workflow Builder, can create a custom workflow process for Oracle Files. Once the custom workflow process has been created, the Site Administrator is responsible for registering it with Oracle Files.

See ["Registering a Custom Workflow with Oracle Files"](#) in [Chapter 7](#) for more information about registering custom workflows.

## Subscriber Administrator

In Oracle Files, a Subscriber is an organizational entity whose users can collaborate on files and folders. Each Subscriber has its own Subscriber Administrator. The Subscriber Administrator, an enhanced user, administers the Subscriber by managing quota, users, and categories, specifying Subscriber settings, and restoring files from the Archive. The Subscriber Administration has a different view in Oracle Files than regular users:

**Figure 3–2 Subscriber Administration View**



See "Subscriber Administration" in the online help for Oracle Files for detailed information.

The Site Administrator and the Subscriber Administrator log in to Oracle Files through the Administration Login Page. This page can be found at:

`http://<host>:<port>/files/app/AdminLogin`

## Setting Defaults

One of the critical roles of the Subscriber Administrator is to specify default settings for users. The following list summarizes tasks regarding default settings.

See "Subscriber Administration" in the online help for Oracle Files for detailed information.

### Specifying Default User Settings

The Subscriber Administrator can specify default settings for all Subscriber users, such as whether their Public folder should by default be enabled or disabled.

### Specifying Notification Settings

The Subscriber Administrator can specify the number of days prior to a user's expiration date that the Subscriber Administrator is notified of the user's expiration.

### Specifying Default Quota Settings

The Subscriber Administrator can specify the default quota of each new user and Workspace.

### Specifying Default Public Folder Settings

The Subscriber Administrator can specify user and Workspace folder settings, such as whether the Public folder is enabled or disabled.

### Specifying Default Language Settings

The Subscriber Administrator can specify the default display language, document language, document character set, and time zone of a Subscriber.

## Subscriber Information Tasks

Oracle Files provides two mechanisms for information: Subscriber statistics and communication with the Site Administrator.

See "Subscriber Administration" in the online help for Oracle Files for detailed information.

### **Viewing Subscriber Statistics**

The Subscriber Administrator can view detailed information about the Subscriber.

### **Requesting to Modify Subscriber's Settings**

The Subscriber Administrator can submit a request to the Site Administrator to extend or modify a Subscriber's settings. For example, the Subscriber Administrator can request to increase the Subscriber quota.

### **Contacting the Site Administrator**

The Subscriber Administrator can e-mail the Site Administrator regarding Subscriber-related issues.

## **User Management Tasks**

The Subscriber Administrator manages users in the Subscriber by performing tasks such as creating users or updating user quota.

See "Subscriber Administration" in the online help for Oracle Files for detailed information.

### **Creating and Provisioning Users**

Oracle Files users must be created in Oracle Internet Directory, using the Oracle Directory Manager administration tool. Since Oracle Directory Manager runs as a servlet in the OC4J\_DAS instance, you must start the OC4J\_DAS instance on the Infrastructure host in order to access Oracle Directory Manager.

After users have been created, and after the Site Administrator has created the Oracle Files Subscriber, users are automatically provisioned in Oracle Files every 15 minutes by the `FilesOidUserSynchronizationAgent`.

You can change the default provisioning time period by changing the `IFS.SERVER.TIMER.ActivationPeriod` parameter of the `FilesOidUserSynchronizationAgent`. You can choose a time period anywhere from 5 minutes to 24 hours. See ["Changing a Server Configuration"](#) on page 5-27 for information about editing servers and agents.

Additionally, once a user has been created in Oracle Internet Directory, logging in to Oracle Files as that user will immediately provision the user in Oracle Files, irrespective of the time interval specified for the Agent (this is a new feature in 9.0.4.1 Release).

As a result of the provisioning process, Oracle Files users receive an e-mail confirming that they have an account on Oracle Files, with a URL to the Oracle Files login page and instructions on how to enable protocol access to Oracle Files.

**Creating Users in Oracle Internet Directory** In order for users to access Oracle Files, they must first be created as users in Oracle Internet Directory.

To create users in Oracle Internet Directory:

1. Make sure that the OC4J\_DAS instance has been started on the Infrastructure host.
2. Using a Web browser, connect to the Infrastructure host by entering:  
`http://<hostname>:7777/oiddas`

The hostname should be fully qualified.

3. Log in as the Oracle Internet Directory Administrator (typically `cn=orcladmin`).
4. Click the **Directory** tab.
5. Click **Create**.  
The Create User page appears.
6. Fill in the fields.
7. Click **Submit**.

---

---

**WARNING:** User names may not contain spaces or any of the following characters: `& ' % ? \ / + = ( ) * ^ , ; | ' ~`

---

---

---

**Note:** Although Oracle Files supports multibyte character sets, some protocols, such as WebDAV, do not support multibyte user names. For this reason, when you create users for Oracle Files in Oracle Internet Directory, you should create the names using single-byte characters only. Users whose names are created with multibyte characters will be unable to access content through some of the Oracle Files protocol servers.

Similarly, you should create user passwords in ASCII since some protocols, such as SMB, only accept ASCII passwords. Users whose passwords are created with non-ASCII characters will be unable to access content through some of the Oracle Files protocol servers.

---

For more information about creating users in Oracle Internet Directory, see the *Oracle Internet Directory Administrator's Guide*.

## **E-mailing Users**

The Subscriber Administrator can e-mail users in his or her Subscriber.

## **Modifying User Information**

A User Information page exists for each user in the Subscriber, where the Subscriber Administrator can modify the user's information and settings.

## **Updating User Quota**

The Subscriber Administrator can grant users quota increases upon request.

## **Enabling and Disabling Users**

The Subscriber Administrator can enable and disable users. Disabled users cannot access Oracle Files; enabled users can access Oracle Files.

## **Deleting Users**

The Subscriber Administrator can delete any user who has been deleted from Oracle Internet Directory, but only one at a time, and only when the user is unsubscribed from all Workspaces.

## Category Management Tasks

The Subscriber Administrator is responsible for managing categories. Categories are a way for users to classify and manage content. When implemented and associated with content, categories can be used as search criteria.

See "Subscriber Administration" in the online help for Oracle Files for detailed information.

### Creating Categories

The Subscriber Administrator can create categories using the category creation wizard.

### Modifying Categories

The Subscriber Administrator can modify existing categories using the category modification wizard. Category attributes cannot be modified; the Subscriber Administrator must delete the attribute and then create a new attribute.

### Deleting Categories

The Subscriber Administrator can delete categories using the category deletion wizard. When the Subscriber Administrator deletes a category, any file or folder associated with it loses this association.

## Trash Management Tasks

Trash is a collection of folders that contain deleted files and folders. Subscriber Administrators can view, copy, move, delete, and empty the contents of Trash generated by users and by Workspaces.

See "Subscriber Administration" in the online help for Oracle Files for detailed information.

## Archival File and Folder Management Tasks

Files and folders that are deleted from Trash are moved to the Archive. The Subscriber Administrator is responsible for handling file archival functions, such as restoring deleted files and folders.

See "Subscriber Administration" in the online help for Oracle Files for detailed information.

---

**Note:** System and Site Administrators can change the way that Oracle Files handles archiving. See "[LOB \(Large Objects\) Management](#)" on page 6-2 for more information.

---

### **Recovering a File at a User's Request**

The Subscriber Administrator can restore a file or folder, deleted from Trash, at the e-mail request of a user.

### **Restoring a File or Folder from the Archive**

The Subscriber Administrator can restore four types of items that users empty or delete from Trash:

- Deleted files and folders of active users.
- Deleted files and folders of active Workspaces.
- Deleted files and folders of deleted users.
- Deleted files and folders of deleted Workspaces.

## **Workspace and File Management Tasks**

The Subscriber Administrator is able to access Workspaces in the Subscriber to administer and to take advantage of the content management capabilities of Oracle Files.

See "Subscriber Administration" in the online help for Oracle Files for detailed information.

### **Working with Workspaces**

Although the Subscriber Administrator cannot be a member of a Workspace, as an enhanced user the Subscriber Administrator has full administrative access to the files and folders in every Workspace.

### **Updating Workspace Quota**

The Subscriber Administrator can update Workspace quotas in response to a Workspace Administrator's e-mail requests.

### **Locking and Unlocking Files**

A Subscriber Administrator can lock and unlock files in any Workspace.





---

# Administration Tools Overview

A full range of administration tools are provided with Oracle Files to configure Oracle Files, start and stop domains and nodes, configure nodes, manage service and server objects, work from the command line, migrate data and users to Oracle Files, and monitor domain, service, and node performance. These include:

- [Oracle Files Configuration Assistant](#)
- [Management Tools](#)
- [Scripts](#)
- [Bulk Administration Tools for Oracle Files](#)

## Oracle Files Configuration Assistant

The Oracle Files Configuration Assistant wizard is used during installation to initially set up the Oracle Files domain and specify an Oracle Internet Directory credential manager to associate with the domain. As you work with Oracle Files, you may wish to change these default settings. You can do this by running the Oracle Files Configuration Assistant.

The Configuration Assistant is specific for the release of Oracle Files. The tool performs these important functions:

- Set up the domain controller.
- Set up the nodes.
- Configure protocol servers.
- Create an Oracle Files schema and all associated objects in the Oracle9i database.

You can launch the Oracle Files Configuration Assistant from the command line by executing the `ifsca` script, located in the following directory:

```
$ORACLE_HOME/ifs/files/bin
```

You can also prepare or modify a response file and pass the filename to the Oracle Files Configuration Assistant as a parameter, for a non-interactive, or "silent," configuration. See the *Oracle Collaboration Suite Installation and Configuration Guide* for details.

## Management Tools

Which management tool you use will depend on the function to be performed, and whether you want to work with the Oracle Files domain as one of several middle-tier applications integrated with the Oracle Enterprise Manager Console:

- [Oracle Enterprise Manager Web Site](#)
- [Administration Tabs in Oracle Files](#)
- [Oracle Directory Manager](#)

### Oracle Enterprise Manager Web Site

Oracle Enterprise Manager Web site provides Web-based management tools designed specifically for Oracle9i Application Server. You can monitor and configure the components of your Oracle9i Application Server installations as well as access basic Oracle Files domain and node functions. It also allows administrators to monitor and dynamically tune the domain's nodes, services, and servers. Using Oracle Enterprise Manager Web site, you can:

- Start and stop the domain, nodes, services, and servers using a Web browser from any machine on the network.
- Configure protocol servers, agents, nodes, services, and change settings dynamically, for the current runtime session; change settings permanently; and change default settings to be used as the basis for new servers.
- Display runtime operational data about the domain, nodes, hosts, and servers at runtime, so you can monitor performance and change system configuration, if necessary.

### Accessing Oracle Enterprise Manager Web site

From your Web browser, access Oracle Enterprise Manager Web site by pointing your browser to:

`http://hostname:1810/`

The page you see depends on the components you configured and the choices you made during Oracle 9iAS installation.

### Administration Tabs in Oracle Files

When you log in to Oracle Files as either a Site or Subscriber Administrator, you can see the administration tabs in the Oracle Files Web interface. The Site Administrator and the Subscriber Administrator log in to Oracle Files through the Administration Login Page. This page can be found at:

`http://<host>:<port>/files/app/AdminLogin`

See "Site Administration" and "Subscriber Administration" in the Online Help for Oracle Files for detailed information about administrative operations in the Oracle Files Web interface.

### Oracle Directory Manager

Oracle Directory Manager is the administrative tool for Oracle Internet Directory.

See the *Oracle Internet Directory Administrator's Guide* for more information about Oracle Directory Manager.

### Scripts

Administrators who want to work directly from the command line can use the scripts listed in the following table:

Table 4–1 Scripts

| Script Name       | Location                     | Description                                                                                                                                                                  |
|-------------------|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ifsca             | \$ORACLE_HOME/ifs/files/bin/ | Runs the Oracle Files Configuration Assistant.                                                                                                                               |
| ifsctl            | \$ORACLE_HOME/ifs/files/bin/ | Starts, stops, and monitors Oracle Files domains and nodes. See <a href="#">"Starting Oracle Files from the Command Line Using ifsctl"</a> on page 5-8 for more information. |
| emctl             | \$ORACLE_HOME/bin/           | Manages Oracle Enterprise Manager.                                                                                                                                           |
| opmnctl           | \$ORACLE_HOME/opmn/bin/      | Manages Oracle Process Management and Notification.                                                                                                                          |
| ifsbulkadmintools | \$ORACLE_HOME/ifs/files/bin/ | Runs the Bulk Administration tools.                                                                                                                                          |

## Bulk Administration Tools for Oracle Files

A Subscriber Administrator can use the Bulk Administration tools to manage users and Workspaces in Oracle Files.

Each tool works in a similar manner: it reads an XML file containing a list of "actions" (such as creating a workspace or updating users), processes the list, and executes the actions.

The Bulk Administration tools include:

- [User Administration Tool](#)
- [Workspace Administration Tool](#)

## Running the Bulk Administration Tools

To run the Bulk Administration tools, the Subscriber Administrator must run the ifsbulkadmintools script, located in the following directory:

\$ORACLE\_HOME/ifs/files/bin/

When you run the Bulk Administration tools, the following parameters must be specified in the following order:

1. The type of tool you want to use:
  - **users** for the User Administration Tool
  - **workspaces** for the Workspace Administration Tool
2. An Oracle Files Domain. For example:

```
ifs://user-sun.us.company.com:1521:seamus:ifuser
```

3. A service configuration name. The default service configuration names are:

```
SmallServiceConfiguration  
MediumServiceConfiguration  
LargeServiceConfiguration
```

4. The Oracle Files schema password.
5. The Site Administrator user name (site\_admin).
6. The Site Administrator password.
7. The Subscriber Administrator user name.
8. The Subscriber Administrator password.

---

---

**Note:** See "[Administrative Accounts](#)" on page 3-2 for more information about steps 5 - 8.

---

---

9. The name of the XML file defining the list of actions to perform.

For example, to invoke the User Administration tool, you could enter the following:

```
ifsbulkadmintools users ifs://user-sun.us.company.com:1521:seamus:ifuser  
MediumServiceConfiguration ocsv2 site_admin mgr filessba welcome1 user.xml
```

To invoke the Workspace Administration tool, you could enter the following:

```
ifsbulkadmintools workspaces ifs://user-sun.us.company.com:1521:seamus:ifuser  
MediumServiceConfiguration ocsv2 site_admin mgr filessba welcome1 workspace.xml
```

## User Administration Tool

The User Administration tool updates the profile of each user listed in an XML file, unless the user does not exist in the Subscriber.

---

---

**Note:** You cannot change user passwords with the User Administration tool.

---

---

## Sample XML File

This XML file contains one action for updating users:

```
<?xml version="1.0" encoding="UTF-8" ?>
<users>
  <action label="update">
    <class>oracle.ifs.files.admin.bulk.user.action.UpdateNormalUsersAction
    </class>
    <user>
      <userid>test.user</userid>
      <quota>25</quota>
      <locale>us</locale>
      <publicfolder enabled="yes" />
    </user>
  </action>
</users>
```

---

---

**Note:** The User Administration tool performs DTD validation. For this reason, your XML file must include the DTD, either inline or referenced externally.

---

---

## DTD for the User Administration Tool

```
<!DOCTYPE users [

  <!ELEMENT users (defaults?, (action|condition)+)>

  <!ELEMENT defaults (property+)>

  <!ELEMENT condition (condition|action)+>
  <!ATTLIST condition type NMTOKEN #REQUIRED>
  <!ATTLIST condition op NMTOKEN #REQUIRED>
  <!ATTLIST condition left CDATA #REQUIRED>
  <!ATTLIST condition right CDATA #REQUIRED>

  <!ELEMENT action (class, property*, user+)>
  <!ATTLIST action label ID #REQUIRED>
  <!ATTLIST action description CDATA #IMPLIED>

  <!ELEMENT class (#PCDATA)>

  <!ELEMENT property EMPTY>
  <!ATTLIST property name NMTOKEN #REQUIRED>
```

```

<!ATTLIST property value CDATA #REQUIRED>

<!ELEMENT user (userid, email?, firstname?, lastname?, quota?, locale?,
publicfolder?)>

<!ELEMENT userid (#PCDATA)>
<!ATTLIST userid enabled (yes|no) #IMPLIED>

<!ELEMENT email (#PCDATA)>

<!ELEMENT firstname (#PCDATA)>

<!ELEMENT lastname (#PCDATA)>

<!ELEMENT quota (#PCDATA)>

<!ELEMENT locale (#PCDATA)>

<!ELEMENT publicfolder EMPTY>
<!ATTLIST publicfolder enabled (yes|no) "yes">
]>

```

## Troubleshooting the User Administration Tool

You should be aware of the following limitations of the User Administration tool:

- **Quota:** The User Administration tool does not update a user's quota should the quota exceed the granted limit. Also, a user's quota is not updated if the new value is below that of the user's consumed storage.
- **Enabling or Disabling Public Folders:** A user's Public Folder that is not empty cannot be disabled.

## Workspace Administration Tool

The Workspace Administration tool creates or updates workspaces. The class of the action specified in the referenced XML file determines which operation is performed. For example, if the class is `CreateWorkspacesAction`, one or more workspaces are created. If the class is `UpdateWorkspacesAction`, one or more workspaces are updated.

## Sample XML File

This XML file contains one action for updating workspaces and another action for creating workspaces:

```
<?xml version="1.0" encoding="UTF-8" ?>
<workspaces>

  <action label="create">
    <class>oracle.ifs.files.admin.bulk.workspace.action.CreateWorkspacesAction
  </class>
    <workspace name="test_workspace" type="public">
      <description>Test Workspace for the administration tool</description>
      <member name="test.user" access="admin" />
    </workspace>
  </action>

  <action label="update">
    <class>oracle.ifs.files.admin.bulk.workspace.action.UpdateWorkspacesAction
  </class>
    <workspace name="test_workspace">
      <quota>40</quota>
      <publicfolder enabled="no" />
    </workspace>
  </action>

</workspaces>
```

---

---

**Note:** The Workspace Administration tool performs DTD validation. For this reason, your XML file must include the DTD, either inline or referenced externally.

---

---

## DTD for the Workspace Administration Tool

```
<!DOCTYPE workspaces [

  <!ELEMENT workspaces (defaults?, (action|condition)+)>

  <!ELEMENT defaults (property+)>

  <!ELEMENT condition (condition|action)+>
  <!ATTLIST condition type NMTOKEN #REQUIRED>
  <!ATTLIST condition op NMTOKEN #REQUIRED>
  <!ATTLIST condition left CDATA #REQUIRED>
```



```

<!ATTLIST condition right CDATA #REQUIRED>

<!ELEMENT action (class, property*, workspace+)>
<!ATTLIST action label ID #REQUIRED>
<!ATTLIST action description CDATA #IMPLIED>

<!ELEMENT class (#PCDATA)>

<!ELEMENT property EMPTY>
<!ATTLIST property name NMTOKEN #REQUIRED>
<!ATTLIST property value CDATA #REQUIRED>

<!ELEMENT workspace (description?, quota?, publicfolder?, member*)>
<!ATTLIST workspace name CDATA #REQUIRED>
<!ATTLIST workspace type (public|private) #IMPLIED>

<!ELEMENT description (#PCDATA)>

<!ELEMENT quota (#PCDATA)>

<!ELEMENT publicfolder EMPTY>
<!ATTLIST publicfolder enabled (yes|no) "no">

<!ELEMENT member EMPTY>
<!ATTLIST member name CDATA #REQUIRED>
<!ATTLIST member access (admin|RW|RO|delete) #REQUIRED>
]>

```

Note the following about the Workspace Administration DTD:

- The `type` attribute of the `workspace` element defaults to `Private` if not specified.
- If the `quota` element is not specified, the `quota` property setting defaults to the Subscriber's default Workspace quota.
- If the `public folder` element is not specified, the `public folder` property setting defaults to `Enabled`, if the Workspace type is `public`. Otherwise, it defaults to `Disabled`.
- The `delete` value for the `member access` property is valid only for the update action of the Workspace Administration tool.

## Troubleshooting the Workspace Administration Tool

The following sections provide troubleshooting information about creating and updating workspaces using the Workspace Administration tool.

**Troubleshooting Workspace Creation** You should be aware of the following limitations when you create workspaces using the `create` action of the Workspace Administration tool:

- A Workspace name may not already exist in the Subscriber.
- A Workspace name may not contain the following characters: \ / : \* ? " < > |
- A Workspace Administrator must be specified in the list of members.
- Creation of the Workspace(s) in the Subscriber may not exceed the Subscriber's total quota.
- A Workspace name may not end in a period.

**Troubleshooting Workspace Updating** You should be aware of the following limitations when you update workspaces using the `update` action of the Workspace Administration tool:

- **Quota:** A workspace cannot be updated if the new value causes the Subscriber's total quota to exceed the granted limit, or if the new value is less than the workspace's consumed storage.
- **Public Folder:** A workspace public folder that is not empty cannot be disabled.
- **Members:** A workspace must have at least one Administrator. If not, the Workspace cannot be updated.

---

# Administrative Operations in Oracle Enterprise Manager

Oracle Files administration tasks include starting and stopping the domain, monitoring the system, and reconfiguring system components (such as changing port numbers on a specific protocol server). This chapter tells you how to use Oracle Enterprise Manager Web site to perform these tasks. Topics include:

- [Starting and Stopping an Oracle Files Domain](#)
- [Changing Configuration Settings](#)
- [Oracle Files Configuration Options](#)
- [Monitoring Domain, Node, and Service Performance](#)

## Starting and Stopping an Oracle Files Domain

The *domain controller* manages the set of nodes comprising the domain. The domain controller controls which nodes are running, tracks the status of each node, and allows nodes to be monitored and administered. The Oracle Files software runs on the database machine and as a set of middle-tier processes, called *nodes*. Each node executes on a particular computer, or *host*. Although a domain's nodes are often split across a set of hosts, a single host can have more than one Oracle Files node. Each node has a name, which is unique across the Oracle Files domain. Oracle Files nodes are processes of Oracle Files managing one or more services and servers (agents and protocols).

There are two types of nodes: regular nodes, and HTTP nodes. The Oracle Files HTTP Node runs as part of an OC4J process.

The domain controller polls the nodes that are configured to run under its control. Once all the nodes are identified, you'll see them under the list of nodes for the specific domain.

Controlling the domain and the nodes using the Oracle Enterprise Manager Web site requires that the Oracle Enterprise Manager server-side software (basically, Java servlets that have been deployed to the OC4J instance running on each host) is running on each host that comprises the domain.

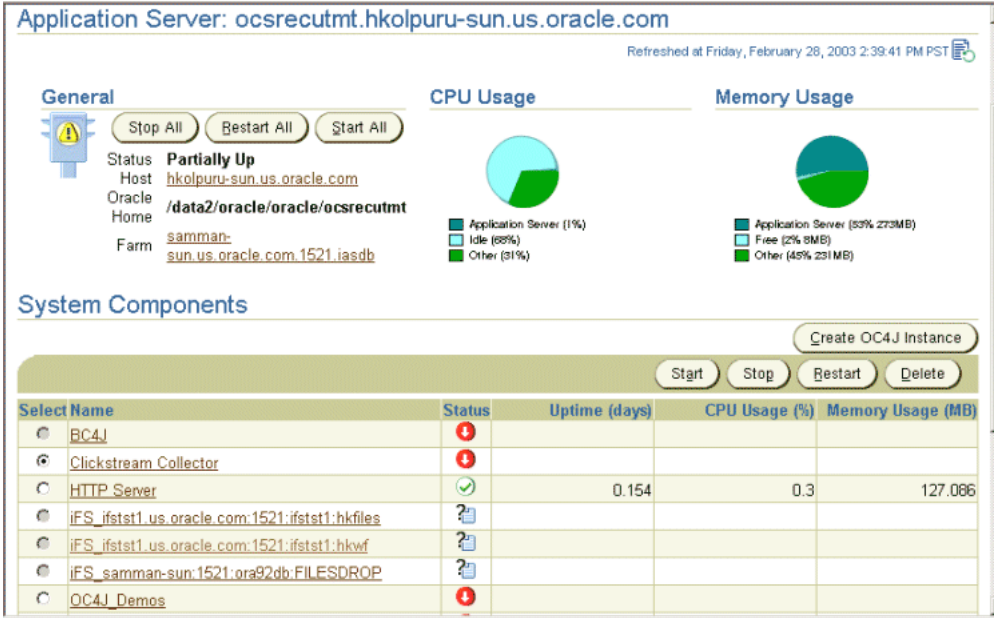
## Starting the Oracle Files Domain Controller Process

1. If it's not running already, start the Oracle Enterprise Manager server-side software by executing its startup script from the command line ([Table 5-1](#)).

**Table 5-1    Starting the Oracle Enterprise Manager Web Server**

| UNIX-based Hosts                           | Windows NT/2000 Hosts                                                 |
|--------------------------------------------|-----------------------------------------------------------------------|
| <code>\$ORACLE_HOME/bin/emctl start</code> | Start the Windows service for the Oracle Enterprise Manager Web site. |

2. Using a Web browser, access the Oracle9iAS Home page by entering:  
  
`http://<hostname>:1810/`  
  
where `<hostname>` is the name of the middle-tier machine running the Oracle9i Application Server software on which Oracle Files has been installed and configured.
3. A login dialog box appears. Enter the Oracle Enterprise Manager administrator username and password and click **OK**.  
  
The Application Server Home page appears, listing all of the system components that have been configured on the host.



Among these components, Oracle Files domain targets are identified by an iFS\_ prefix. In the preceding example, one of the Oracle Files domains is:

iFS\_ifstst1.us.oracle.com:1521:ifstst1:hkfiles

The Oracle9iAS instance is:

ocsrecutmt.hkolpuru-sun.us.oracle.com

- 4. From the Application Server Home page, click the name of the Oracle Files domain you want to manage.

The Oracle Files top-level page appears, showing the status of the domain controller and the set of nodes that belong to the domain. The green checkmark in the Status column means the component has been started.

iFS\_samman-sun:1521:ora92db:FILESDROP

Refreshed at Monday, March 3, 2003 1:16:21 PM PST

**General**

Domain Name **ifs://samman-sun:1521:ora92db:FILESDROP**  
Domain Type **files**

**Components**

Start Local Components Stop Domain Refresh Components

An Internet File System domain contains a Domain Controller and a set of Nodes.

Start Stop

| Select                | Name                                                 | Type              | Status | Host                       | Is Local? |
|-----------------------|------------------------------------------------------|-------------------|--------|----------------------------|-----------|
| <input type="radio"/> | <a href="#">Domain Controller</a>                    | Domain Controller | ✓      | hkolpuru-sun.us.oracle.com | Yes       |
| <input type="radio"/> | <a href="#">hkolpuru-sun.us.oracle.com HTTP Node</a> | HTTP Node         | ✓      | hkolpuru-sun.us.oracle.com | Yes       |
| <input type="radio"/> | <a href="#">hkolpuru-sun.us.oracle.com Node</a>      | Node              | ✓      | hkolpuru-sun.us.oracle.com | Yes       |

Some operations are performed on local domain components, while others are performed on the entire domain.

- To start all the components on the local middle tier machine, click **Start Local Components**.
- To start a single component, select it and click **Start**.
- To stop a single component, select it and click **Stop**.
- To stop the entire domain, click **Stop Domain**. This action stops everything, including the local and remote components. The presence of the Stop Domain button indicates that the domain is running.
- To refresh the entire domain, click **Refresh Components**.
- You can also migrate the domain controller from another host to the local host. See "[Migrating the Domain Controller](#)" in the next section for more information.

If a component's selection button is greyed out, that component is not located on the local host.

---

**Note:** You must restart the HTTP node whenever you restart the Oracle Files domain. See "[Starting HTTP Nodes](#)" on page 5-6 for more information.

---

## Migrating the Domain Controller

The domain controller is one of the most critical components of the Oracle Files domain. The domain controller establishes control over all the nodes that make up the domain, starts and stops the domain, and performs a variety of other tasks. For this reason, it is important to ensure that the domain controller is running.

An administrator's ability to manage the domain decreases significantly when the domain controller goes down, even though some portions of the domain may still be usable. To avoid compromising the availability of the system, you can migrate the domain controller to another middle-tier host. This option allows you to re-enable the domain controller even when the middle-tier instance that hosted the domain controller fails.

You can migrate the domain controller from one middle-tier host to another by using a new middle-tier host, or by using an existing middle-tier host.

### Migrating the Domain Controller to a New Middle-Tier Host

New middle-tier hosts are set up through the Oracle Files Configuration Assistant. During the process of configuration, you can indicate whether the domain controller is to be run on the new middle-tier host. The domain controller will be migrated to the new middle-tier host as part of the configuration process. See ["Oracle Files Configuration Assistant"](#) on page 4-1 for more information.

### Migrating the Domain Controller to an Existing Middle-Tier Host

You can migrate the domain controller to an existing middle-tier instance using the Oracle Enterprise Manager Web site.

---

---

**Note:** You can only migrate the domain controller when it is not running.

---

---

1. Access the Oracle Enterprise Manager Web site from the host where you want the domain controller to be located.
2. Navigate to the Oracle Files top-level page.

iFS\_samman-sun:1521:ora92db:FILESDROP

Refreshed at Tuesday, March 4, 2003 1:23:14 PM PST

General

Domain Nameifs://samman-sun:1521:ora92db:FILESDROP  
Domain TypeUnavailable

Components

Start Local Components

Stop Domain

Refresh Components

Configure Domain Controller

An Internet File System domain contains a Domain Controller and a set of Nodes.

Start

Stop

| Select                | Name                                                 | Type              | Status | Host                       | Is Local? |
|-----------------------|------------------------------------------------------|-------------------|--------|----------------------------|-----------|
| <input type="radio"/> | <a href="#">Domain Controller</a>                    | Domain Controller |        | hkolpuru-sun.us.oracle.com | No        |
| <input type="radio"/> | <a href="#">hkolpuru-sun.us.oracle.com HTTP Node</a> | HTTP Node         |        | hkolpuru-sun.us.oracle.com | No        |
| <input type="radio"/> | <a href="#">hkolpuru-sun.us.oracle.com Node</a>      | Node              |        | hkolpuru-sun.us.oracle.com | No        |

- Click **Configure Domain Controller**.
- On the Confirmation page, click **OK**. The domain controller is migrated to the local host.

## Starting the Node Processes

There are two types of nodes: regular nodes and HTTP nodes. Although the domain can contain nodes on multiple middle-tier machines, you can only start and stop nodes that are on your local machine.

### Starting Regular Nodes

- On the Oracle Files top-level page, select the regular node from the Components table.
- Click **Start**.
- The Node status changes to a green checkmark icon, which means the node is up.

### Starting HTTP Nodes

You need to know the corresponding OC4J instance name. For the Oracle Files domain, the default OC4J instance name is OC4J\_iFS\_files.

- Go to the Application Server Home page.
- Select the OC4J instance for the HTTP node from the Components table.



3. Click **Start**, if the node has not already been started.

---

**Note:** You must restart the OC4J instance whenever you restart the Oracle Files domain.

---

## Starting, Stopping, Suspending, and Resuming Servers

A *node configuration* defines the behavior of a particular node. Which servers start up with the node are determined by the node configuration selected. Each Oracle Files node can have one or more services and one or more servers. These services and servers are started automatically when you start the domain, unless you specify otherwise.

To view the status of the servers:

1. On the Oracle Files top-level page, click the name of the Oracle Files node. The Node page appears, showing the services and servers that comprise the node (see [Figure 5-1](#)).
2. Examine the Status column for the servers to see which servers are running or are stopped.
3. Use the buttons provided to:
  - Start
  - Restart
  - Suspend
  - Resume
  - Stop
  - Unload

Any changes you make remain active for this session only. To permanently change server properties, including which servers start up automatically, see ["Changing Configuration Settings"](#) on page 5-11.

---

**Note:** You cannot start or restart an HTTP node from this screen. You must start or restart the corresponding OC4J instance from the Application Server Home page.

---

**Figure 5–1 Services and Servers Sections of Node Page**

**Services**

Start Service

Dispose

| Select                | Name                              | Accepting New Session? | Auto Disposed? | Max Concurrent Sessions | Max Concurrent Sessions Per User |
|-----------------------|-----------------------------------|------------------------|----------------|-------------------------|----------------------------------|
| <input type="radio"/> | <a href="#">IfsDefaultService</a> | Yes                    | No             | Unlimited               | Unlimited                        |

**Servers**

Load Server

Start Restart Suspend Resume Stop Unload

| Select                | Name                                              | Type  | Status  | Service           | Priority |
|-----------------------|---------------------------------------------------|-------|---------|-------------------|----------|
| <input type="radio"/> | <a href="#">FilesSubscriberExpirationAgent</a>    | AGENT | Running | IfsDefaultService | 5        |
| <input type="radio"/> | <a href="#">FilesSubscriberUsageAgent</a>         | AGENT | Running | IfsDefaultService | 5        |
| <input type="radio"/> | <a href="#">AfpServer</a>                         | AFP   | Running | IfsDefaultService | 5        |
| <input type="radio"/> | <a href="#">SmbServer</a>                         | SMB   | Running | IfsDefaultService | 5        |
| <input type="radio"/> | <a href="#">ServiceWarmupAgent</a>                | AGENT | Stopped | IfsDefaultService | 5        |
| <input type="radio"/> | <a href="#">FilesWorkflowLockCleanupAgent</a>     | AGENT | Running | IfsDefaultService | 5        |
| <input type="radio"/> | <a href="#">FilesReviewProcessExpirationAgent</a> | AGENT | Running | IfsDefaultService | 5        |
| <input type="radio"/> | <a href="#">LockAgent</a>                         | AGENT | Running | IfsDefaultService | 5        |
| <input type="radio"/> | <a href="#">PrintAgent</a>                        | AGENT | Running | IfsDefaultService | 5        |
| <input type="radio"/> | <a href="#">AccessControlListIndexAgent</a>       | AGENT | Running | IfsDefaultService | 5        |
| <input type="radio"/> | <a href="#">GarbageCollectionAgent</a>            | AGENT | Running | IfsDefaultService | 5        |

## Starting Oracle Files from the Command Line Using ifscctl

As an alternative to using the Oracle Enterprise Manager Web site to start the domain and nodes, you can use the `ifscctl` command-line tool. The tool is located in:

```
$ORACLE_HOME/ifs/files/bin/
```

The general syntax is:

```
ifscctl command [switch ...] [argument ...]
```

Some commands require a schema password. For those, `ifscctl` prompts for the password, either on the terminal (UNIX) or using a dialog box (Windows).

The commands include:

**Table 5–2** *ifscctl Commands*

| Command                                           | Use                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <code>ifscctl start [-v] [-n] [domain]</code>     | <p>Launches any local Oracle Files nodes for the specified domain. ("Local nodes" are those configured to run on the computer where <code>ifscctl</code> is invoked.) If the domain controller for the specified domain runs locally, it is also launched. If domain is omitted, all local Oracle Files nodes and domain controllers for all domains for which the computer is registered are launched. The command also starts the domain controller if it has been launched (either locally or remotely) but is not yet started.</p> <p>Including <code>-n</code> requests non-interactive operation; <code>ifscctl</code> does not prompt for the schema password. In this case, the Oracle Files nodes and domain controllers are still launched, but the domain controller is not started (since starting an Oracle Files domain requires a schema password).</p> |
| <code>ifscctl stop [-v] [domain]</code>           | <p>Stops the specified domain. The domain controller and all nodes, whether local or remote, are stopped. If only one domain is registered for the computer, the domain may be omitted.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <code>ifscctl stoplocalnodes [-v] [domain]</code> | <p>Stops the local nodes for the specified domain. Nodes running on other computers are not affected. The domain controller is not stopped. If only one domain is registered for the computer, the domain may be omitted.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <code>ifscctl status [-v] [-n] [domain]</code>    | <p>Displays the status of the specified domain. If the domain is omitted, displays the status for all domains for which the computer is registered.</p> <p>Including <code>-n</code> requests non-interactive operation; <code>ifscctl</code> does not prompt for the schema password.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

Table 5–2 (Cont.) ifscctl Commands

| Command                                                                       | Use                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <code>ifscctl validateconfiguration</code><br><code>[-v] [-p] [domain]</code> | Synchronizes the Oracle Files registry file (on the local computer) with the domain registry (in the Oracle Files schema). This is normally done automatically; however, if the local computer's file system was restored from a backup (for example, after a disk failure), explicit synchronization might be required.<br><br>-p means "prune". If the registry file contains a domain that no longer exists (namely, if Oracle Files cannot connect to the database schema for that domain), the computer is deregistered from that domain. |

All commands support a -v, "verbose" switch. This causes ifscctl to generate a log file with additional diagnostic information. This log file is located at:

```
$ORACLE_HOME/ifs/files/log/ifscctl.log
```

**Note:** From the command line, the Oracle Files domain must be specified in the following format:  
`ifs://<host>:<port>:<service>:<files schema>`

ifscctl and OC4J

Oracle Files HTTP nodes run in OC4J processes. Because OC4J processes are not owned by Oracle Files (and might also be running non-Oracle Files servlets), ifscctl does not launch or stop OC4J processes. Use the Oracle Enterprise Manager Web site for this purpose, or you can run the following commands:

```
opmnctl startproc OC4J_iFS_files
opmnctl restartproc OC4J_iFS_files
opmnctl stopproc OC4J_iFS_files
```

See "[Oracle Process Management and Notification](#)" for more information.

When an OC4J process is launched, any Oracle Files HTTP nodes configured to run in that OC4J instance are automatically started, if the domain controller is running

and started. When an OC4J process is stopped, the HTTP nodes are stopped. Although it doesn't start and stop HTTP nodes, `ifscctl` does display their status.

## Oracle Process Management and Notification

Oracle Process Management and Notification (OPMN) manages Oracle HTTP Server and OC4J processes within an application server instance. It channels all events from different components to all components interested in receiving them. OPMN consists of two components:

- Oracle Process Manager (PM) is the centralized process management mechanism in Oracle9iAS and manages all Oracle HTTP Server- and OC4J-related processes. It starts, stops, restarts, and detects the termination of these processes. When these processes are configured to start up, the characteristics of each set is specified in the following configuration file:

```
$ORACLE_HOME/opmn/conf/opmn.xml
```

The PM starts and then waits for a command to start specific processes or all processes. At shutdown, the PM receives a request to stop one or more processes, or all processes and itself.

- Oracle Notification System (ONS) is the transport mechanism for failure, recovery, startup, and other related notifications between components in Oracle9iAS.

To start the Oracle HTTP Server and OC4J processes, you can:

- Use the Oracle Enterprise Manager Web site. On the Application Server Home page, select the HTTP Server or OC4J processes and click **Start**.

Or:

- Use the OPMN command line in:

```
$ORACLE_HOME/opmn/bin/opmnctl
```

Type `opmnctl` to see the supported syntax.

## Changing Configuration Settings

The default domain configuration is based initially on the settings you selected during installation and configuration. The specific settings are stored in the Oracle Files repository, in different configuration objects, specifically:

- [Domain Properties](#)

- [Node Configuration](#)
- [Service Configuration](#)
- [Server Configuration](#)

When the domain is started, it uses the settings contained in the repository to determine which nodes it should control (what nodes comprise the domain). The node configuration defines the runtime behavior of the nodes. The service configuration specifies the size of service each node supports (small, medium, or large). The server configuration determines the protocol servers and agents (AFP, FTP, NFS, and so on) that each service offers for use of the system.

You can change these settings by using the Oracle Enterprise Manager Web site to access a specific configuration object and modify the various properties that each comprises.

## Domain Properties

To make changes to the domain configuration properties:

1. From the Application Server Home page, click the Oracle Files link. The Oracle Files top-level page appears.
2. In the Configuration section, select **Domain Properties**.
3. On the Domain Properties page, click the name of the property you want to change. You may need to move to the second or subsequent page to find some properties. Only those properties that are underlined may be changed.
4. Make the changes to the property and click **OK**.

You can change these properties:

- `IFS.DOMAIN.APPLICATION.FILES.WorkflowSchemaName`. The name of the Workflow Schema, if Oracle Files was configured to run with Oracle Workflow during installation. Update this value as needed.
- `IFS.DOMAIN.DOMAINCONTROLLER.LogFilename`. The absolute path to the domain controller's log file. Optional. If not specified, logs are generated to the console (`stdout`).
- `IFS.DOMAIN.DOMAINCONTROLLER.OverwriteLog`. Whether any existing log file is overwritten each time the domain controller starts. Optional. Defaults to false and appends the log to any existing log file.
- `IFS.DOMAIN.DOMAINCONTROLLER.LogLevel`. The verbosity of the domain controller log. Optional. Must be one of the following values:

- 0 = disabled (no logging)
- 2 = low (error conditions only)
- 4 = medium (normal operation)
- 6 = high (debug information)

Defaults to 4.

- `IFS.DOMAIN.DOMAINCONTROLLER.RemoterLogLevel`. The verbosity of the inter-process communication log. Optional. Must be one of the following values:
  - 0 = disabled (no logging)
  - 2 = low (error conditions only)
  - 4 = medium (normal operation)
  - 6 = high (debug information)

Defaults to 2.

- `IFS.DOMAIN.DOMAINCONTROLLER.CheckNodesPeriod`. The interval between successive checks of the domain's nodes, in seconds. Optional. Defaults to 15 seconds.
- `IFS.DOMAIN.CREDENTIALMANAGER.AnonymousUserName`. The anonymous user name for the domain controller. Required. Defaults to: guest.
- `IFS.DOMAIN.DOMAINREGISTRY.PasswordRequired`. Whether the domain registry schema requires a password. Defaults to false.
- `IFS.DOMAIN.LIBRARYOBJECT.SERVICECONFIGURATION.DefaultServiceConfiguration`. Defaults to `SmallServiceConfiguration`.
- `IFS.DOMAIN.PROTOCOL.NFS.UidToUserMap`. See ["UNIX-UID-to-Oracle Files-User Account Client Mapping"](#) on page 2-11 for information.

You must restart the domain controller for changes to take effect.

## Node Configuration

The runtime behavior of any node is specified in a *node configuration* object. On the Oracle Enterprise Manager Web site, you can dynamically change the node configuration, change to a different configuration, alter a node configuration permanently, create a new node configuration, or delete a node configuration that is

no longer needed. Depending on whether you select the HTTP node or a regular node, different properties are changeable.

### Changing a Node Configuration

1. From the Configuration section on the Oracle Files top-level page, click **Node Configurations**.
2. On the Node Configurations page, click the name of the node configuration you want to change, either the HTTP node or the regular node. The Edit page appears.
3. Change the node configuration. You can make the following modifications:



| Property                                                                                                                                                                                                                                                                | HTTP Node                                                                                                                                                                                      | Regular Node                                                                                                                                           |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Description</b> of the node configuration.                                                                                                                                                                                                                           | Yes                                                                                                                                                                                            | Yes                                                                                                                                                    |
| <b>Access Control</b> level associated with the node configuration.                                                                                                                                                                                                     | Yes                                                                                                                                                                                            | Yes                                                                                                                                                    |
| <b>Active</b> status. Deselect to make inactive.                                                                                                                                                                                                                        | Yes                                                                                                                                                                                            | Yes                                                                                                                                                    |
| <b>Guarded.</b> Whether the node's guardian runs as a separate process. Defaults to true.                                                                                                                                                                               | N/A                                                                                                                                                                                            | Yes                                                                                                                                                    |
| <b>Java Command.</b> For guarded nodes, the command issued by the node guardian to create a node manager process. Defaults to "java".                                                                                                                                   | Yes<br><br>The Java Command and arguments for HTTP nodes are defined in \$ORACLE_HOME/opmn/conf/opmn.xml, in the java-option property for the OC4J instance that corresponds to the HTTP node. | Yes<br><br>Edit the value to specify command-line arguments for the Java VM, such as java -Xmx512M to increase the maximum size of the Java VM's heap. |
| <b>Log File</b> to which to generate logs. If not specified, logs are generated to the console.                                                                                                                                                                         | N/A                                                                                                                                                                                            | Yes                                                                                                                                                    |
| <b>Log Level.</b> Verbosity level of the node log.<br>0 = disabled (no logging)<br>2 = low (error conditions only)<br>4 = medium (normal operation; default)<br>6 = high (debug information)<br>NTFS will not write into the node log unless the Log Level is set to 6. | Yes                                                                                                                                                                                            | Yes                                                                                                                                                    |
| <b>Remoter Log Level.</b> Verbosity level of the inter-process communication log.<br>0 = disabled (no logging)<br>2 = low (error conditions only; default)<br>4 = medium (normal operation)<br>6 = high (debug information)                                             | Yes                                                                                                                                                                                            | Yes                                                                                                                                                    |
| <b>Log Rotation Interval.</b> The interval in hours that the log file is archived and rotated. Specify 0 to disable log rotation.                                                                                                                                       | N/A                                                                                                                                                                                            | Yes                                                                                                                                                    |

| Property                                                                                                                                                      | HTTP Node | Regular Node |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|--------------|
| <b>Overwrite Log.</b> Whether any existing log file is overwritten each time the node starts. Defaults to false and appends the log to the existing log file. | N/A       | Yes          |

4. In addition to changing the properties listed in the preceding table, you can add, edit, and remove services and servers for this node.
5. Click **OK** to save the changes.

---

---

**Note:** Changes take effect when the node is restarted.

---

---

### Creating a Regular Node Configuration

1. From the Configuration section on the Oracle Files top-level page, click **Node Configurations**.
2. On the Node Configurations page, decide whether to create a new node from scratch or to base it on the properties of an existing node.
  - To create the node from scratch, click **Create**.
  - To base the node on an existing node, select that node's checkbox and click **Create Like**.

In both cases, the New Node Configuration page appears. If you selected **Create Like**, the properties have been filled in with those of the selected existing node.

**New Node Configuration**

Click "OK" to create the object, or "Cancel" to cancel this operation.  
 \* Indicates a required field

**General**

\* Name  Java Command

Type  
☐ HTTP Node  
☒ Non-HTTP Node  
Only HTTP nodes run in OC4J instances

Description

Access Control   
☐ Active  
☐ Guarded  
Applicable to non-HTTP nodes only

Log File   
Applicable to non-HTTP nodes only

Log Level   
 Remoter Log Level   
 Log Rotation Interval (hours)   
Applicable to non-HTTP nodes only  
 Set to 0 to disable log rotation  
☐ Overwrite Log

**Services** [Return to Top](#)

| Select         | Name | Configuration | Active |
|----------------|------|---------------|--------|
| No items found |      |               |        |

**Servers** [Return to Top](#)

You need to add an active Service before you can add any Server.

| Select         | Name | Configuration | Active | Service | Initial Priority | Initially Started |
|----------------|------|---------------|--------|---------|------------------|-------------------|
| No items found |      |               |        |         |                  |                   |

3. Enter or change the node information:
  - Name of the node.
  - Type of the node; select **Non-HTTP Node**.
  - Default services for the node. For each, the node configuration records:
    - Service name.
    - Which service configuration object provides the service's configuration properties.
    - Whether the service is currently active. Inactive services are not automatically started by the node.
  - The node's default servers. For each, the node configuration records:
    - Server name.

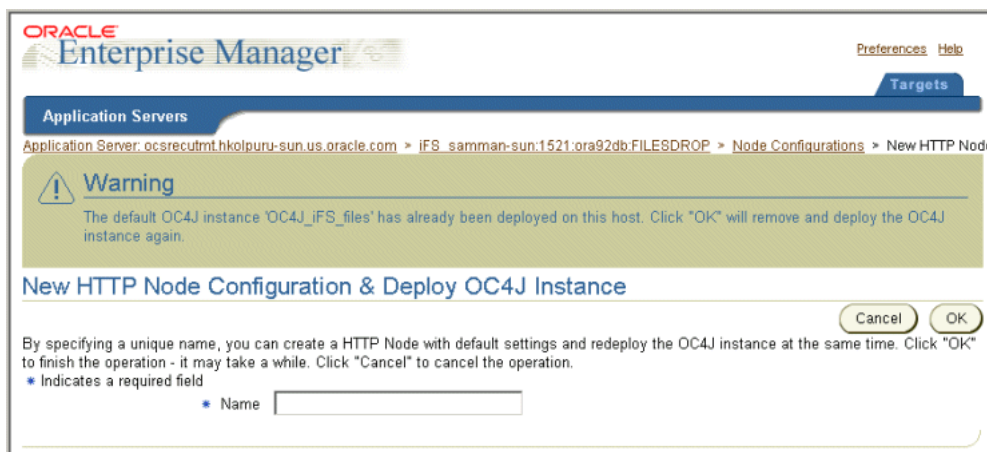
- Which server configuration object provides the server's configuration parameters.
- Whether the server is currently active. Inactive servers are not automatically loaded by the node.
- Name of the service against which the server should operate.
- Java thread priority of the server.
- Whether the server is automatically started once loaded.

4. Click **OK**.

### Creating an HTTP Node Configuration

You cannot follow exactly the same procedure as in "[Creating a Regular Node Configuration](#)" to create an HTTP node configuration. You need to create and deploy a corresponding OC4J instance for the HTTP node. To create an HTTP node and also deploy its OC4J instance:

1. From the Configuration section on the Oracle Files top-level page, click **Node Configurations**.
2. On the Node Configurations page, click **Create and Deploy HTTP Node**. The New HTTP Node Configuration & Deploy OC4J Instance page appears:



3. Enter the HTTP node name.

4. Click **OK**.

---

**Note:** This operation will deploy a default OC4J instance. If you already have an HTTP node on the host, this operation removes the currently deployed OC4J instance and redeploys the default OC4J instance again. Any custom changes that were made to the existing OC4J instance will be lost. This results in the original HTTP node not functioning anymore. You should delete the node configuration for the original HTTP node.

---

## Service Configuration

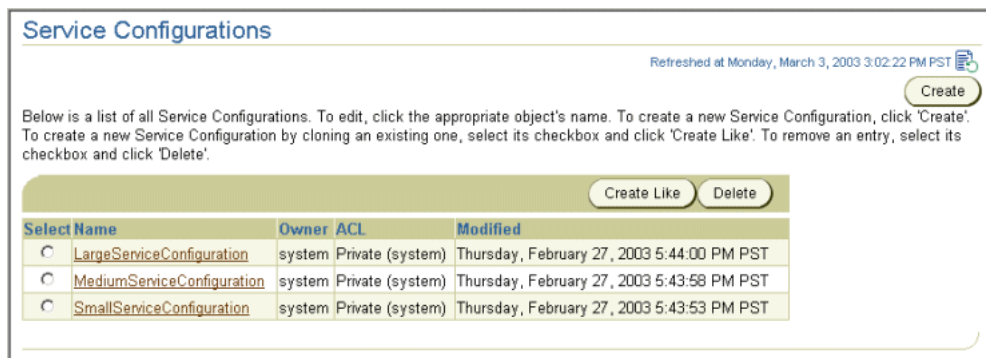
A *service configuration* holds the default values used when a service is started for an Oracle Files node. Each service configuration specifies values for properties such as the database instance and schema name of the Oracle Files repository, the sizes of the cache and database connection pools, the maximum number of sessions, and the service's default language and character set. (See [Appendix B, "Service Configuration Reference"](#) for a complete list of service configuration parameters.) Service configurations are uniquely named across the domain.

Whenever a new Oracle Files schema is created, three service configuration objects are generated:

- `SmallServiceConfiguration`
- `MediumServiceConfiguration`
- `LargeServiceConfiguration`

These objects are named to reflect the sizes of their data caches.

Use the Oracle Enterprise Manager Web site to create or edit service configuration objects (see [Figure 5-2, "Service Configurations Page"](#)). The services read their service configuration properties only when they start. You must stop and re-start a service for changes to take effect. The changes you make this way are applied each time you start a service and overwrite any changes you make on a particular service while it is running.

**Figure 5–2 Service Configurations Page**

Like the node configuration, you can dynamically change the service configuration properties, change to a different configuration, alter a service configuration permanently, or create a new service configuration.

### Changing a Service Configuration

1. From the Configuration section on the Oracle Files top-level page, click **Service Configurations**.
2. On the Service Configurations page, click the name of the service configuration you want to change. The Edit page appears.
3. You can change general information about the service as well as the properties of the service.

**General information.** Change the description of the service or the access control assigned to the service.

**Properties.** Click the name of the property you want to change to display the Edit page. Change the values shown as desired.

4. Click **OK** to save the changes.

---

**Note:** Changes take effect when the node is loaded or re-started.

---

### Creating a Service Configuration

1. From the Configuration section on the Oracle Files top-level page, click **Service Configurations**.

2. On the Service Configurations page, decide whether to create a new service from scratch or to base it on the properties of an existing node.
  - To create the service from scratch, click **Create**.
  - To base the service on an existing service, select that service's checkbox and click **Create Like**.

In both cases, the New Service Configuration page appears. If you selected **Create Like**, the properties have been filled in with those of the selected existing service.

### New Service Configuration

Click "OK" to create the object, or "Cancel" to cancel this operation.

★ Indicates a required field

#### General

★ Name

Description

Access Control

Private (system)

#### Properties

Previous

1-25 of 81

Next 25

| Select                | Name                                                   | Type    | Value |
|-----------------------|--------------------------------------------------------|---------|-------|
| <input type="radio"/> | IFS_SERVICE_ACLCACHE_EmergencyTrigger                  | INTEGER | 600   |
| <input type="radio"/> | IFS_SERVICE_ACLCACHE_NormalTrigger                     | INTEGER | 500   |
| <input type="radio"/> | IFS_SERVICE_ACLCACHE_PurgeTarget                       | INTEGER | 400   |
| <input type="radio"/> | IFS_SERVICE_ACLCACHE_Size                              | INTEGER | 750   |
| <input type="radio"/> | IFS_SERVICE_ACLCACHE_UrgentTrigger                     | INTEGER | 550   |
| <input type="radio"/> | IFS_SERVICE_CONNECTIONPOOL_READONLY_MaximumSize        | INTEGER | 20    |
| <input type="radio"/> | IFS_SERVICE_CONNECTIONPOOL_READONLY_MaximumSizeTimeout | INTEGER | 10000 |
| <input type="radio"/> | IFS_SERVICE_CONNECTIONPOOL_READONLY_MinimumSize        | INTEGER | 2     |

3. Enter a service name.
4. Enter a description of the service.
5. Assign an access level to the configuration by selecting from the Access Level list.
6. Add, remove, or update the new service's properties.

7. Click OK.

## Runtime Service Configuration

You can also dynamically configure the committed data cache, read-only connection pool, and the writeable connection pool while the service runs.

- **The Committed Data Cache** dynamically provides information about the percentage of cache hits and cache size and capacity and allows you to reset the cache statistics or change the cache configuration. Caching this data allows sessions to get the attribute values of frequently used objects without a database request, greatly improving performance and scalability. Data that has not been recently used is periodically purged from the cache.
  - **The Read-only Connection Pool** dynamically displays the total and allocated connections, the immediate, deferred, and failed allocations, and the average allocation time. The Read-only Connection Pool is a set of database connections shared by the sessions to perform database read operations. A minimum number of connections are created when the service is started. Depending on the number of concurrent operations performed by the sessions, and the nature of these operations, additional connections may be added to the pool up to a specified maximum. You can reset the Read-only Connection Pool statistics or change the configuration.
  - **The Writable Connection Pool** dynamically displays the total and allocated connections, the immediate, deferred, and failed allocations, and the average allocation time. The Writable Connection Pool is a set of database connections shared by the sessions to perform database read/write operations. A minimum number of connections are created when the service is started. Depending on the number of concurrent operations performed by the sessions, and the nature of these operations, additional connections may be added to the pool up to a specified maximum. You can reset the Writable Connection Pool statistics or change the configuration.
1. On the Oracle Files top-level page, click the node whose service you want to configure.
  2. On the Node page, click the service.
  3. On the Service page, scroll to the Configuration section.
  4. To configure the committed data cache, click **Committed Data Cache Configuration**. Continue with Step 5.

Or:



To configure the read-only or writeable connection pool, click **Connection Pool Configuration**. Continue with Step 6.

5. Change the parameters on the Committed Data Cache Configuration page as desired.

**Committed Data Cache Configuration**

Refreshed at Thursday, March 6, 2003 9:51:38 AM PST

Click "Apply" to commit the changes and remain on this page, "Revert" to discard the changes and restore to original values, or "Cancel" to cancel this operation.

\* Indicates a required field

\* Cache Capacity

You can click "Calculate" to figure purge triggers and target based on the cache capacity.

\* Normal Purge Trigger   
 \* Urgent Purge Trigger   
 \* Emergency Purge Trigger   
 \* Purge Target

| Parameter               | Description                                                                                                                                                                                                                                                                             |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cache Capacity          | The absolute maximum size of the service's data cache, in LibraryObjects. The service data cache holds the attribute values of recently used LibraryObjects. Defaults to 7500.                                                                                                          |
| Normal Purge Trigger    | The cache size, in LibraryObjects, at which the service data cache schedules a low-priority purge of data that has not been recently used. Defaults to 5000.                                                                                                                            |
| Urgent Purge Trigger    | The cache size, in LibraryObjects, at which the service data cache schedules a high-priority purge of data that has not been recently used. Must be greater than <code>IFS.SERVICE.DATACACHE.NormalTrigger</code> . Defaults to 5500.                                                   |
| Emergency Purge Trigger | The cache size, in LibraryObjects, at which the service data cache performs an immediate purge of data that has not been recently used. Must be greater than <code>IFS.SERVICE.DATACACHE.UrgentTrigger</code> but less than <code>IFS.SERVICE.DATACACHE.Size</code> . Defaults to 6000. |
| Purge Target            | The target cache size, in LibraryObjects, upon completion of a purge cycle. Must be less than <code>IFS.SERVICE.DATACACHE.NormalTrigger</code> . Defaults to 4000.                                                                                                                      |

6. Change the parameters on the Connection Pool Configuration page as desired.

Connection Pool Configuration

Refreshed at Thursday, March 6, 2003 10:13:21 AM PST

Cancel

Revert

Apply

Click "Apply" to commit the changes and remain on this page, "Revert" to discard the changes and restore to original values, or "Cancel" to cancel this operation.

Indicates a required field

Readonly Connection Pool

Minimum Number of Connections

2

Target Maximum Number of Connections

10

Absolute Maximum Number of Connections

20

Target Size Timeout (msec)

1,000

Maximum Size Timeout (msec)

10,000

Default Number of Rows Prefetched

0

Writeable Connection Pool

Minimum Number of Connections

2

Target Maximum Number of Connections

10

Absolute Maximum Number of Connections

20

Target Size Timeout (msec)

1,000

Maximum Size Timeout (msec)

10,000

Default Number of Rows Prefetched

0

The Read-only Connection Pool properties include:

| Property                               | Description                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Minimum Number of Connections          | The initial number of database connections in the read-only connection pool. Defaults to 2.                                                                                                                                                                                                                                                                                                                |
| Target Maximum Number of Connections   | The target maximum number of database connections in the read-only connection pool. Must be greater than or equal to <code>IFS.SERVICE.CONNECTIONPOOL.READONLY.MinimumSize</code> . Defaults to 10.                                                                                                                                                                                                        |
| Absolute Maximum Number of Connections | The absolute maximum number of database connections in the read-only connection pool. Must be greater than or equal to <code>IFS.SERVICE.CONNECTIONPOOL.READONLY.TargetSize</code> . Defaults to 20.                                                                                                                                                                                                       |
| Target Size Timeout                    | The maximum period, in milliseconds, that the service will postpone a connection allocation request when there are no unallocated connections, if the current size of the read-only connection pool is greater than or equal to its target size but less than the maximum size. If a database connection does not become available within this period, a new connection will be created. Defaults to 1000. |
| Maximum Size Timeout                   | The maximum period, in milliseconds, that a service will postpone a connection allocation request when there are no unallocated connections, if the current size of the read-only connection pool is equal to its maximum size. If a database connection does not become available within this period, the allocation request will fail and an exception will be thrown. Defaults to 10,000.               |

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The Writeable Connection Pool properties include:

| Property                               | Description                                                                                                                                                                                                                                                                                                                                                                                               |
|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Minimum Number of Connections          | The initial number of database connections in the writable connection pool. Defaults to 2.                                                                                                                                                                                                                                                                                                                |
| Target Maximum Number of Connections   | The target maximum number of database connections in the writable connection pool. Must be greater than or equal to <code>IFS.SERVICE.CONNECTIONPOOL.WRITEABLE.MinimumSize</code> . Defaults to 10.                                                                                                                                                                                                       |
| Absolute Maximum Number of Connections | The absolute maximum number of database connections in the writable connection pool. Must be greater than or equal to <code>IFS.SERVICE.CONNECTIONPOOL.WRITEABLE.TargetSize</code> . Defaults to 20.                                                                                                                                                                                                      |
| Target Size Timeout                    | The maximum period, in milliseconds, that the service will postpone a connection allocation request when there are no unallocated connections, if the current size of the writable connection pool is greater than or equal to its target size but less than the maximum size. If a database connection does not become available within this period, a new connection will be created. Defaults to 1000. |
| Maximum Size Timeout                   | The maximum period, in milliseconds, that a service will postpone a connection allocation request when there are no unallocated connections, if the current size of the writable connection pool is equal to its maximum size. If a database connection does not become available within this period, the allocation request will fail and an exception will be thrown. Defaults to 10,000.               |

## Server Configuration

A *server configuration* holds the default values used when a server or agent is started for an Oracle Files node. Server configurations specify their server types as Java classnames. In addition to the server type, each server configuration specifies values for parameters relevant to that type (see [Appendix C, "Server Configuration Properties"](#)). For example, a server configuration for the Oracle Files FTP server specifies the FTP port number, whether anonymous FTP connections are allowed, and the connection time-out period.

Most of the server configuration information is used by the server itself. Only the server Java class entry is used by the node to instantiate a new server.

When Oracle Files is installed, server configurations are automatically created for each protocol server and agent. You can edit these configurations or create

additional server configurations using the Oracle Enterprise Manager Web site. Any changes you make will be reflected the next time the server is loaded or started.

To change to a different server configuration, you must stop the server and unload it, make the changes, then load and restart the server.

### **Abstract vs. Non-abstract Server Configuration**

Server configuration objects get created for each protocol server and agent as part of the configuration of Oracle Files. These objects in turn have a number of properties that are used by the respective servers and agents. These are assigned certain values by default.

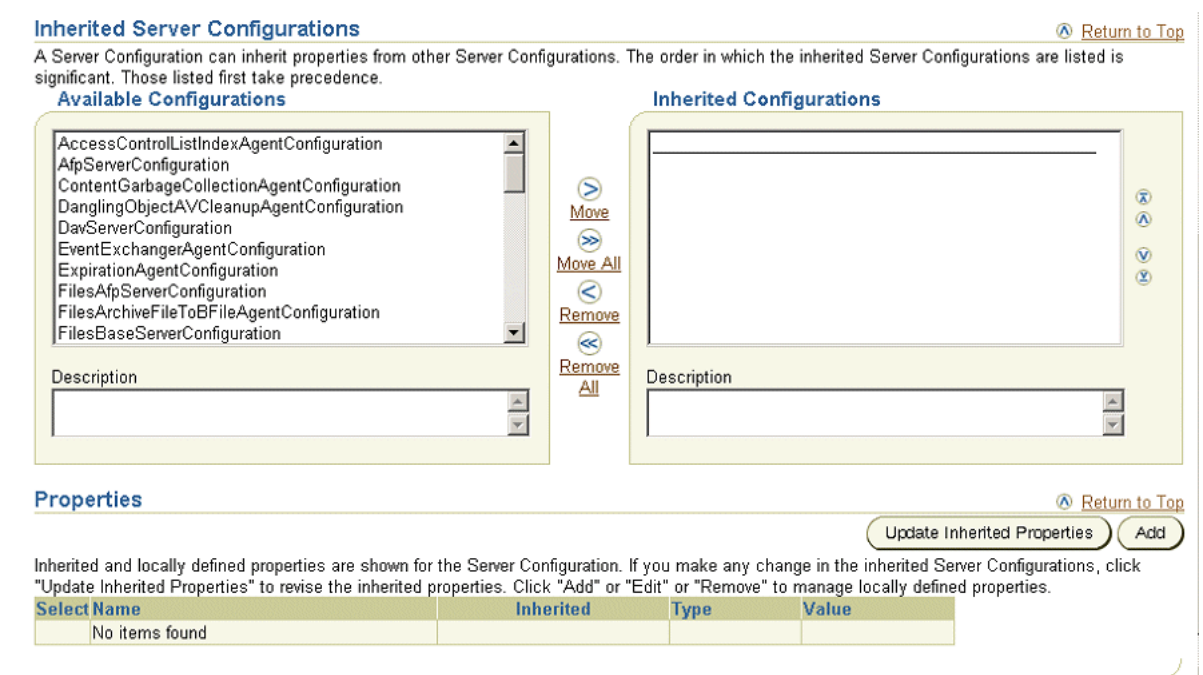
Server configuration objects themselves are of two types:

- The abstract type is used to set base values for the properties, that can be inherited by some other configuration. You cannot start a server from any abstract server configuration.
- The non-abstract type can be used to start servers.

When you create a new server configuration, you can choose to inherit the properties from one or more server configurations. These in turn bring into play their own properties and their respective values. You could choose to use the same values as inherited or, alternatively, use different values. This is done by creating a new attribute with the same name for the new server configuration object that you just created.

Inheritance operations are accessed from the New Server Configuration page (Figure 5-3). See "[Creating a Server Configuration](#)" on page 5-29 for more information on creating new server configurations.

Figure 5–3 Inheritance Operations on the New Server Configuration Page



**Change Values of Properties** Create a new property in the inherited server configuration object that is identical in name to the one in the parent, but has values that override those in the parent server configuration object.

**View Inherited Properties** View the inherited properties to determine whether the property in the current server configuration object is local to this object or taken from a parent server configuration object.

You can also differentiate between inherited server configuration objects and those that are local to the server configuration.

**Changing a Server Configuration**

- 1. From the Configuration section on the Oracle Files top-level page, click **Server Configurations**.
- 2. On the Server Configurations page, click the name of the server configuration you want to change.

3. On the Edit page, you can change general information about the server as well as the properties of the server.
  - In the General section, change the description of the server or the access control assigned to the server. Select or de-select **Abstract**.
  - In the Inherited Server Configurations section, select or de-select the existing configurations from which the configuration should inherit properties.
  - In the Properties section, click **Show Inherited Properties** to display the properties of the inherited server configurations.
    - Delete any of the properties by selecting the checkbox and clicking **Remove**.
    - You can edit any property that is underlined by clicking the property name to display the Edit page. Change the values and click **OK**.
    - To add a new property, in the Properties section, click **Add**.
    - On the Add Property page, enter the values shown and click **OK**.
4. When the server configuration is complete, click **OK**.

---

---

**Note:** Changes take effect when the server is reloaded.

---

---

### Stopping and Unloading Servers

1. From the Oracle Files top-level page, click the name of the node that runs the server you want to manage.
2. From the Node page, select the server you want to unload.
3. Click **Stop**. The status should now be "Stopped."
4. If you want to delete the server from the configuration, select the server and click **Unload**. The server is removed from the Servers list.
5. You can now make the desired changes to the server configuration. Click the name of the server. On the Edit page, only properties that are underlined may be edited. When your edits are complete, click **OK**.
6. Click **Load**.
7. Click **Start**.

## Creating a Server Configuration

1. From the Configuration section on the Oracle Files top-level page, click **Server Configurations**.
2. On the Server Configurations page, decide whether to create a new server configuration from scratch or to base it on the properties of an existing server.
  - To create the server configuration from scratch, click **Create**.
  - To base the server configuration on an existing server configuration, select that server's checkbox and click **Create Like**.

In both cases, the New Server Configuration page appears. If you selected **Create Like**, the properties have been filled in with those of the selected existing server.

3. On the New Server Configuration page, in the General section, enter a name for the new server configuration.
4. Check the **Abstract** box to make this server configuration not instantiable.
5. In the Inherited Server Configurations section, select the existing configurations from which the new configuration should inherit properties. Select configurations from the Available Configurations list and move them to the Selected Configurations list.
6. In the Properties section, click **Update Inherited Properties** to display the properties of the inherited server configurations.
  - Delete any of the properties by selecting the checkbox and clicking **Remove**.
  - You can edit any property that is locally defined (not inherited) by selecting the property and clicking **Edit** to display the Edit page. Change the values and click **OK**.
  - To add a new property, in the Properties section, click **Add**.
  - On the Add Property page, enter the name, type, and value and click **OK**.
7. When the server configuration is complete, click **OK**.

## Oracle Files Configuration Options

Oracle Enterprise Manager Web site provides additional configuration options critical to the Oracle Collaboration Suite. These components include:

- [Oracle Collaboration Suite Search Configuration](#)

- [Printing Services](#)
- [MIME Type Formats](#)

## Oracle Collaboration Suite Search Configuration

Oracle Collaboration Suite Search, also known as Federated Search, is an application that lets users search configured applications in the Oracle Collaboration Suite. Oracle Collaboration Suite Search can search the following applications:

- Oracle Files
- Oracle Unified Messaging (Email, Voicemail, and Fax)
- Oracle Ultra Search web crawler

Enabling Oracle Collaboration Suite Search is a post-configuration step dependent on Oracle Email and Oracle Ultra Search configuration. You must configure Oracle Files in order to use Oracle Collaboration Suite Search.

To configure Oracle Collaboration Suite Search:

1. From the Configuration section of the Oracle Files top-level page, click **Federated Search Configuration**.
2. On the Federated Search Configuration page, you can begin setting search configuration parameters. See [Table 5–3, "Federated Search Configuration Properties"](#) for a list of properties.
3. Click **Apply**.



**Figure 5–4 Federated Search Configuration Page**

**Federated Search Configuration**

Click "Apply" to commit the changes and remain on this page, "Revert" to discard the changes and restore to original values, or "Cancel" to cancel this operation.

|                                |                                                                           |
|--------------------------------|---------------------------------------------------------------------------|
| Mail Configured                | <input type="radio"/> Yes<br><input checked="" type="radio"/> No          |
| Ultra Search Configured        | <input checked="" type="radio"/> Yes<br><input type="radio"/> No          |
| Web Mail Base URL              | <input type="text" value="http://email.example.com:7778/um/traffic_cop"/> |
| Ultra Search Schema Name       | <input type="text" value="US_schema"/>                                    |
| Ultra Search Schema Password   | <input type="password" value="*****"/>                                    |
| Confirm Password               | <input type="password" value="*****"/>                                    |
| Ultra Search Connection String | <input type="text" value="jdbc:oracle:thin@sunmachine4200:1521:test"/>    |
| Ultra Search Mail Page         | <input type="text"/>                                                      |

### Configuring Search Parameters

To enable Oracle Collaboration Suite Search for Oracle Email and Oracle Ultra Search, you must set parameters on the Federated Search Configuration page. If you do not enable Oracle Email or Oracle Ultra Search, the Search page in Oracle Collaboration Suite will only search Oracle Files.

---

**Note:** After you set properties on the Federated Search Configuration page, you need to perform several post-configuration steps in Oracle Email and Oracle Ultra Search. See the *Oracle Email Administrator's Guide* and the *Oracle Ultra Search User's Guide* for more information.

---

Except for the Ultra Search Schema Password, all properties are stored as Oracle Files domain properties. The Ultra Search Schema Password is stored as an encrypted repository parameter.

**Table 5–3 Federated Search Configuration Properties**

| Property                       | Description                                                                                                                                                                                                                                                                                         |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mail Configured                | Click Yes to enable searching of Oracle Email through Oracle Collaboration Suite Search. If you click Yes, a "Mail" checkbox will be included on the Oracle Collaboration Suite Search page. Click No if you do not wish to enable searching of Oracle Email, or if you are not using Oracle Email. |
| Ultra Search Configured        | Click Yes to enable the Oracle Ultra Search application. If you click Yes, a "Web Sites" checkbox for Oracle Ultra Search will be included on the Oracle Collaboration Suite Search page. Click No if you do not wish to enable the application.                                                    |
| Web Mail Base URL              | The base URL to access Oracle WebMail messages. The URL must end with /um/traffic_cop. For example, http://email.example.com:7778/um/traffic_cop                                                                                                                                                    |
| Ultra Search Schema Name       | The Oracle Ultra Search schema name.                                                                                                                                                                                                                                                                |
| Ultra Search Schema Password   | The Oracle Ultra Search schema password.                                                                                                                                                                                                                                                            |
| Confirm Password               | Confirmation of the Oracle Ultra Search schema password.                                                                                                                                                                                                                                            |
| Ultra Search Connection String | A JDBC connection string for the database that contains the Oracle Ultra Search installation. The string must begin with jdbc:oracle:thin:@. For example, jdbc:oracle:thin:@<infrastructure host>:1521:iasdb                                                                                        |
| Ultra Search Mail Page         | This property is not used in Oracle Collaboration Suite.                                                                                                                                                                                                                                            |

## Printing Services

Oracle Files supports printing to line printer daemon (LPD) printers using the SMB protocol. To integrate with—and allow users to print from—the Oracle Collaboration Suite, a printer must be physically connected to the network using the TCP/IP protocol. This means that a host name or an IP address is required to establish a connection with the network.

Administrators can add, modify, and delete printers:

1. On the Oracle Files top-level page, select **Printers** from the Oracle Files Administration section.
2. On the Printers page, you can:
  - Click **New Printer**, and on the Printers page enter the printer configuration information.
  - Select a printer and click **Delete**.

- Click an existing printer name to modify the printer configuration information.

**Figure 5–5 Adding a Printer**

For information on entering the printer configuration information and completing the process of adding, modifying, or deleting a printer, see the online help for the Oracle Enterprise Manager Web site.

## Notes

- After adding and modifying a printer, both the SMB server and the Print Agent must be stopped and then restarted before the new settings are enabled. Click the node from the Oracle Files top-level page, and then stop and start the Print Agent and the SMB server from the Node page.
- After a printer is configured, Windows users must use the "Add Printer" wizard in the Windows Control Panel to add and enable the printer.

## MIME Type Formats

Oracle Files associates a format (MIME type) with each document. The format of a document specifies the way document information is encoded. To determine how to store content, Internet browsers require document formats (for example, binary or text/xml).

Specifying document formats becomes especially important when indexing a format type; in Oracle Files, indexing a format type is the basis of content searching. If a format is not indexed, searches will fail. However, searches for content can also fail when indexed incorrectly. For example, on the New Format page an

Administrator can add a new format called .fm, a binary Adobe FrameMaker file. However, an administrator can then erroneously associate a text/plain format to the binary .fm file. As a result, searches will not return any content contained in a FrameMaker file because Oracle Files "expects" to find text/plain format content in a binary file.

Administrators can create, modify, and delete formats.

1. From the Oracle Files Administration section of the Oracle Files top-level page, select **Formats**.
2. On the Formats page, you can:
  - Click **New Format**, and on the New Format page enter the MIME type format information. Using the default system formats requires no administration; using supplemental and custom formats does.
  - Select a format and click **Delete**.
  - Click an existing format name and edit the MIME type format information.

**Figure 5–6 Adding a New MIME Type Format**

Oracle Files - New Format

Click "OK" to create the object, or "Cancel" to cancel this operation.  
 \* Indicates a required field

\* Name

\* MimeType

\* Extension

☐ Binary  
☐ Indexed

For information on entering the MIME type format configuration information and completing the process of adding, modifying, or deleting MIME type formats, see the online help for the Oracle Enterprise Manager Web site.

## Monitoring Domain, Node, and Service Performance

In addition to starting and stopping the domain and nodes and changing properties of services and servers, you can monitor domain, node, and service performance on the Oracle Enterprise Manager Web site.

You can use this information to get an overall picture of the domain's performance or determine whether the domain's configuration needs modification.

## Monitoring Domain Performance

1. From the Performance section on the Oracle Files top-level page, click **Domain Performance & Statistics**. The Domain Performance & Statistics page appears.

**Domain Performance & Statistics**

**General** Documents Sessions Overall Usage

**General Information**

Refreshed at Thursday, March 6, 2003 11:50:39 AM PST

Database URL: `jdbc:oracle:thin:@(description=(address=(host=ifstst1.us.oracle.com)(protocol=tcp)(port=1521))(connect_data=(service_name=ifstst1.us.oracle.com)))`

|                          |                  |
|--------------------------|------------------|
| Repository Schema        | ocsv2bb          |
| Number of Users          | 87               |
| Users Owning Documents   | 8                |
| Quota Allocated to Users | 2.05 GB          |
| Quota Consumed by Users  | 48.83 MB (2.33%) |

**General** Documents Sessions Overall Usage

From this page, you can access various statistics and usage charts, tables, and summaries to evaluate system performance and guide you in making changes to your configuration, if necessary. Table 5-4 lists the various charts, graphs, and tables and shows you which subtab and view names you should select to access the information.

2. Select one of the four subtabs:
  - The General subtab provides general information and information about document storage.
  - The Documents subtab provides systemwide information about documents.
  - The Sessions subtab allows you to view the connected sessions by server type.
  - The Overall Usage subtab lets you monitor sessions, threads, and memory by node and host.
3. To refresh the information, click **Refresh**.
4. To navigate between pages, make a selection from the Select a View list and click **Go**.

**Table 5–4 Reference to Statistical Information about the Domain and Node**

| <b>Chart, Graph, or Table Name</b>  | <b>Statistics or information Displayed</b>                                                                                                                                                                                                                                                                                                                                                                                                       | <b>Subtab</b> | <b>Select a View item</b> |
|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------------|
| Document Table                      | Document distribution by MIME type                                                                                                                                                                                                                                                                                                                                                                                                               | Documents     | Table                     |
| Document Distribution Chart         | Space consumed displayed by MIME type (displays a bar chart comparing quantities of the different types of documents stored in the system)                                                                                                                                                                                                                                                                                                       | Documents     | Distribution Chart        |
| Document Consumption Chart          | Space consumed displayed by document type                                                                                                                                                                                                                                                                                                                                                                                                        | Documents     | Consumption Chart         |
| General Information                 | <p>A tabular display listing:</p> <ul style="list-style-type: none"> <li>■ Database URL (connect string) for the database containing the Oracle Files schema where the statistics are calculated</li> <li>■ Schema name for the Oracle Files instance</li> <li>■ Total number of user accounts</li> <li>■ Total users who own documents in the system</li> <li>■ Quota allocated for all users</li> <li>■ Quota consumed by all users</li> </ul> | General       | N/A                       |
| Session Table                       | Tabular display of the total number of connected sessions per protocol server (AFP, FTP, and so on). Agents display as having 0 connections.                                                                                                                                                                                                                                                                                                     | Sessions      | Table                     |
| Session Chart                       | Pie chart of total number of connected sessions per protocol server. (The same information as the Session Table but in a graphical pie chart display.)                                                                                                                                                                                                                                                                                           | Sessions      | Chart                     |
| Overall Usage Table by Node         | Total connected sessions, threads, and memory consumed by each node in the domain.                                                                                                                                                                                                                                                                                                                                                               | Overall Usage | Table by Node             |
| Overall Usage Table by Host         | Total connected sessions, threads, and memory consumed by each host in the domain.                                                                                                                                                                                                                                                                                                                                                               | Overall Usage | Table by Host             |
| Overall Session Usage Chart by Node | Bar graph showing the total number of connected sessions and consumed threads by each node.                                                                                                                                                                                                                                                                                                                                                      | Overall Usage | Session Chart by Node     |

**Table 5–4 (Cont.) Reference to Statistical Information about the Domain and Node**

| Chart, Graph, or Table Name         | Statistics or information Displayed                                                        | Subtab        | Select a View item    |
|-------------------------------------|--------------------------------------------------------------------------------------------|---------------|-----------------------|
| Overall Session Usage Chart by Host | Bar graph showing the total number of connected sessions and consumed threads by each host | Overall Usage | Session Chart by Host |
| Overall Memory Usage Chart by Node  | Bar graph showing the total amount of memory consumed by each host                         | Overall Usage | Memory Chart by Node  |
| Overall Memory Usage Chart by Host  | Bar graph showing the total amount of memory consumed by each node                         | Overall Usage | Memory Chart by Host  |

## Monitoring Node Performance

1. From each Oracle Files Node Page, click **Node Performance & Statistics** to display the summary-level information about the node.

### Node Performance & Statistics

Refreshed at Thursday, March 6, 2003 11:55:14 AM PST 

**Overview**

Allocated Heap Size **20566KB**  
Total Heap Size **24440KB**  
Thread Count **48**

**Properties**

| Name                                       | Value                                 |
|--------------------------------------------|---------------------------------------|
| Internet File System Version (beans-side)  | 9.0.4.1.0                             |
| Internet File System Version (server-side) | 9.0.4.1.0                             |
| Java VM Default Timezone                   | America/Los_Angeles                   |
| Java VM Default Locale                     | en_US                                 |
| IP Address                                 | dsunrde10.us.oracle.com/130.35.54.200 |
| Java Vendor                                | Sun Microsystems Inc.                 |
| Java Version                               | 1.3.1_02                              |
| Java Home                                  | /private/vmallu/ocsv2_mtier/jdk/jre   |
| OS Name                                    | SunOS                                 |
| OS Architecture                            | sparc                                 |
| OS Version                                 | 5.8                                   |

## Monitoring Service Performance

1. On the Oracle Files top-level page, click the node whose service you want to monitor.
2. On the Node page, click the service.

- 3. On the Service page, scroll to the Performance section.
- 4. Click the link to the statistics you want to view: **Committed Data Cache Statistics** or **Connection Pool Statistics**.

Figure 5–7 Committed Data Cache Statistics



Figure 5–8 Connection Pool Statistics



## Log Files

### Oracle Enterprise Manager Web site Logs

The Oracle Enterprise Manager Web site logs are located in:

`$ORACLE_HOME/sysman/log: em-servlet.log, emd.log, em-application.log`

### Oracle Files Logs

Log files are generated by the domain controller and each node.



- The domain controller log records major state transitions of its nodes (such as started, failed, or restarted) and provides centralized data on overall domain health. By default, `DomainController.log` is located in:

```
$ORACLE_HOME/ifs/files/log/<transferred domain name>/DomainController.log
```

- The regular node log records the same type of information for each node. This log is useful for troubleshooting protocol servers and agents. All errors are logged with stack traces. The log file is specified in its `NodeConfiguration`, by default:

```
$ORACLE_HOME/ifs/files/log/<transferred domain name>/<node name>.log
```

- The HTTP node log records the same type of information for each HTTP node. This log is useful for troubleshooting the Oracle Files application, the WebDAV server, and Oracle FileSync. All errors are logged with stack traces. By default, the log file is located in:

```
$ORACLE_HOME/j2ee/OC4J_ifs_files/application-deployments/files/OC4J_ifs_files_default_island_1/application.log
```

- The `ifsctl` log is located in:

```
$ORACLE_HOME/ifs/files/log/ifsctl.log
```

You can set various options for these log files, such as whether to overwrite the log each time the domain is started, through the domain and node configuration properties (see "[Domain Properties](#)" and "[Node Configuration](#)").



---

## Maintenance and Tuning

This chapter provides important information about on-going system maintenance, tuning, and recovery. As with any production system, your implementation of Oracle Files should include a basic disaster recovery plan that ensures 24x7 operations, regardless of system failures. To manage potentially exponential growth of data in an Oracle Files instance, the system provides some unique capabilities, such as LOB (large objects) file archiving.

This chapter includes the following topics:

- [Backup and Recovery](#)
- [LOB \(Large Objects\) Management](#)
- [Performance Tuning](#)
- [Analyzing Performance Problems](#)

### Backup and Recovery

Planning for failures is one of the most important jobs of any system administrator or DBA. Be sure to implement a daily or weekly backup plan that meets the needs of your business and operations environment. Take advantage of the Oracle database backup capabilities, built right into the database.

Always back up the system before upgrading, migrating new data, or making other major changes. See *Oracle9i Backup and Recovery Concepts* for additional information.

---

**Note:** In addition to the Oracle Files schema, there are three "special" schemas that ensure secure connectivity to other systems: IFSSYS\$CM, IFSSYS\$DR, and IFSSYS\$ID. When you back up your system, make sure to include these schemas.

---

## LOB (Large Objects) Management

Oracle Files data is comprised of content and metadata. The majority of data stored in Oracle Files is content and is stored online in LOBs (Large Objects). Content stored in Oracle Files is stored in database tablespaces. Oracle Files makes use of the Large Object (LOB) facility of the Oracle database. All documents are stored as Binary Large Objects (BLOBs), which is one type of LOB provided by the database. See ["Provide Adequate Storage to Improve Performance"](#) on page 6-5 for more information.

Through BLOB management, Oracle Files provides data archiving. Content is periodically moved from BLOBs to BFILE. The content is still accessible, of course, and is visible as any normal content would be when users are browsing or searching.

### Moving Content Off-line or Near-line

As the amount of content stored increases, it may become desirable to move content to a cheaper medium. BFILE support provides off-line and near-line storage.

In both off-line and near-line storage, content that is infrequently accessed is moved from expensive online media, such as a disk array, to a cheaper off-line medium, such as tape. The metadata and search indexes are kept online and are readily available. The difference between off-line and near-line storage is in the automation and transparency of moving the data between storage media. Near-line storage is also known as a Hierarchical Storage Manager (HSM) system.

Oracle Files provides transparent access to content stored as either a BLOB (online storage) or a BFILE (near-line storage). A BFILE is a read-only Oracle data type consisting of a directory object and a filename. Writing to a read-only BFILE results in the content being reloaded as a BLOB, where the modifications are made. The new content will be indexed.

End users will be unaware of where their content is stored. Administrators, however, must be aware of where content is stored. For example, when managing indexing by Oracle Text, administrators need to know that content can be indexed only in a BLOB. Once a document is indexed, the read-only nature of BFILES allows Oracle Files to maintain the index indefinitely.

### Moving Content to BFILES

By default, Oracle Files is configured to move content from the Archive to BFILES. The following two agents control the behavior:

- FilesArchiveFileToBFileAgent
- FilesDelayedArchiveFileToBFileAgent

BLOBs in the Archive are moved to BFILEs on a periodic basis. See ["Files-Specific Server Configuration"](#) on page C-11 for more information.

**Performance Tuning** The file the BFILE points to is located in the database's \$ORACLE\_HOME/ifsfiles/<files schema>. UNIX users may configure the real location of the BFILE using symbolic links. Windows users must use this BFILE base path.

**Specify the Relative Path** From the base path, the FilesArchiveFileToBFile Agent and the FilesDelayedArchiveFileToBFileAgent associate a relative path (the complete path to the BFILE's file is the base path plus a relative path). The path now looks like this:

```
$ORACLE_HOME/ifsfiles/<files schema>/<yyyy>/<dd>/<mm>/<hh>/ifsfile_<id>
```

ifsfile\_<id> is the file naming pattern that associates a unique ID to each piece of content.

**Use Symbolic Linking to Change the Storage Location (UNIX only)** You can create a symbolic link to connect the base file location to a different location—an HSM system, a tape backup system, etc.—rather than limit your BFILE storage to the database's \$ORACLE\_HOME.

## Performance Tuning

Performance is typically affected by network input/output (I/O), hard-disk drive I/O, memory (random access memory) I/O, or some combination of these three or other factors. Adjusting one of the factors sometimes moves the bottleneck to a new location, so you must approach the tuning task in a logical manner and ensure that you're not simply moving a bottleneck to a new location.

The performance tips in this section cover the basics and include:

- [Run the Oracle Files analyze.sql Script Frequently](#)
- [Provide Adequate Storage to Improve Performance](#)

See the *Oracle9i Database Performance Tuning Guide and Reference* for complete information.

## Run the Oracle Files `analyze.sql` Script Frequently

Oracle Files uses Oracle's Cost-Based Optimizer (CBO) to determine the most efficient way to execute SQL statements. For the CBO to work properly, the Oracle Files `analyze.sql` script should be run as part of regular Oracle Files operations, especially after large volume changes to the data, such as after users have loaded a large number of files into the instance. For more information about the Cost-Based Optimizer, see the *Oracle9i Database Performance Tuning Guide and Reference*.

Run the script during non-busy periods to avoid impeding performance for users.

The `analyze.sql` script, which makes calls to the `DBMS_STATS` package, exports schema statistics to a backup table, so you can restore statistics later, if necessary, as discussed in "[Restoring Prior Statistics](#)". To run the script:

```
cd $ORACLE_HOME/files/admin/sql
sqlplus <files schema> /<password> @analyze.sql <files schema>
```

This script may take a while to run, especially if Oracle Files contains a large number of documents.

### Restoring Prior Statistics

If, for any reason, you want to restore previous statistics, you can do so by executing the following statements:

```
SQL> select stat_id from my_stat_backup_table;
SQL> call dbms_stats.import_schema_stats
      ('<files schema>', 'my_stat_backup_table', <name of stat id>,
      '<files schema>');
```

Before gathering new statistics, the `analyze.sql` script exports backup statistics to the `IFS_BACKUP_STATS` table, marking the set of statistics with a timestamp. You can query the table for existing saved sets by executing this SQL statement:

```
SQL> select distinct statid from ifs_backup_stats;
```

This query returns a list of all statistics by `statid` (the date and time stamp). For example:

```
STATID
-----
01-MAY-02 02:15.36
04-MAY-02 20:00.15
08-MAY-02 02:15.48
11-MAY-02 06:21.40
11-MAY-02 20:15.37
```

You can then restore the statistics from a day and time when you know your performance was better. For example, if you find that after using the statistics from your 8:00 pm running of `analyze` that performance is no better or worse, then you can restore your statistics from earlier that day, or from a prior set altogether:

```
SQL> @import_backup_stats.sql <user_name> '08-MAY-02 06:21.40'
```

## Provide Adequate Storage to Improve Performance

The largest consumption of disk space occurs on the disks that actually contain the documents residing in Oracle Files, namely the Indexed Medias and Non-Indexed Medias tablespaces. This section explains how the documents are stored and how to calculate the amount of space those documents will require.

### Document Storage and Sizing Issues

BLOBs provide for transactional semantics much like the normal data stored in a database. To meet the criteria of transactional semantics, BLOBs must be broken down into smaller pieces which are individually modifiable and recoverable. These smaller pieces are referred to as chunks. Chunks are actually a group of one or more sequential database blocks from a tablespace that contains a BLOB column.

Both database blocks and chunk information within those blocks (BlockOverhead) impose some amount of overhead for the stored data. BlockOverhead is presently 60 bytes per block and consists of the block header, the BLOB header, and the block checksum. Oracle Files configures its BLOBs to have a 32 K chunk size. As an example, assume that the `DB_BLOCK_SIZE` parameter of the database is set to 8192 (8 K). A chunk would require four contiguous blocks and impose an overhead of 240 bytes. The usable space within a chunk would be  $32768 - 240 = 32528$  bytes.

Each document stored in Oracle Files will consist of some integral number of chunks. Using the previous example, a 500K document will actually use  $512000 / 32528 = 15.74 = 16$  chunks. Sixteen chunks will take up  $16 * 32 \text{ K} = 524288$  bytes. The chunking overhead for storing this document would then be  $524288 - 512000 = 12288$  bytes which is 2.4 percent of the original document's size. The chunk size used by Oracle Files is set to optimize access times for documents. Note that small documents, less than one chunk, will incur a greater disk space percentage overhead since they must use at least a single chunk.

Another structure required for transactional semantics on BLOBs is the BLOB Index. Each BLOB index entry can point to eight chunks of a specific BLOB object (`NumLobPerIndexEntry = 8`). Continuing the example, whereas a 500 K document

takes up 16 chunks, two index entries would be required for that object. Each entry takes 46 bytes (LobIndexEntryOverhead) and is then stored in an Oracle B-Tree index, which in turn has its own overhead depending upon how fragmented that index becomes.

The last factor affecting BLOB space utilization is the PCTVERSION parameter used when creating the BLOB column. For information about how PCTVERSION works, please consult the *Oracle9i SQL Reference*.

Oracle Files uses the default PCTVERSION of 10 percent for the BLOB columns it creates. This reduces the possibility of "ORA-22924 snapshot too old" errors occurring in read consistent views. By default, a minimum of a 10 percent increase in chunking space must be added in to the expected disk usage to allow for persistent PCTVERSION chunks.

For large systems where disk space is an issue, set the PCTVERSION to 1 to reduce disk storage requirements. This may be done at any time in a running system with these SQL commands:

```
alter table odmm_contentstore modify lob (globalindexedblob) (pctversion 1);
alter table odmm_contentstore modify lob (intermediablob) (pctversion 1);
alter table odmm_contentstore modify lob (intermediablob_t) (pctversion 1);
alter table odmm_nonindexedstore modify lob (nonindexedblob2) (pctversion 1);
```

The steps for calculating BLOB tablespace usage are as follows:

1. Calculate the number of chunks a file will take up by figuring the number of blocks per chunk and then subtracting the BlockOverhead (60 bytes) from the chunk size to get the available space per chunk.
2. Divide the file size by the available space per chunk to get the number of chunks.

```
chunks = roundup(FileSize/(ChunkSize-((ChunkSize/BlockSize) *
BlockOverhead)))
```

For example, if FileSize = 100,000, ChunkSize = 32768, Blocksize = 8192, and BlockOverhead = 60, then Chunks = roundup (100000 / (32768 - ((32768 / 8192) \* 60))) = 4 Chunks.

3. Calculate the amount of disk space for a file by multiplying the number of chunks times the chunk size and then multiplying that result by the PCTVERSION factor. Then add the space for NumLobPerIndexEntry (8) and LobIndexEntryOverhead (46 bytes).

```
FileDiskSpaceInBytes = roundup(chunks*ChunkSize*PctversionFactor) +
roundup(chunks/NumLobPerIndexEntry*LobIndexEntryOverhead)
```



Continuing from the preceding example,  $\text{chunks} = 4$ ,  $\text{ChunkSize} = 32768$ ,  $\text{PctversionFactor} = 1.1$ ,  $\text{NumLobPerIndexEntry} = 8$ , and  $\text{LobIndexEntryOverhead} = 46$ , so  $\text{FileDiskSpaceInBytes} = \text{roundup}(4 * 32768 * 1.1) + (\text{roundup}(4/8) * 46) = 144226 \text{ FileDiskSpaceInBytes}$ .

4. Calculate the total disk space used for file storage by summing up the application of these formulas for each file to be stored in the BLOB.

`TableSpaceUsage = sum(FileDiskSpaceInBytes) for all files stored`

Oracle Files creates multiple BLOB columns. The space calculation must be made for each tablespace based upon the amount of content that will qualify for storage in each tablespace.

### Oracle Files Metadata and Infrastructure

The Oracle Files server keeps persistent information about the file system and the contents of that file system in database tables. These tables and their associated structures are stored in the Oracle Files Primary tablespace. These structures are required to support both the file system and the various protocols and APIs that make use of that file system.

The administration and planning tasks of this space should be very similar to operations on a normal Oracle database installation. You should plan for approximately 6 K of overhead per document to be used from this tablespace, or about 2 percent of the overall content. If there is a significant number of custom metadata, such as attributes, subclasses or categories, this overhead should be much larger.

The initial disk space allocated for this tablespace is approximately 50 MB for a default installation. Of the 50 MB, 16 MB is actually used at the completion of installation. This includes instantiations for all required tables and indexes and the metadata required for the 700+ files that are loaded into Oracle Files as part of the installation. Different tables and indexes within this tablespace will grow at different rates depending on which features of Oracle Files get used in a particular installation.

## Analyzing Performance Problems

After ensuring that you have run statistics properly and have enough free hard-disk drive to support the tablespaces, you may still have performance problems. If that is

the case, you must determine whether the performance bottleneck is caused by the Oracle9i Database Server or by Oracle Files.

To isolate the problem, start by looking at which processes are running and how many resources they are consuming.

1. Run `top` (on UNIX) or Task Manager (on Windows NT/2000) as you reproduce the problem.
2. Determine whether a Java process, the Oracle shadow process, I/O, or a combination is the bottleneck during that time.

## If the Database is the Bottleneck

If the bottleneck is the Oracle shadow process, get the SQL statement which is causing the largest number of buffer gets, and run Explain Plan on it.

If you see full table scans, then that is the cause of the problem; the optimizer is not choosing an appropriate plan. Report that problem to Oracle Support. Additional work must be done to isolate the problem.

## If the Java Processes are the Bottleneck

You may have too little memory. For example, if you see any `java.lang.OutOfMemoryError` errors in your log files, increase your MX settings for that JVM.

If users are complaining about poor response times, and `top` (on UNIX) or its equivalent (for example, Task Manager on Windows NT/2000), shows a Java process running at 100 percent of a CPU for a minute or longer, then the MX setting for Java may be too small.

1. Turn on verbose garbage collection (`verbosegc`):

```
% java -verbosegc
```

An example of a return message is:

```
GC[1] in 305 ms: (6144kb, 6% free) -> (14Mb, 61% free)
```

GC[1] indicates a complete garbage collection. GC[0] indicates a young space only garbage collection. In this example, the collection took 305 ms. At the start of the collection, heap size was 6144 kb, with 6 percent free. The heap expanded during collection 14 Mb heap with 61 percent free.

2. If complete GCs occur more than once every 10 minutes (not just after startup), increase your MX settings for that JVM.
  - In JRE 1.3, complete (or "major") GCs show up as "GC(1)". In other JVMs, they may show up as "major GC".
  - A major GC occurs when the Garbage Collector has exhausted all available memory in the "nursery", and has to go into the heap to reclaim memory.

### Obtaining Oracle Files Java Cache Statistics

If the bottleneck is an Oracle Files process, start by checking the percentage of cache hits for the Oracle Files service. Starting from the Oracle Enterprise Manager Application Server home page (<http://<hostname>:1810>):

1. In the System Components list, click **Oracle Files**. The top-level page appears, listing the components of the Oracle Files installation: Domain Controller, HTTP Node, and Node.
2. Click the name of the node. The Node page appears, showing the current status of the node (Up or Down), the service running and its status, and a list of server objects running on this node.
3. Click the name of the service. Typically, this will be `IfsDefaultService`. The Service page appears.
4. Scroll to the Performance section and click **Committed Data Cache Statistics**. The Committed Data Cache Statistics page appears, showing Cache Size, Cache Puts, Cache Removes, Cache Lookups, and Cache Hits.

The goal is to have a high percentage of Cache Hits; as much as 100 percent is possible. If the percentage of Cache Hits for the service is less than 95 percent, the size of the Committed Data Cache may be too small.

5. To change the Cache settings for the current session, return to the previous page using the Back button in the browser or the previous link in the path displayed on the page. In the Configuration section, click **Committed Data Cache Configuration**.
6. Proportionately increase all Cache settings (Cache Capacity, Normal purge trigger, Urgent purge trigger, Emergency purge trigger, Purge target), and click **Apply** when you are finished.

This will increase your memory usage on the middle-tier machine by approximately 3 K per object.

7. Run the test again, and observe the results.

**Obtaining Oracle Files Connection Pool Statistics** For the ReadOnly or Writable connection pool, increase the "Target max. number of connections" and "Absolute max. number of connections" if any of the following is true:

- "Failed allocation" is greater than zero.
- "Total Connections" is greater than two higher than "Target max number of connections."
- "Deferred allocations" is greater than 5 percent and "Average time to allocate" is more than 10 milliseconds.

Each additional Target or Absolute connection will use approximately 8 MB per connection on the middle tier and 1 MB per connection on the database.

**Oracle Files Connection Pool Tuning** For the ReadOnly or Writable Connection Pool, increase the "TargetSize" and "MaximumSize" if any of the following is true:

- "FailedAllocationCount" is greater than zero.
- "CurrentSize" is greater than two higher than "TargetSize."
- "DeferredAllocationCount" is greater than 5 percent of ImmediateAllocationCount and "AverageAllocationTime" is more than 10 milliseconds.

Note that each additional CurrentSize connection will use approximately 8 MB per connection on the middle tier and 1 MB per connection on the database.

The log file will have connection pool statistics similar to these:

Cache performance for S\_LibraryObject cache

```
CACHESIZE=409
OBJECTCOUNT=409
PUTCOUNT=818
REMOVECOUNT=0
FINDCOUNT=14617
HITCOUNT=13949
MISSCOUNT=668
HITRATIO=0.9542997879181775
MISSRATIO=0.04570021208182254
```

Cache performance for FolderPath cache

```
CACHESIZE=15
CacheSizeEstimate=15
ACCESSEQUENCE=599
SequenceAtLastPurge=0
PUTCOUNT=15
```

```

REMOVECOUNT=0
PURGECOUNT=0
FINDCOUNT=557
HITCOUNT=433
MISSCOUNT=124
HITRATIO=0.77737881508079
MISSRATIO=0.22262118491921004

```

Cache performance for committed S\_LibraryObjectData cache

```

CACHESIZE=473
CacheSizeEstimate=576
ACCESSSEQUENCE=6821
SequenceAtLastPurge=0
PUTCOUNT=576
REMOVECOUNT=0
PURGECOUNT=0
FINDCOUNT=27092
HITCOUNT=26338
MISSCOUNT=754
HITRATIO=0.972168905950096  <=== THIS IS THE NUMBER TO WATCH
MISSRATIO=0.02783109404990403

```

Cache performance for LibraryObject cache

```

CACHESIZE=221
OBJECTCOUNT=221
PUTCOUNT=221
REMOVECOUNT=0
FINDCOUNT=1473
HITCOUNT=1252
MISSCOUNT=221
HITRATIO=0.8499660556687033
MISSRATIO=0.1500339443312967

```

**To Permanently Change the Service Configuration** The changes you make on this page apply only to the running service session. To change settings permanently, so that they are used each time you restart the domain or this particular node, you must:

1. Return to the top-level Node page.
2. Stop the node.
3. Look under Node Configurations to determine the configuration of the service (small, medium, large).
4. Change the properties in the corresponding Service Configuration.

5. Start the node.

---

# Customizing Oracle Files

Oracle Files supports several different types of customization. You can change the look and feel of the Oracle Files user interface, and you can define custom workflows to create particular review processes in Oracle Files.

This chapter discusses these different types of customization. Topics include:

- [Branding the Oracle Files User Interface](#)
- [Using Custom Workflows in Oracle Files](#)

## Branding the Oracle Files User Interface

Some organizations have "look and feel" standards (such as the requirement to use a particular company logo or color scheme) within their respective environments. The Web (HTTP) interface for Oracle Files can be customized to match those standards.

System Administrators can make the following customizations to the Oracle Files Web user interface (UI):

- Oracle Files Web UI colors can be altered.
- Oracle Files Web UI fonts can be changed.
- Particular Oracle Files Web UI images (such as the Oracle Files logo) can be modified or replaced.
- The title bar for the Oracle Files Web UI can be altered.

Any changes must be made on each middle-tier deployment of Oracle Files.

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**Note:** You should make copies of edited files, as all changes will be lost when any patches or upgrades are applied to the Oracle Files software.

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## Colors

You can change the colors in the Oracle Files Web UI by editing an XML style sheet called `custom.xss`. This file is located in:

```
$ORACLE_HOME/j2ee/OC4J_iFS_files/applications/files/files/cabo/styles/custom.xss
```

The colors of the Oracle Files Web UI are derived from four defined colors. To change the color scheme, replace one or more of these four colors with colors of your own choosing.

## Fonts

You can change the fonts in the Oracle Files Web UI by editing an XML style sheet, similar to changing Web UI colors. This file, called `custom.xss`, is located in:

```
$ORACLE_HOME/j2ee/OC4J_iFS_files/applications/files/files/cabo/styles/custom.xss
```

Fonts on buttons and images in the Oracle Files Web UI cannot readily be changed.

## Images

You can change particular images/logos in the Oracle Files Web UI by replacing the source images on the middle-tier machine(s). Oracle Files images are located in the following directory:

```
$ORACLE_HOME/j2ee/OC4J_iFS_files/applications/files/files/static/files
```

Any new image can be used in place of an original image/logo in the Web UI, as long as the new image is the same height and width as the original.

## Title Bar

You can customize the text that appears in the title bar of the Oracle Files Web UI. To alter the title bar text, edit the file in the following location:

```
$ORACLE_HOME/j2ee/OC4J_iFS_files/applications/files/files/WEB-INF/uixsrc/files/  
template/pagelayout/FilespageLayout.uit
```



Look for the following lines:

```
<boundAttribute name = "htmlTitle">
  <concat>
    <dataObject select = "ORACLE_FILES_ONLINE" source = "files:strings"/>
    <fixed text = " - " />
  </concat>
  <if>
    <dataObject select="isTrain" source="ui:rootAttr"/>
    <messageFormat data:format="title@ui:rootAttr">
      <dataObject select="stageText">
        <ifui:dataObjectListIndex data:index="selectedTrainStep@ui:rootAttr"
          data:value="trainSteps@ui:rootAttr"/>
      </dataObject>
    </messageFormat>
    <dataObject select = "title" source = "ui:rootAttr"/>
  </if>
</boundAttribute>
```

Replace:

```
<dataObject select = "ORACLE_FILES_ONLINE" source = "files:strings"/>
```

with the following line:

```
<fixed text ="Your Company Name"/>
```

---

---

**Note:** Any new text for the title bar cannot be localized.

---

---

## Limitations on Oracle Files Customizations

The following areas in Oracle Files cannot be customized in Oracle Collaboration Suite, Release 2:

- With the exception of the branding image (logo) and title bar, all other instances of the Oracle Files brand name in the application cannot be modified.
- There is no customized user sign-up in Oracle Files, since the application depends upon Oracle Internet Directory for user information.
- System Administrators can only edit the content on the following pages within the application:
  - Welcome Page

- Help Pages
- FAQ

## Using Custom Workflows in Oracle Files

Oracle Files comes with a default workflow process. Although you cannot customize this default process, you can define your own custom workflow process in Oracle Workflow, then register it with Oracle Files.

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**Note:** The Oracle Files online help uses the term "review process" instead of "workflow process".

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A *workflow designer*, a person with the necessary skills to design a workflow process in Oracle Workflow Builder, creates the custom workflow process, then the Site Administrator registers the custom workflow process with Oracle Files.

Refer to Chapter 3, "Defining a Workflow Process" in the *Oracle Workflow Guide* for detailed information about creating a custom workflow process definition. You can access the *Oracle Workflow Guide* at the following URL:

<http://otn.oracle.com/pls/db92/db92.docindex?remark=homepage#index-WOR>

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**Note:** Oracle Files must be configured for Oracle Workflow before you can use workflow processes in Oracle Files. For more information, see the *Oracle Collaboration Suite Installation and Configuration Guide*.

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## About Custom Workflows

Creating and registering a custom workflow involves the following four steps:

1. **Creating the Workflow Process Definition.** The workflow designer creates a *workflow process definition* (.wft file) using Oracle Workflow Builder. The workflow designer can use the default Oracle Files workflow process (the Review Documents .wft) as an example of a correct, Oracle Files-compliant workflow process definition.

The workflow process definition must handle the following events:

- **Launch Event**

- **Cancel Event**
- **Response Event**

These are the three events that are sent from Oracle Files to Oracle Workflow. Once the workflow designer has created the workflow process definition, he or she uploads the .wft to the workflow schema.

2. [Creating the Launch, Response, and Cancel Events](#). The workflow designer creates the launch, cancel and response events.

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---

**Note:** Event names cannot be more than 30 characters in length.

---

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3. [Creating Event Subscriptions for the Launch, Response, and Cancel Events](#). The workflow designer creates event subscriptions for each event.
4. [Registering a Custom Workflow with Oracle Files](#). The workflow designer asks the Site Administrator to register the custom workflow process with Oracle Files. The Start Event, Response Event, and Cancel Event must be included in the request.

## Creating the Workflow Process Definition

Oracle Files and Oracle Workflow communicate with one another by sending a series of messages over Advanced Queueing (AQ). First, Oracle Files sends a Launch Event to Oracle Workflow to start the workflow process. Next, Oracle Workflow responds by sending the URL that Oracle Files needs to access the workflow process status page. After voting is complete (i.e., after the required approvers have responded), Oracle Workflow sends a status message to Oracle Files, indicating whether the status is Approved or Rejected. Finally, Oracle Files sends a Response Event to Oracle Workflow that indicates whether the workflow process concluded successfully, or failed.

If the workflow process expired or was cancelled, Oracle Files sends a Cancel Event to Oracle Workflow.

The following sections provide details on each of these messages in sequence.

### The Launch Event

Oracle Files initiates a new workflow process by sending a Launch Event (message type=Start Event) to Oracle Workflow. To see an example of a Launch Event,

refer to `oracle.ifs.files.review`, which is part of the Oracle Files default workflow process.

The Launch Event provides the following parameters:

- **CORRELATIONID:** The workflow process ID.
- **URL[i]:** The URL of the *i*th document being reviewed.
- **NUMDOCS:** The number of documents being reviewed.
- **INITIATOR:** The user who initiated the review process.
- **JUSTIFICATION:** The text justification entered by the initiator.
- **APPROVERS:** Users who must approve the documents, in the format of a space-delimited list of usernames.
- **REVIEWERS:** Users who will receive notice that the workflow process has been initiated, in the format of a space-delimited list of usernames.

---

---

**Note:** All parameters passed to Oracle Workflow in the Launch Event must be included in all subsequent messages from Oracle Workflow to Oracle Files. For this reason, do not edit the Launch Event.

---

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## The Workflow Process URL

Oracle Workflow must respond to the Launch Event by providing Oracle Files with the URL to access the workflow process status page (message `type=PROCESSURL`).

Use the following workflow function to retrieve the URL:

```
wf_monitor.GetEnvelopeUrl(wf_core.Translate('WF_WEB_AGENT'),
                           itemtype,
                           itemkey,
                           'NO');
```

The `PROCESSURL` Event must contain the following parameters:

- **CORRELATIONID:** The workflow process ID.
- **PROCESSURL:** The URL of the workflow process status page. This URL is the one that was returned by the `GetEnvelopeUrl()` function.

---

**Note:** Make sure that the `PROCESSURL` message includes all the parameters passed to Oracle Workflow in the Launch Event.

---

### The Process Status Event

After voting is complete (i.e., after the required approvers have responded), Oracle Workflow must send a status message to Oracle Files, indicating whether the status is Approved or Rejected (message `type=PROCESSSTATUS`).

The `PROCESSSTATUS` Event must contain the following parameters:

- **CORRELATIONID:** The workflow process ID.
- **PROCESSSTATUS:** The status of the workflow process (Approved or Rejected).

---

**Note:** Make sure that the `PROCESSSTATUS` message includes all the parameters passed to Oracle Workflow in the Launch Event.

---

### The Response Event

The Response Event is the last message in the workflow process (message `type=Response Event`). Oracle Files sends the Response Event to Oracle Workflow, indicating whether the workflow process concluded successfully, or failed. To see an example of a Response Event, refer to `oracle.ifs.files.response`, which is part of the Oracle Files default workflow process.

The Response Event provides the following parameters:

- **CORRELATIONID:** The workflow process ID.
- **STATUS:** The final status of the workflow (Success or Failure).
- **EXCEPTION:** The error message that appears if `STATUS=Failure`.

### The Cancel Event

Oracle Files sends a Cancel Event if the workflow process expired, or was cancelled, on the Oracle Files side (message `type=Cancel Event`). Oracle Workflow must respond to this event by canceling the corresponding workflow process. To see an example of a Cancel Event, refer to `oracle.ifs.files.cancel`, which is part of the Oracle Files default workflow process.

The Cancel Event provides only one parameter:

- **CORRELATIONID:** The workflow process ID.

## Creating the Launch, Response, and Cancel Events

After the custom workflow process definition is complete, the workflow designer creates the Launch, Response, and Cancel Events in Oracle Workflow.

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**Note:** Event names cannot be more than 30 characters in length.

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---

Refer to Chapter 13, "Managing Business Events" in the *Oracle Workflow Guide* for detailed information about creating events in Oracle Workflow.

## Creating Event Subscriptions for the Launch, Response, and Cancel Events

After the Launch, Response, and Cancel events have been created in Oracle Workflow, the workflow designer creates event subscriptions for each of the events:

- The Launch Event and Response Event need to be routed to the uploaded workflow process definition.
- The Cancel Event must send an abort message to the workflow process, using the `wf_engine.AbortProcess()` function.

Refer to Chapter 13, "Managing Business Events" in the *Oracle Workflow Guide* for detailed information about creating event subscriptions in Oracle Workflow.

After creating the event subscriptions, the workflow designer must ask the Site Administrator to register the custom workflow process with Oracle Files, with the Start, Response, and Cancel Event included in the request.

## Registering a Custom Workflow with Oracle Files

The Site Administrator can register a custom workflow process definition on the Registered Workflow Process Definitions page in Oracle Files. Registering the custom workflow process definition will make it available to Workspace Administrators and Participants in a Subscriber.

Site Administrators can register, edit, or delete a custom workflow process definition.

## Registering a Workflow Process Definition

A registered workflow process definition consists of the Workflow Process Definition Name, along with the Launch Event, Response Event, and Cancel Event strings.

To register a custom workflow process definition:

1. Click **Workflow** in Oracle Files.
2. On the Registered Workflow Process Definitions page, enter the **Workflow Process Definition Name**, along with the **Launch Event**, **Response Event**, and **Cancel Event** strings that the workflow designer has provided. The default Oracle Files workflow process definition is registered in the following way:
  - **Launch Event:** `oracle.ifs.files.review`
  - **Cancel Event:** `oracle.ifs.files.cancel`
  - **Response Event:** `oracle.ifs.files.response`
3. Click **Apply** to register the custom workflow process definition for use in Oracle Files.

---

**Note:** To add another row, click **Add Another Row**.

---

## Editing a Registered Workflow Process Definition

After you have registered a workflow process definition, you can edit its properties. These properties include the Workflow Process Definition Name, along with the Launch Event, Cancel Event, and Response Event strings.

To edit the Registered Workflow Process Definition properties:

1. Click **Workflow** in Oracle Files.
2. From the Registered Workflow Process Definitions page, you can edit one or more Event strings based on the workflow process definition (for **Launch**, **Cancel**, and **Response Events**). The workflow designer provides these strings.  
  
You can also change the **Workflow Process Definition Name**.
3. Click **Apply**. The page refreshes, and your new workflow process definition properties are displayed.

---

---

**Note:** If you cannot cancel a workflow process, then the Cancel Event registered with Oracle Files is not consistent with the Cancel Event string in the workflow process definition in Oracle Workflow. Edit the Oracle Files Cancel Event to solve the problem.

---

---

### Deleting a Registered Workflow Process Definition

To delete a Registered Workflow Process Definition:

1. Click **Workflow** in Oracle Files.
2. From the Registered Workflow Process Definitions page, click the **Trash** icon in the **Delete** column that corresponds to the Registered Workflow Process Definition you want to remove.
3. Click **Apply**. The deleted Registered Workflow Process Definition is not displayed, and is no longer available to Subscribers.

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---

**Note:** When a Registered Workflow Process Definition is deleted, any pending processes using that definition are canceled.

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## Setting Up E-Mail Notifications in Oracle Workflow

In order to configure Oracle Workflow to send e-mail notifications, you must perform the following three tasks:

- Set up the Oracle Workflow Notification Mailer
- Create a configuration file for the Oracle Workflow Notification Mailer
- Start the Oracle Workflow Notification Mailer

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**Note:** Only instructions for UNIX and Linux are currently available.

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### Setting Up the Oracle Workflow Notification Mailer

Set up the Oracle Workflow Notification Mailer on the middle-tier host where Oracle Workflow is installed.

1. Make sure that UNIX Sendmail is configured on the operating system so that users can send e-mail to external recipients, as well as receive e-mails from them.



2. Create a UNIX account for Oracle Workflow (for example, "Workflow"). This UNIX account should only receive Workflow mail.
3. Ensure that the environment for the Workflow UNIX user to run the Notification Mailer is set up in the same way as the environment for the user who installed Oracle Workflow.
4. Add the Workflow UNIX user to the dba group in the operating system, and set the umask for the account as 022.
5. Set PATH to sendmail binary.
6. Set LD\_LIBRARY\_PATH to \$ORACLE\_HOME/lib (if not already set).
7. Check that the Workflow UNIX user can log in to the server, and ensure that e-mail can be sent to and received from external recipients through Sendmail.
8. Ensure that the Workflow UNIX user can log in to the Oracle database server. You can check this by using SQL\*Plus to log in to the database as the Workflow database user:

```
sqlplus <workflow schema>/<password>@<connect_string>
```

---

---

**Note:** The <workflow schema> is typically owf\_mgr.

---

---

9. Ensure that the Workflow UNIX user has the necessary permissions for the following three files:
  - **The Notification Mailer program.** The program file, wfmail.snd, is located under \$ORACLE\_HOME/bin.
  - **The Notification Mailer tag file.** The tag file, wfmail.tag, is located under \$ORACLE\_HOME/wf/res.
  - **The sample configuration file.** The configuration file, wfmail.cfg, is located under \$ORACLE\_HOME/wf/res.

### Creating a Configuration File for the Oracle Workflow Notification Mailer

You must create a configuration file for the Oracle Workflow Notification Mailer. Edit the sample configuration file, wfmail.cfg, located under \$ORACLE\_HOME/wf/res.

The content of the configuration file is formatted as follows:

```
#Description  
PARAMETR1=<value1>
```

```
#Description  
PARAMETR2=<value2>
```

Edit the following parameters in the `wfmail.cfg` file:

- **CONNECT.** Connection information for the database account where Oracle Workflow server is installed, in the following format:

```
<username>/<password>@<connect_string>
```

- **ACCOUNT.** Connection information for the mail account that the program uses to send notification messages. For Sendmail, the account information would be the full path of the mail spool file where the incoming messages are stored, such as:

```
/var/mail/<Workflow UNIX user account>
```

For example:

```
/var/mail/Workflow
```

- **REPLYTO.** A default reply-to e-mail address, if the e-mail account that processes responses is different from the e-mail account that sends outgoing notifications. For example:

```
some_admin@yourDomainName
```

- **HTMLAGENT.** The base URL that identifies the HTML Web Agent that handles HTML notification responses. This URL is required to support e-mail notifications with HTML attachments. The format is:

```
http://server_name[:portID]/pls/new_workflowDAD/default_homepage.home
```

For example:

```
http://myserver:8799/pls/ocs_wf/wfa_html.home
```

- **TAGFILE.** The full path and name of the Oracle Workflow tag file:

```
$ORACLE_HOME/wf/res/wfmail.tag
```

All other parameters take the default values.

## Starting the Oracle Workflow Notification Mailer

After you have set up the Oracle Workflow Notification Mailer and created a configuration file, you should run the Notification Mailer in the background. Follow these instructions to keep the Notification Mailer running even after the Workflow UNIX account has logged out, and to record standard output and error messages separately:

- As the Workflow UNIX user, type the following:

```
nohup $ORACLE_HOME/bin/wfmail.snd -f <config_file> 1>mailer.log 2>mailer_err.log &
```

Where `<config_file>` is equal to:

```
$ORACLE_HOME/wf/res/wfmail.cfg
```

- Since the password parameter in the `$ORACLE_HOME/wf/res/wfmail.cfg` file is in Cleartext and poses a security problem, you can start the Notification Mailer without specifying the `CONNECT` parameter in the configuration file:

```
nohup $ORACLE_HOME/bin/wfmail.snd -f $ORACLE_HOME/wf/res/wfmail.cfg owf_mgr/password@connect_string 1>mailer.log 2>mailer_err.log &
```

---

---

**Note:** even this method of running the Oracle Workflow Notification Mailer is not entirely secure, since anyone with access to the middle tier could type `/usr/ucb/ps -auxwww | grep wfmail.snd` to get the `CONNECT` information.

---

---



# Troubleshooting

This chapter provides information in the following area:

- [Troubleshooting General Problems](#)

## Troubleshooting General Problems

This section contains information to assist with general problems and performance issues. The probable cause and a corrective action are provided for each problem.

**Table 8–1 Troubleshooting General Problems**

| Problem                                                         | Probable Cause                                                                                               | Corrective Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| An out-of-memory exception is raised when running Oracle Files. | The maximum Java heap size is too low.                                                                       | Increase the heap size by modifying the <code>-Xmx</code> setting for that node configuration.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Server is generally slow for read and write activity.           | Probable cause #1: Server memory is overcommitted. The server is excessively swapping memory blocks to disk. | <p>Run system monitoring tools, such as <code>vmstat</code> (UNIX) and look for excessive page swapping to verify the problem.</p> <p>Adjust the following parameters in your database's <code>init.ora</code> file:</p> <ul style="list-style-type: none"> <li>■ Reduce <code>processes</code>.</li> <li>■ Reduce <code>open_cursors</code>.</li> <li>■ Reduce <code>db_block_buffers</code>.</li> </ul> <p>Stop unneeded Java VMs or other unneeded processes.</p> <p>You may also need to add memory to your server or, if you are running a single-tier configuration, reconfigure your Oracle Files server into a two-tier configuration.</p> <p>For more information on adjusting the parameters in the <code>init.ora</code> file, see the <i>Oracle Collaboration Suite Installation and Configuration Guide</i>.</p> |
|                                                                 | Probable cause #2: CTXHX is using 100 percent of your CPU.                                                   | See <a href="#">Appendix A, "Oracle Text Reference"</a> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

**Table 8–1 (Cont.) Troubleshooting General Problems**

| Problem                                                                    | Probable Cause                                                                                                                                   | Corrective Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Server is slow only on read or search activity.                            | Large volumes of data have been loaded but the CBO statistics weren't updated.                                                                   | If the Oracle9i Cost-Based Optimizer is using stale statistics data, performance suffers. Run the <code>analyze.sql</code> script located in the <code>\$ORACLE_HOME/ifs/files/admin/sql</code> directory to refresh the statistics.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Server is slow only on content-based search activity.                      | Oracle Text tablespaces are on the same disk as other database files.                                                                            | Move the Oracle Text tablespaces to other disks. See the <i>Oracle Collaboration Suite Installation and Configuration Guide</i> and the <i>Oracle9i Database Administrator's Guide</i> for more information on moving tablespaces.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                                            | Oracle Text indexes have become fragmented.                                                                                                      | Regularly optimize the Oracle Text Oracle index <code>IFS_TEXT</code> . For more information, see <a href="#">"Maintaining the IFS_TEXT Index By Using the Oracle Text PL/SQL Packages"</a> in <a href="#">Appendix A, "Oracle Text Reference"</a> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Server is slow only on write activity.                                     | Large amounts of documents are being loaded and the Redo logs are too small.                                                                     | Add two or more 100 MB or larger Redo logs. See the <i>Oracle9i Database Administrator's Guide</i> for more information. In general, Redo logs should be switching every hour or less frequently. See the <code>\$ORACLE_HOME/rdbms/&lt;sid&gt;/bdump</code> directory for the latest logs which indicate the frequency of Redo log switching.                                                                                                                                                                                                                                                                                                                                                                                            |
|                                                                            | Large amounts of documents are being loaded and the Redo logs are on the same disk as the database files.                                        | Place the Redo logs on a separate disk from the database files. See the <i>Oracle9i Database Administrator's Guide</i> and the <i>Oracle9i Database Performance Tuning Guide and Reference</i> for more information.<br><br>For optimal performance, dedicate one or more disks (and, if possible, a disk controller) exclusively to the Redo logs, and optimize the disks for sequential write activity. For example, on Sun SPARC Solaris, you may choose raw partitions or UNIX file systems for the disks. If you choose UNIX file systems on Solaris 2.6 or above, use the "forcedirection" option when mounting the file systems. These options should only be used if the file systems are dedicated exclusively to the Redo logs. |
| Content queries through the Web and Windows return no rows.                | Oracle Text indexing of the documents has not occurred.                                                                                          | See <a href="#">"Maintaining the IFS_TEXT Index By Using the Oracle Text PL/SQL Packages"</a> in <a href="#">Appendix A, "Oracle Text Reference"</a> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Problems with outbound FTP on UNIX.                                        | You are using <code>/usr/bin/ftp</code> on UNIX and the default port number in <code>/etc/services</code> is a port other than 21, such as 2100. | Specify the port number explicitly, for example, " <code>ftp ifs.us.oracle.com 21</code> ", where "21" is the port assigned.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Want to reset the Oracle Files system password without knowing what it is. | Have forgotten the Oracle Files system password.                                                                                                 | You will need to contact Oracle Support or, if not, you must re-install the database. If you choose to re-install the database, you will need to make sure that you have copied any files stored in the Oracle Files database out to a local hard drive before starting the re-install process. The re-install will result in the loss of all information currently stored in the database.                                                                                                                                                                                                                                                                                                                                               |

**Table 8–1 (Cont.) Troubleshooting General Problems**

| Problem                                                                                                      | Probable Cause                                                                                                 | Corrective Action                                                                                                                                                                                                                                                                                                                                                                                           |
|--------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The administrator has uploaded files and removed them and doesn't see the space retrieved in the tablespace. | The Initial Time of Day and Activation Period has been set incorrectly for the Content GarbageCollectionAgent. | Use Oracle Enterprise Manager Web site to look at the Initial Time of Day and Activation Period entries for the Content Garbage Collection Agent.<br><br>Also check the Node .log and see if the Content Garbage Collection Agent is getting activated at the periodic intervals.                                                                                                                           |
| Cannot access Oracle Files from outside the firewall using SMB.                                              | The required port is not open.                                                                                 | Windows clients can only access SMB if it is running on port 139, so you will need to open up port 139 to the external machine.                                                                                                                                                                                                                                                                             |
|                                                                                                              | You are using Windows 95/98/ME.                                                                                | Windows 95/98/ME are not very good at connecting to SMB servers across the internet. You have to modify the local lmhosts file for these operating systems to connect to the server at all. Windows NT/2000/XP do not have this problem.                                                                                                                                                                    |
| Accessing Oracle Files from outside the firewall using SMB is very slow.                                     | SMB is inherently slow over the Internet.                                                                      | All Windows SMB clients are very chatty, and will therefore amplify any latency that exists between the client and the server. The latency over the internet could be enough to make SMB appear much slower than normal.                                                                                                                                                                                    |
| Users fail to be provisioned, or newly provisioned users cannot be added to workspaces.                      | Required user attributes were not set in Oracle Internet Directory.                                            | The following Oracle Internet Directory user attributes must be non-null for all users: sn, givenName, mail. In addition, all users must have a non-null username.<br><br>The username is specified by the orclCommonNickname Attribute in the Subscriber's OracleContext. See the <i>Oracle Internet Directory Administrator's Guide</i> for more information on viewing the orclCommonNickname Attribute. |
| "503 Service Unavailable" error message.                                                                     | The OC4J instance was not restarted after starting the Oracle Files Domain.                                    | <ol style="list-style-type: none"> <li>1. If the domain is not started, run <code>ifscctl start</code>.</li> <li>2. From <code>\$ORACLE_HOME/opmn/bin/</code>, run <code>opmnctl restartproc gid=OC4J_ifs_files</code>.</li> <li>3. Check the HTTP Node log file to ensure that the HTTP node has started.</li> </ol>                                                                                       |
| Cannot log in to FTP.                                                                                        | Protocol Access is not enabled for that user.                                                                  | Log in to Oracle Files with the user account that cannot access FTP and go to the Protocol Access page, where you can set an Oracle Files-specific password. You can then log in to FTP using the Oracle Files-specific password.                                                                                                                                                                           |
| When using NTFS, nothing gets written into the node log.                                                     | The Log Level of the node configuration is not set high enough.                                                | NTFS will not write into the node log unless the Log Level is set to 6. See " <a href="#">Changing a Node Configuration</a> " on page 5-14 for information about how to set the Log Level.                                                                                                                                                                                                                  |





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# Oracle Text Reference

Oracle Files uses Oracle Text to facilitate full-text search and other advanced capabilities. The speed with which results are returned depends on several factors, including the quality of the Oracle Text index used with Oracle Files (`IFS_TEXT`), free space on the disk for objects required during the search, and other such details. In addition, the end user's experience of the "performance" of the search can depend on how much time you let elapse before an in-progress search times out.

This appendix provides information about how to maintain the Oracle Text index to ensure optimal Oracle Files performance, and includes these topics:

- [Oracle Text Tablespaces and Disk Utilization](#)
- [Creating and Maintaining the Oracle Text Index](#)
- [Modifying the Search Timeout Parameter](#)
- [Troubleshooting Oracle Text Problems](#)

Previous names for Oracle Text include Oracle Context and Oracle interMedia Text. Many of the underlying indexes, views, tables, and various PL/SQL packages referred to in much of the administrator and application developer documentation still use Context or interMedia-related nomenclature. For example, the database schema that owns all Oracle Text objects, such as the indexes, is `CTXSYS`.

For detailed information about Oracle Text, visit the Oracle Technology Network (<http://otn.oracle.com/products/text/>).

## Oracle Text Tablespaces and Disk Utilization

Disk space for Oracle Text is divided among three distinct tablespaces:

- The **Oracle Text Data** tablespace contains tables that hold text tokens (separate words) that exist within the various indexed documents. The storage for these

text tokens is roughly proportional to the ASCII content of the document. The ASCII content percentage will vary depending on the format of the original document. Text files only have white space as their non-ASCII content and, therefore, will incur a greater per-document percentage overhead. Document types such as Microsoft Word or PowerPoint contain large amounts of data required for formatting that does not qualify as text tokens. The per-document percentage on these types of documents will, therefore, be lower. On a system with diverse content types, the expected overhead is approximately 8 percent of the sum of the original sizes of the indexed documents.

- The **Oracle Text Keymap** tablespace contains the tables and indexes required to translate from the Oracle Files locator of a document (the Oracle Files DocID) to the Oracle Text locator of that same document (the Oracle Text DocID). The expected space utilization for this tablespace is approximately 70 bytes per indexed document.
- The **Oracle Text Index** tablespace contains the B\*tree database index that is used against the text token information stored in the Oracle Text Data tablespace. This will grow as a function of the ASCII content just as the Oracle Text Data tablespace does. On a system with diverse content types, the expected overhead is approximately 4 percent of the sum of the ASCII content of the documents, or approximately 1 percent of the sum of the total sizes of the indexed documents.

Use this information to estimate and plan disk storage needs for your Oracle Files instance.

## Creating and Maintaining the Oracle Text Index

At the end of the configuration process for Oracle Files, the Oracle Files Configuration Assistant uses the SQL scripts shown in [Table A–1](#) to create and populate the IFS\_TEXT index.

These scripts are located in the /install/admin/sql directory of the Oracle Collaboration Suite CD. If the installation process fails and you need to run these scripts manually, you should execute the scripts at a SQL\*Plus prompt after logging on as the Oracle Files schema user. The default Oracle Files schema user is IFSYS.

**Table A–1 SQL Scripts for Creating Oracle Text Index**

| Script                           | Usage                                         |
|----------------------------------|-----------------------------------------------|
| CreateContextFunnelProcedure.sql | Creates the procedure used by USER DATASTORE. |

**Table A-1 (Cont.) SQL Scripts for Creating Oracle Text Index**

| Script                       | Usage                                                                                                                 |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| GrantContextToIFS.sql        | Grants the Oracle Files user (schema) privileges on the Oracle Text-specific commands required to maintain the index. |
| CreateContextPreferences.sql | Tablespace and other text preferences are created by the Oracle Files user.                                           |
| CreateContextIndex.sql       | Creates the IFS_TEXT index based on the text preferences.                                                             |

## Maintaining the IFS\_TEXT Index By Using the Oracle Text PL/SQL Packages

Two PL/SQL procedures are provided with Oracle Text for maintaining the index. Unlike a regular database index, the Oracle Text index is not dynamically updated with each insert or update of information. Rather, the index must be refreshed (or synchronized) periodically, using the Oracle Text stored procedure `ctx_ddl.sync_index`.

The `ctx_ddl.sync_index` procedure does not rebuild the entire index, but adds and delete records that have changed since the last synchronization. Since the changes are incremental, the more frequently you run this procedure, the faster it goes. Over the course of time, however, the index can become fragmented, so a companion procedure (`ctx_ddl.optimize_index`) is provided to optimize the index.

During Oracle Files configuration, the procedures to sync and optimize the IFS\_TEXT index are automatically set up to run periodically in the background, using the DBMS\_JOB package of the Oracle9i Database Server. DBMS\_JOBS, which are similar to `cron jobs` on UNIX systems, are portable across all platforms on which the Oracle9i Database Server runs.

When the Oracle Files schema is created during configuration, two DBMS\_JOBS are set up: Sync Job and Optimize Job.

---



---

**Note:** Sync Job and Optimize Job are only set up when a new schema is created. If you are upgrading from an existing schema, these jobs will not be created.

---



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## Sync Job

Sync Job will periodically call the `'ctx_ddl.sync_index()'` method. This method indexes the documents that were created or updated since the last run. By default, this job is set up to run every 30 minutes.

## Optimize Job

Optimize Job will periodically call the `'ctx_ddl.optimize_index()'` method. The goal of this job is to optimize the `IFS_TEXT` index by defragmenting it. By default, this job is run in `FULL` mode, with a maximum of one hour allocated for the optimization task. The job is set up to run every 24 hours, starting at midnight.

## Monitoring DBMS\_JOBS

`DBMS_JOB` log files can be found under the `$ORACLE_HOME` that hosts the Oracle9i Database Server, in the directory that holds the background process logs. This directory is pointed to by the `BACKGROUND_DUMP_DEST` configuration parameter of the database server. You can recognize the log trace files by their name pattern, `DBNAME_j###_<process-id>.trc`.

Another database configuration parameter, `JOB_QUEUE_PROCESSES`, determines how many processes are available at any given time to run all background tasks. You may need to increase the value of this parameter if not enough processes are available to run Sync Job and Optimize Job.

You can also look at the `USER_JOBS` view to see a list of all the jobs set up by the current schema user. The `USER_JOBS` view shows details such as the PL/SQL being run by each job, the last time each job was run, and when the jobs are scheduled to be run next. To see the `USER_JOBS` view, log on to the Oracle Files schema using `SQL*Plus`.

## Changing or Removing the Default DBMS\_JOBS

Two SQL files are used to set up and clear `DBMS_JOBS` in Oracle Files: `SetupContextJobs.sql` and `ClearContextJobs.sql`. These files are located in the following directory:

```
$ORACLE_HOME/ifs/files/admin/sql
```

`SetupContextJobs.sql` is used by the system during configuration to set up Sync Job and Optimize Job. `ClearContextJobs.sql` is provided for you to remove Sync Job and Optimize Job, in case you want to set up your own `DBMS_JOBS`.

See the *Oracle9i Database Administrator's Guide* for information about setting up your own DBMS\_JOBS. You can also look at Sync Job and Optimize Job as examples.

### Manually Synchronizing and Optimizing IFS\_TEXT

To synchronize an existing IFS\_TEXT index, use SQL\*Plus to connect as the Oracle Files schema user, and enter:

```
exec ctx_ddl.sync_index('ifs_text');
```

You can also run the SyncContextIndex.sql script from the \$ORACLE\_HOME/ifs/files/admin/sql directory. In addition to synchronizing the IFS\_TEXT index, this script will print extra log information to the console.

To optimize an existing IFS\_TEXT index, use SQL\*Plus to connect as the Oracle Files schema user, and enter:

```
exec ctx_ddl.optimize_index('ifs_text', 'FAST');
```

or

```
exec ctx_ddl.optimize_index('ifs_text', 'FULL', maxtime);
```

## Monitoring Oracle Text Indexing of Oracle Files Documents

Oracle Files provides some utility-type SQL scripts to facilitate interaction with Oracle Text (see [Table A-2](#)). Read each .sql file for additional usage details. All scripts are available in:

```
$ORACLE_HOME/ifs/files/admin/sql
```

**Table A-2 SQL Scripts for Monitoring Oracle Text Indexing**

| Script                | Usage                                                                                                                                                                                                         |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ViewContextErrors.sql | Script that decodes the operating system specific errors that were generated during Oracle Text indexing.                                                                                                     |
| SyncContextIndex.sql  | Script that enables you to monitor the Oracle Text synchronization process. Uncomment the first two lines in the script, which includes call to ctx_output.add_event(), to monitor on a rowid by rowid basis. |

**Table A-2 (Cont.) SQL Scripts for Monitoring Oracle Text Indexing**

| Script                  | Usage                                                                                                                                                            |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ViewDocumentByRowID.sql | Script that enables you to view additional information about a document that is indexed by Oracle Text. Use the docid from the Oracle Text log with this script. |

## Indexing Non-Standard Content Types

Oracle Files does not by default index every file that is moved into the system, but you can configure it to index any type of content you choose by designating the MIME type as "To Be Indexed" on the Create Format (or Format page, if it already exists).

For example, you may want to index all your .java source code files. To do so:

1. Use the Oracle Enterprise Manager Web site to add the .java MIME type and designate it as "To Be Indexed" using the Create Format dialog.
2. Insert the files into the repository.
3. Sync the index using the procedure discussed in ["Manually Synchronizing and Optimizing IFS\\_TEXT"](#).

## Modifying the Search Timeout Parameter

The IFS.SERVICE.SESSION.DefaultSearchTimeoutPeriod service configuration parameter specifies the timeout period for a running search that has not yet returned results. The default setting for this parameter (in the default service configurations) is 60 seconds. Increase this value and users will wait longer than a minute before a search times out; decrease the value to shorten the time in which a running search will time out.

## Troubleshooting Oracle Text Problems

This section provides Oracle Text troubleshooting information.

**Table A-3 Troubleshooting Oracle Text Problems**

| Problem                                                                                      | Probable Cause                                                                                                                                                        | Corrective Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cannot search on document contents of any documents.                                         | Oracle Text server is not running.                                                                                                                                    | Start the database instance and make sure that Oracle Text is running.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Server is slow only on content-based search activity.                                        | <p>Probable cause #1: Oracle Text tablespaces are on the same disk as other database files.</p> <p>Probable cause #2: Oracle Text indexes have become fragmented.</p> | <p>Move the Oracle Text tablespaces to other disks. See the <i>Oracle Collaboration Suite Installation and Configuration Guide</i>. See the <i>Oracle9i Database Administrator's Guide</i> for more information on moving tablespaces.</p> <p>Regularly optimize the Oracle Text index GLOBALINDEXEDBLOB_I (for new schemas). For more information, see "<a href="#">Manually Synchronizing and Optimizing IFS_TEXT</a>".</p>                                                                                                                                                                                                                                                                                                                                           |
| Oracle Files rows never get processed and never leave the Oracle Text view ctx_user_pending. | Oracle Files documents are corrupt or do not have the correct extension.                                                                                              | <ol style="list-style-type: none"> <li>Follow the steps in "<a href="#">Oracle Files rows show up in the Oracle Text view ctx_user_index_errors.</a>" to determine which Oracle Files documents are being referred to, substituting ctx_user_pending for ctx_user_index_errors and pnd_rowid for err_textkey.</li> <li>Examine this document, looking for these problems: <ul style="list-style-type: none"> <li>Is the file damaged in any way?</li> <li>Is the file name extension correct for this document?</li> <li>Is the character set of the document correct?</li> </ul> </li> <li>If no obvious problems are found, send the document to your Oracle Support Representative for further diagnosis.</li> <li>Delete the document from Oracle Files.</li> </ol> |

**Table A–3 (Cont.) Troubleshooting Oracle Text Problems**

| Problem                                                   | Probable Cause                                           | Corrective Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------------------------------------|----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Searching on the contents of new documents stops working. | A recent document has caused Oracle Text server to fail. | <ol style="list-style-type: none"><li>1. Log into SQL*Plus as &lt;files schema&gt; /&lt;schema password&gt;, and issue:<br/>select count(*) from ctx_user_pending;</li><li>2. If there are any rows in that view and the rows are not changing, then a recent document has caused Oracle Text to stop indexing. To determine which Oracle Files documents these rows refer to, see the problem "<a href="#">Oracle Files rows show up in the Oracle Text view ctx_user_index_errors.</a>"</li><li>3. Still in SQL*Plus, issue the command:<br/>select * from ctx_user_index_errors;<br/>to see if there are any recent errors. Resolve any of these errors. To determine which Oracle Files documents these rows refer to, see the problem "<a href="#">Oracle Files rows show up in the Oracle Text view ctx_user_index_errors.</a>"</li><li>4. Check again to see if there are any rows in ctx_user_pending and, if so, that the rows are changing.</li><li>5. If this does not resolve the issue, contact your Oracle Support representative for further assistance.</li></ol> |



**Table A–3 (Cont.) Troubleshooting Oracle Text Problems**

| Problem                                                                  | Probable Cause                                                           | Corrective Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------------------------------------------------------------|--------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Oracle Files rows show up in the Oracle Text view ctx_user_index_errors. | Oracle Files documents are corrupt or do not have the correct extension. | <ol style="list-style-type: none"> <li>1. Determine which Oracle Files document is being referred to.<br/> <pre>SQL*Plus &lt;files schema&gt;/&lt;schema password&gt;  select du.uniquename, vd.name, co.contentsize, cs.id, vd.id from odmv_document vd, odm_contentobject co, odmm_contentstore cs, odm_document od, odm_directoryuser du where vd.id = od.id and od.contentobject = co.id and co.content = cs.id and du.id = vd.owner and cs.id in ( select distinct od.id from ctx_user_index_errors cp, odmm_ contentstore od where od.rowid = <b>err_textkey</b> ) order by cs.id;</pre> </li> <li>2. Go to the Oracle Files Web interface and log in as the Subscriber Administrator.</li> <li>3. Search on the document name &lt;vd.id&gt;.</li> <li>4. Check document attributes, such as document size, to make sure that it is the correct document.</li> <li>5. Examine this document, looking for these problems:<br/> Is the file damaged in any way?<br/> Is the file name extension correct for this document?<br/> Is the character set of the document correct? </li> <li>6. If no obvious problems are found, send the document to your Oracle Support Representative for further diagnosis.</li> </ol> |



---

## Service Configuration Reference

An Oracle Files service comprises a Java runtime environment for the protocol servers and agents that it supports. A service also manages connections to the database through JDBC. There are three default service configuration objects you can use to create new services on nodes:

- `SmallServiceConfiguration`
- `MediumServiceConfiguration`
- `LargeServiceConfiguration`

The differences among the three configuration templates are in the number of connections and sessions supported.

Spaces can be included in service configuration properties. For this reason, do not use spaces to separate alternate values of a property. You must use a comma as a delimiter.

**Table B–1 IFS.SERVICE.\* Properties**

| Property                                         | Description and Usage Note                                                                                                                                                                                                                                                                                                                              | Default                                              | Required ? |
|--------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|------------|
| IFS.SERVICE.<br>DefaultCharacterSet              | Default character set, in IANA format, for Oracle Files Subscribers. Can be overridden on a per-session basis. Default character set for each user is determined by the user's Primary User Profile.                                                                                                                                                    | Character set of the database instance<br>ISO-8859-1 | No         |
| IFS.SERVICE.<br>DefaultLanguage                  | Default language, as an Oracle language name, for Oracle Files Subscribers. Can be overridden on a per-session basis. Default language for each user is determined by the user's Primary User Profile.                                                                                                                                                  | Based on configuration.                              | No         |
| IFS.SERVICE.<br>MaximumConcurrentSessions        | Maximum number of sessions the service can support concurrently. Default of 0 means unlimited.                                                                                                                                                                                                                                                          | 0                                                    | No         |
| IFS.SERVICE.<br>MaximumConcurrentSessionsPerUser | Maximum number of sessions per user the service can support. Default of 0 means unlimited. If set to other than 0 and maximum is exceeded, service throws IFS-20132 error.                                                                                                                                                                              | 0                                                    | No         |
| IFS.SERVICE.<br>CheckForOrphanSessionsPeriod     | Number of seconds between checks for orphan sessions. (Active sessions generate heartbeats. An orphan session is one that no longer generates session heartbeats. When the service detects an orphan session, it disconnects the session and releases the session's resources.) Default is 60 seconds between checks. Set to 0 to disable the checking. | 60                                                   | No         |
| IFS.SERVICE.<br>SessionOperationTimeoutPeriod    | Number of seconds after which certain Oracle Files API calls are terminated, even if incomplete. If an operation times out in this manner, it is terminated, its transaction is aborted, and an exception is thrown. The session performing the operation remains valid. Set to 0 to disable session operation timeout.                                 | 300                                                  | No         |
| IFS.SERVICE.<br>OrphanSessionTimeoutPeriod       | Number of seconds after which a session that no longer generates a heartbeat becomes an orphan. Set to 0 to disable orphan session timeout.                                                                                                                                                                                                             | 600                                                  | No         |

**Table B–1 (Cont.) IFS.SERVICE.\* Properties**

| Property                                                 | Description and Usage Note                                                                                                                                                                                                                         | Default                                      | Required ? |
|----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|------------|
| IFS.SERVICE.<br>ServiceKeepAliveEventPeriod              | Seconds between service heartbeats. The Service Watchdog Agent detects services that cease to have a heartbeat, and cleans up information associated with the failed service in the Oracle Files repository.<br><br>Set to 0 to disable heartbeat. | 60                                           | No         |
| IFS.SERVICE.<br>PollForEventsFromOtherServices<br>Period | Seconds between checks for incoming events from other services. Set to 0 to disable inter-service event polling.                                                                                                                                   | 2                                            | No         |
| IFS.SERVICE.<br>TransportEventsToOtherServices<br>Period | Maximum length of time (seconds) that outgoing events are buffered before sending. Set to 0 to disable outgoing event buffer.                                                                                                                      | 2                                            | No         |
| IFS.SERVICE.ACLCACHE.<br>Size                            | The absolute maximum size of the service's ACL cache, in ACLs. The service ACL cache holds resolved access levels of ACLs.                                                                                                                         | 750 - Small<br>3000 - Medium<br>7500 - Large | No         |
| IFS.SERVICE.ACLCACHE.<br>NormalTrigger                   | The cache size, in ACLs, at which the service ACL cache schedules a low-priority purge of data that has not been recently used.                                                                                                                    | 500 - Small<br>2000 - Medium<br>5000 - Large | No         |
| IFS.SERVICE.ACLCACHE.<br>UrgentTrigger                   | The cache size, in ACLs, at which the service ACL cache schedules a high-priority purge of data that has not been recently used. Must be greater than IFS.SERVICE.ACLCACHE.NormalTrigger.                                                          | 550 - Small<br>2200 - Medium<br>5500 - Large | No         |
| IFS.SERVICE.ACLCACHE.<br>EmergencyTrigger                | The cache size, in ACLs, at which the service ACL cache performs an immediate purge of data that has not been recently used. Must be greater than IFS.SERVICE.ACLCACHE.UrgentTrigger but less than IFS.SERVICE.ACLCACHE.Size.                      | 600 - Small<br>2400 - Medium<br>6000 - Large | No         |
| IFS.SERVICE.ACLCACHE.<br>PurgeTarget                     | The target cache size, in ACLs, upon completion of a purge cycle. Must be less than IFS.SERVICE.ACLCACHE.NormalTrigger.                                                                                                                            | 400 - Small<br>1600 - Medium<br>4000 - Large | No         |
| IFS.SERVICE.CONNECTIONPOOL.<br>READONLY.MinimumSize      | The initial number of database connections in the read-only connection pool.                                                                                                                                                                       | 2 - Small<br>4 - Medium<br>6 - Large         | No         |

**Table B–1 (Cont.) IFS.SERVICE.\* Properties**

| Property                                               | Description and Usage Note                                                                                                                                                                                                                                                                                                                                                               | Default                                 | Required ? |
|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|------------|
| IFS.SERVICE.CONNECTIONPOOL.READONLY.TargetSize         | The target maximum number of database connections in the read-only connection pool. Must be greater than or equal to IFS.SERVICE.CONNECTIONPOOL.READONLY.MinimumSize.                                                                                                                                                                                                                    | 10 - Small<br>20 - Medium<br>30 - Large | No         |
| IFS.SERVICE.CONNECTIONPOOL.READONLY.MaximumSize        | The absolute maximum number of database connections in the read-only connection pool. Must be greater than or equal to IFS.SERVICE.CONNECTIONPOOL.READONLY.TargetSize.                                                                                                                                                                                                                   | 20 - Small<br>40 - Medium<br>60 - Large | No         |
| IFS.SERVICE.CONNECTIONPOOL.READONLY.TargetSizeTimeout  | The maximum period, in milliseconds, that the service will postpone a connection allocation request when there are no unallocated connections, if the current size of the read-only connection pool is greater than or equal to its target size but less than the maximum size. If a database connection does not become available within this period, a new connection will be created. | 1000                                    | No         |
| IFS.SERVICE.CONNECTIONPOOL.READONLY.MaximumSizeTimeout | The maximum period, in milliseconds, that a service will postpone a connection allocation request when there are no unallocated connections, if the current size of the read-only connection pool is equal to its maximum size. If a database connection does not become available within this period, the allocation request will fail and an exception will be thrown.                 | 10000                                   | No         |
| IFS.SERVICE.CONNECTIONPOOL.WRITEABLE.MinimumSize       | The initial number of database connections in the writeable connection pool.                                                                                                                                                                                                                                                                                                             | 2 - Small<br>4 - Medium<br>6 - Large    | No         |
| IFS.SERVICE.CONNECTIONPOOL.WRITEABLE.TargetSize        | The target maximum number of database connections in the writeable connection pool. Must be greater than or equal to IFS.SERVICE.CONNECTIONPOOL.WRITEABLE.MinimumSize.                                                                                                                                                                                                                   | 10 - Small<br>20 - Medium<br>30 - Large | No         |

**Table B–1 (Cont.) IFS.SERVICE.\* Properties**

| Property                                                  | Description and Usage Note                                                                                                                                                                                                                                                                                                                                                               | Default                                                       | Required ? |
|-----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|------------|
| IFS.SERVICE.CONNECTIONPOOL.WRITEABLE.MaximumSize          | The absolute maximum number of database connections in the writeable connection pool. Must be greater than or equal to IFS.SERVICE.CONNECTIONPOOL.WRITEABLE.TargetSize.                                                                                                                                                                                                                  | 20 - Small<br>40 - Medium<br>60 - Large                       | No         |
| IFS.SERVICE.CONNECTIONPOOL.WRITEABLE.TargetSizeTimeout    | The maximum period, in milliseconds, that the service will postpone a connection allocation request when there are no unallocated connections, if the current size of the writeable connection pool is greater than or equal to its target size but less than the maximum size. If a database connection does not become available within this period, a new connection will be created. | 1000                                                          | No         |
| IFS.SERVICE.CONNECTIONPOOL.WRITEABLE.MaximumSizeTimeout   | The maximum period, in milliseconds, that a service will postpone a connection allocation request when there are no unallocated connections, if the current size of the writeable connection pool is equal to its maximum size. If a database connection does not become available within this period, the allocation request will fail and an exception will be thrown.                 | 10000                                                         | No         |
| IFS.SERVICE.CaseSensitiveAuthentication                   | Whether, in performing Cleartext authentication, passwords are case sensitive.                                                                                                                                                                                                                                                                                                           | false                                                         | No         |
| IFS.SERVICE.CREDENTIALMANAGER.CredentialNameTokenizer     | The fully qualified classname of the CredentialNameTokenizer.                                                                                                                                                                                                                                                                                                                            | oracle.ifs.common.IfsCredentialNameTokenizer                  | No         |
| IFS.SERVICE.CREDENTIALMANAGER.*                           | The configuration of credential managers for the service. Do not edit these properties directly, except for IFS.SERVICE.CREDENTIALMANAGER.Oid.IfsPasswordApplications.                                                                                                                                                                                                                   |                                                               |            |
| IFS.SERVICE.CREDENTIALMANAGER.Oid.IfsPasswordApplications | The names of the applications that authenticate using users' Oracle Files-specific passwords instead of their Oracle Internet Directory passwords.                                                                                                                                                                                                                                       | null.<br>(Comma-delimited for configuration on Oracle Files.) | No         |

**Table B-1 (Cont.) IFS.SERVICE.\* Properties**

| Property                                 | Description and Usage Note                                                                                                                                                                                                                 | Default                                         | Required ? |
|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|------------|
| IFS.SERVICE.DATACACHE.Size               | The absolute maximum size of the service's data cache, in LIBRARYOBJECTs. The service data cache holds the attribute values of recently used LIBRARYOBJECTs.                                                                               | 7500 - Small<br>30000 - Medium<br>75000 - Large | No         |
| IFS.SERVICE.DATACACHE.NormalTrigger      | The cache size, in LIBRARYOBJECTs, at which the service data cache schedules a low-priority purge of data that has not been recently used.                                                                                                 | 5000 - Small<br>20000 - Medium<br>50000 - Large | No         |
| IFS.SERVICE.DATACACHE.UrgentTrigger      | The cache size, in LIBRARYOBJECTs, at which the service data cache schedules a high-priority purge of data that has not been recently used. Must be greater than IFS.SERVICE.DATACACHE.NormalTrigger.                                      | 5500 - Small<br>22000 - Medium<br>55000 - Large | No         |
| IFS.SERVICE.DATACACHE.EmergencyTrigger   | The cache size, in LIBRARYOBJECTs, at which the service data cache performs an immediate purge of data that has not been recently used. Must be greater than IFS.SERVICE.DATACACHE.UrgentTrigger but less than IFS.SERVICE.DATACACHE.Size. | 6000 - Small<br>24000 - Medium<br>60000 - Large | No         |
| IFS.SERVICE.DATACACHE.PurgeTarget        | The target cache size, in LIBRARYOBJECTs, upon completion of a purge cycle. Must be less than IFS.SERVICE.DATACACHE.NormalTrigger.                                                                                                         | 4000 - Small<br>16000 - Medium<br>40000 - Large | No         |
| IFS.SERVICE.JDBC.DatabaseUrl             | URL of the database instance containing the Oracle Files schema JDBC connect string. See the <i>Oracle9i JDBC Developer's Guide and Reference</i> for syntax and examples.                                                                 | none                                            | No         |
| IFS.SERVICE.JDBC.DriverType              | Specifies the JDBC driver type. Do not change.                                                                                                                                                                                             | oci8                                            | No         |
| IFS.SERVICE.JDBC.TracingEnabled          | Prints JDBC debugging information to the standard output. Do not change.                                                                                                                                                                   | false                                           | No         |
| IFS.SERVICE.JDBC.DefaultRowPrefetch      | Number of result set rows prefetched. If set to null or 0, prefetches 10 rows. Do not change.                                                                                                                                              | 0                                               | No         |
| IFS.SERVICE.SESSION.TransactionStackSize | The maximum number of nested transactions by the session.                                                                                                                                                                                  | 100                                             | No         |



**Table B–1 (Cont.) IFS.SERVICE.\* Properties**

| Property                                          | Description and Usage Note                                                                                                                                                                                                                                                                                                         | Default                                                    | Required ? |
|---------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|------------|
| IFS.SERVICE.SESSION.EventPoller                   | The event poller used by a session to generate the session's "heartbeat." Must be either oracle.ifs.beans.LibrarySessionEventPollerThreadPerProcess (recommended) or oracle.ifs.beans.LibrarySessionEventPollerThreadPerSession.                                                                                                   | oracle.ifs.beans.LibrarySessionEventPollerThreadPerProcess | No         |
| IFS.SERVICE.SESSION.EventPollerPeriod             | The period, in milliseconds, of the session's "heartbeat." In addition to indicating the session's health to the service, the heartbeat allows an idle session to process events generated by other sessions or services.                                                                                                          | 2500                                                       | No         |
| IFS.SERVICE.SESSION.DefaultSearchTimeoutPeriod    | The period, in seconds, after which a search API call is terminated, even if incomplete. If a search times out in this manner, it is terminated and an exception is thrown. The session performing the search remains valid. A value of 0 disables search time-outs.                                                               | 60                                                         | No         |
| IFS.SERVICE.SESSION.BEANSOBJECTCACHE.Size         | The target maximum size of the "bean-side" session object cache, in LIBRARYOBJECTS. The bean-side session object cache holds instances of oracle.ifs.beans.LibraryObject. If IFS.SERVICE.SESSION.SERVEROBJECTCACHE.IsUnbounded is false, this value is ignored and implicitly equal to IFS.SERVICE.SESSION.SERVEROBJECTCACHE.Size. | 750                                                        | No         |
| IFS.SERVICE.SESSION.FOLDERPATHCACHE.Enabled       | Whether the session caches the resolution of folder paths.                                                                                                                                                                                                                                                                         | true                                                       | No         |
| IFS.SERVICE.SESSION.FOLDERPATHCACHE.Size          | The absolute maximum size of the session's folder path cache, in cached folder paths.                                                                                                                                                                                                                                              | 150                                                        | No         |
| IFS.SERVICE.SESSION.FOLDERPATHCACHE.NormalTrigger | The cache size, in folder paths, at which the session's folder path cache schedules a low-priority purge of data that has not been recently used.                                                                                                                                                                                  | 100                                                        | No         |

**Table B–1 (Cont.) IFS.SERVICE.\* Properties**

| Property                                               | Description and Usage Note                                                                                                                                                                                                                                                        | Default | Required ? |
|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|------------|
| IFS.SERVICE.SESSION.FOLDERPATHCACHE.UrgentTrigger      | The cache size, in folder paths, at which the session's folder path cache schedules a high-priority purge of data that has not been recently used. Must be greater than IFS.SERVICE.SESSION.FOLDERPATHCACHE.NormalTrigger and less than IFS.SERVICE.SESSION.FOLDERPATHCACHE.Size. | 110     | No         |
| IFS.SERVICE.SESSION.FOLDERPATHCACHE.PurgeTarget        | The target cache size, in folder paths, upon completion of a purge cycle. Must be less than IFS.SERVICE.SESSION.FOLDERPATHCACHE.NormalTrigger.                                                                                                                                    | 80      | No         |
| IFS.SERVICE.SESSION.SERVEROBJECTCACHE.Size             | The absolute maximum size of the "server-side" session object cache, in LIBRARYOBJECTs. The server-side session object cache holds instances of oracle.ifs.server.S_Library Object and oracle.ifs.beans.LibraryObject.                                                            | 750     | No         |
| IFS.SERVICE.SESSION.SERVEROBJECTCACHE.NormalTrigger    | The cache size, in LIBRARYOBJECTs, at which the session data caches schedule a low-priority purge of data that has not been recently used.                                                                                                                                        | 500     | No         |
| IFS.SERVICE.SESSION.SERVEROBJECTCACHE.UrgentTrigger    | The cache size, in LIBRARYOBJECTs, at which the session data caches schedule a high-priority purge of data that has not been recently used. Must be greater than IFS.SERVICE.SESSION.SERVEROBJECTCACHE.NormalTrigger.                                                             | 550     | No         |
| IFS.SERVICE.SESSION.SERVEROBJECTCACHE.EmergencyTrigger | The cache size, in LIBRARYOBJECTs, at which the session data caches perform an immediate purge of data that has not been recently used. Must be greater than IFS.SERVICE.SESSION.SERVEROBJECTCACHE.UrgentTrigger but less than IFS.SERVICE.SESSION.SERVEROBJECTCACHE.Size.        | 600     | No         |
| IFS.SERVICE.SESSION.SERVEROBJECTCACHE.PurgeTarget      | The target cache size, in LIBRARYOBJECTs, upon completion of a purge cycle. Must be less than IFS.SERVICE.SESSION.SERVEROBJECTCACHE.NormalTrigger.                                                                                                                                | 400     | No         |

**Table B–1 (Cont.) IFS.SERVICE.\* Properties**

| Property                                   | Description and Usage Note                                                                                                                                                                                                                                                                                                                                                                                   | Default                     | Required ? |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|------------|
| IFS.SERVICE.TRACING.ChannelCount           | The number of trace logger channels. Oracle reserves channels 0 to <code>TraceLogger.LAST_RESERVED_CHANNEL</code> . Refer to the Javadoc for class <code>oracle.ifs.common.TraceLogger</code> for a list of Oracle-defined channels.                                                                                                                                                                         | 50                          | No         |
| IFS.SERVICE.TRACING.ServiceTraceType       | The destination of trace data generated by a service. Must be <code>TRACETYPE_NONE</code> (disabled) or <code>TRACETYPE_LOCAL</code> (writes to a file on the local file system).                                                                                                                                                                                                                            | <code>TRACETYPE_NONE</code> | No         |
| IFS.SERVICE.TRACING.ServerSessionTraceType | The destination of trace data generated by a server-side session. Must be <code>TRACETYPE_NONE</code> (disabled), <code>TRACETYPE_LOCAL</code> (writes to a file on the local file system), <code>TRACETYPE_REMOTE</code> (routes to the service's trace logger), or <code>TRACETYPE_BOTH</code> (writes to a file on the local file system and routes to the service's trace logger).                       | <code>TRACETYPE_NONE</code> | No         |
| IFS.SERVICE.TRACING.BeansSessionTraceType  | The destination of trace data generated by a bean-side session. Must be <code>TRACETYPE_NONE</code> (disabled), <code>TRACETYPE_LOCAL</code> (writes to a file on the local file system), <code>TRACETYPE_REMOTE</code> (routes to the server-side session's trace logger), or <code>TRACETYPE_BOTH</code> (writes to a file on the local file system and routes to the server-side session's trace logger). | <code>TRACETYPE_NONE</code> | No         |
| IFS.SERVICE.TRACING.TraceLevelChanneln     | Tracing verbosity for trace channel <i>n</i> . Refer to the Javadoc for class <code>oracle.ifs.common.TraceLogger</code> for a list of Oracle-defined trace levels.                                                                                                                                                                                                                                          | none                        | No         |
| IFS.SERVICE.TRACING.DefaultTraceLevel      | Default tracing verbosity for all trace channels. See <code>oracle.ifs.common.TraceLogger</code> Javadoc for a list of trace levels.                                                                                                                                                                                                                                                                         | none                        | No         |



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## Server Configuration Properties

Each server has an `IFS.SERVER.Class` property that identifies the Java class that the node uses to instantiate the server or agent. You cannot change the name of the class; if you do, the protocol server or agent will not run.

The properties listed in these tables are all required for an agent or protocol server to run properly. When you install and configure an Oracle Files instance, the properties are configured using the default values shown in the tables in this section. You can change these in the base class and then create new servers or agents based on the changes, or you can change the values in the running server or agent. See [Chapter 5, "Administrative Operations in Oracle Enterprise Manager"](#) for additional information.

This appendix includes the following topics:

- [Access Control List Index Agent](#)
- [AppleTalk Filing Protocol \(AFP\) Server](#)
- [Content Garbage Collection Agent](#)
- [Dangling Object AV Cleanup Agent](#)
- [Distributed Authoring and Versioning \(DAV\) Server Configuration](#)
- [Event Exchanger Agent](#)
- [Expiration Agent](#)
- [Folder Index Analyzer Agent](#)
- [File Transfer Protocol \(FTP\) Server](#)
- [Files Base Server Configuration](#)
- [Files-Specific Server Configuration](#)

- 
- Garbage Collection Agent
  - Inbound Queue Listener Agent
  - Lock Agent
  - NbServer [NetBIOS]
  - Network File System (NFS) Protocol Server
  - NT File System (NTFS) Protocol Server
  - Print Agent
  - Quota Agent
  - Service Warmup Agent
  - Service Watchdog Agent
  - Server Message Block (SMB) Protocol Server

## Access Control List Index Agent

The Access Control List Index Agent performs background maintenance operations on internal Oracle Files tables that are referred to collectively as the "ACL index". These tables make certain security functions (such as object discovery, ACL resolution, ACL proxies, and Workspace membership resolution) perform better.

The IFS.SERVER.Class that instantiates this agent is:

```
oracle.ifs.management.servers.AccessControlListIndexAgent
```

**Table C-1 Access Control List Index Agent Properties**

| Property                                                            | Description and Usage Note                                                                                                                             | Default |
|---------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| IFS.SERVER.SESSION.User                                             | Username for server session. Must be a user with Oracle Files administrator privileges.                                                                | system  |
| FS.SERVER.TIMER.InitialDelay                                        | The initial delay when the agent will first run; this allows the agents' first trigger to be staggered.<br>h = hours, m = minutes, s = seconds         | 10s     |
| IFS.SERVER.TIMER.ActivationPeriod                                   | Time interval between agent activation. Default setting of 24h activates the agent every 24 hours. Set time in h (hours), m (minutes), or s (seconds). | 24h     |
| IFS.SERVER.AGENT.ACCESSCONTROLLISTINDEXAGENT.MaxDeferredEntryCount  | Maximum number of entries to process in a single batch. The default value should rarely be modified.                                                   | 10000   |
| FS.SERVER.AGENT.ACCESSCONTROLLISTINDEXAGENT.PublishStatisticsPeriod | Time interval at which agent statistics are published. Set time in h (hours), m (minutes), or s (seconds).                                             | 1m      |

## AppleTalk Filing Protocol (AFP) Server

AppleTalk Filing Protocol (AFP) is the remote filing system protocol that enables Macintosh users to store, access, and share files over a network. AppleShare is the AFP file server that is implemented on Macintosh computers. The Oracle Files AFP server enables Macintosh users to access Oracle Files as if it were an AppleShare server.

The IFS.SERVER.Class that instantiates the AFP Server is:

```
oracle.ifs.protocols.afp.AfpServer
```

**Table C–2    AFP Server Properties**

| Property                                                    | Description and Usage Note                                                                                                                                                                                                                     | Default                                                                  |
|-------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| <code>IFS.SERVER.SESSION.User</code>                        | Username for server session. Must be a user with Oracle Files administrator privileges.                                                                                                                                                        | system                                                                   |
| <code>IFS.SERVER.PROTOCOL.AFP.AcceptGuestConnections</code> | Allows or prevents unauthenticated guest connections. Set to true to allow unauthenticated users (guests) to connect. Set to false to require authentication (thus disabling guest access).                                                    | true                                                                     |
| <code>IFS.SERVER.PROTOCOL.AFP.DisableFolderIcons</code>     | Disables or enables custom Macintosh folder icons. Set to true to disable folder icons. Set to false to enable custom folder icons. By default, custom folder icons are disabled to provide faster file browsing.                              | true                                                                     |
| <code>IFS.SERVER.PROTOCOL.AFP.DisablePkgInfo</code>         | Whether or not to "vanish" the special Macintosh "contents/PkgInfo" file. Set to true to hide all PkgInfo files. Set to false to display PkgInfo files. By default, PkgInfo files are not displayed to provide faster file browsing.           | true                                                                     |
| <code>IFS.SERVER.PROTOCOL.AFP.Encoding</code>               | The encoding to use (Java or IANA code name) to convert Macintosh strings.                                                                                                                                                                     | MacRoman                                                                 |
| <code>IFS.SERVER.PROTOCOL.AFP.LocalBindAddress</code>       | The IP address that the server will use (bind to) when listening for incoming connections.<br><br>This value is set to the server IP address by default. It should not be modified except in unusual cases, for example, a multi-homed server. | IP address or DNS name                                                   |
| <code>IFS.SERVER.PROTOCOL.AFP.MaxOpenFiles</code>           | Maximum number of open file forks for each connected session. Macintosh files consist of up to two forks. A connected session can open only up to this number of forks simultaneously.                                                         | 1024                                                                     |
| <code>IFS.SERVER.PROTOCOL.AFP.Port</code>                   | The AFP port; fixed and set to 548.                                                                                                                                                                                                            | If not specified, Oracle Files uses the local host address and port 548. |

## Content Garbage Collection Agent

File attributes and content are stored separately. For performance reasons, the content of a document is not deleted when the document is deleted. The Content Garbage Collection Agent deletes the unreferenced content. This agent runs at specific times of the day as specified in the server configuration file.

The `IFS.SERVER.Class` that instantiates this agent is:

```
oracle.ifs.management.servers.ContentGarbageCollectionAgent
```



**Table C–3 Content Garbage Collection Agent Properties**

| Property                                                                    | Description and Usage Note                                                                                                                                                     | Default |
|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| IFS.SERVER.AGENT.CONTENTGARBAGECOLLECTIONAGENT.FilteredContentRemovalPeriod | Amount of time filtered content is kept in the system before it is deleted. HTML-generated rendition of content is an example of filtered content. Unit of measure is seconds. | 3600    |

## Dangling Object AV Cleanup Agent

Similar to the Garbage Collection Agent, the Dangling Object AV Cleanup Agent removes orphaned object type references and identifies all invalid object references, such as references to objects that no longer exist, and sets these references to null for array type attributes and zero for scalar attributes. For example, this agent cleans up the owner attribute of a document pointing to directory object which was deleted and is now invalid.

The IFS.SERVER.Class that instantiates this agent is:

```
oracle.ifs.management.servers.DanglingObjectAVCleanupAgent
```

**Table C–4 Dangling Object AV Cleanup Agent Properties**

| Property                                                             | Description and Usage Note                                                                                                                                                                                                                        | Default                                                                                                                                                                 |
|----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IFS.SERVER.AGENTS.DANGLINGOBJECTAVCLEANUPAGENT.ExcludedAttributeList | <p>A list of attributes for which invalid references to Library Objects are not cleaned up.</p> <p>Do not delete the default values, so the Garbage Collection Agent can handle deleted users correctly. Add additional attributes as needed.</p> | <p>AUDITENTRY</p> <p>PUBLICOBJECT: OWNER</p> <p>PUBLICOBJECT: DELETOR</p> <p>PUBLICOBJECT: CREATOR</p> <p>PUBLICOBJECT:LAST MODIFIER</p> <p>VERSIONSERIES: RESERVOR</p> |

## Distributed Authoring and Versioning (DAV) Server Configuration

Through Web Folders (WebDAV) and Web Folders-enabled applications, you can edit Microsoft Office documents stored in Oracle Files in place with Windows Office 2000. A new document can be created in Oracle Files this way. Customers can then delete this document in a Web Folder. This servlet also serves documents over HTTP (browser).

The IFS.SERVER.Class that instantiates this server is:

```
oracle.ifs.protocols.dav.impl.server.IfsServletServer
```

**Table C–5 DAV Server Properties**

| Property                                                       | Description and Usage Note                                                                                                                                                                                                       | Default      |
|----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| IFS.SERVER.PROTOCOL.DAV.Browse.Enabled                         | This value has no effect in Oracle Files.                                                                                                                                                                                        |              |
| IFS.SERVER.PROTOCOL.DAV.ContextServletPath                     | This value has no effect in Oracle Files.                                                                                                                                                                                        |              |
| IFS.SERVER.PROTOCOL.DAV.GuestPool.Size.Max                     | The maximum size of the anonymous session pool. This is allocated if the target size is not sufficient to service traffic volume, but will wait IFS.SERVER.PROTOCOL.DAV.GuestPool.Timeout.Target milliseconds before allocating. | 10           |
| IFS.SERVER.PROTOCOL.DAV.GuestPool.Size.Min                     | The minimum size of the anonymous session pool.<br>This is allocated immediately upon startup.                                                                                                                                   | 1            |
| IFS.SERVER.PROTOCOL.DAV.GuestPool.Size.Target                  | The target size of the anonymous session pool. This is allocated immediately if the target size is not sufficient to service traffic volume.                                                                                     | 5            |
| IFS.SERVER.PROTOCOL.DAV.GuestPool.Timeout.Max                  | The maximum time before the anonymous session pool times out. The DavServer will wait this amount of time before returning "Server Busy" if the Max size has been reached.                                                       | 1500         |
| IFS.SERVER.PROTOCOL.DAV.GuestPool.Timeout.Target               | The targeted time before the anonymous session pool times out. The DavServer will wait this amount of time before allocating a new session if the Target size has been reached.                                                  | 500          |
| IFS.SERVER.PROTOCOL.DAV.IfsServer.Auth.TokenCredential.Timeout | When the DavServer generates a TokenCredential, how long should it be good for.                                                                                                                                                  | 864000       |
| IFS.SERVER.PROTOCOL.DAV.Jsp.AllowedDirs                        | This value has no effect in Oracle Files.                                                                                                                                                                                        |              |
| IFS.SERVER.PROTOCOL.DAV.Jsp.Enabled                            | Is JSP execution enabled? Must always be false. Do not change.                                                                                                                                                                   | false        |
| IFS.SERVER.PROTOCOL.DAV.Jsp.Lookup.BundleName                  | This value has no effect in Oracle Files.                                                                                                                                                                                        |              |
| IFS.SERVER.PROTOCOL.DAV.Jsp.Lookup.ParameterName               | This value has no effect in Oracle Files.                                                                                                                                                                                        |              |
| IFS.SERVER.PROTOCOL.DAV.LoginBeanName                          | The name by which the IfsHttpLogin bean is bound to the HttpSession. Do not change.                                                                                                                                              | IfsHttpLogin |

**Table C–5 (Cont.) DAV Server Properties**

| Property                                              | Description and Usage Note                             | Default    |
|-------------------------------------------------------|--------------------------------------------------------|------------|
| IFS.SERVER.PROTOCOL.DAV.<br>UserLoginPool.Max         | How many concurrent connections a given user can have. | 3          |
| IFS.SERVER.PROTOCOL.DAV.<br>Welcome                   | The welcome files, in the order they will be searched. | index.html |
| IFS.SERVER.PROTOCOL.DAV.<br>Webfolders.DefaultCharset | This value has no effect in Oracle Files.              |            |

## Event Exchanger Agent

This agent periodically purges expired events from the event queue.

The IFS.SERVER.Class that instantiates this agent is:

```
oracle.ifs.management.servers.EventExchangerAgent
```

**Table C–6 Event Exchanger Agent Properties**

| Property                 | Description and Usage Note                                                                                                                   | Default |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|---------|
| IFS.SERVER.EventLifespan | The time, in seconds, after which an event is assumed to have been delivered and become eligible for purging.<br>Unit of measure is seconds. | 1800    |

## Expiration Agent

All public objects have an attribute called ExpirationDate. Once this date passes, the public objects are automatically deleted. This is handled by the Expiration Agent, which periodically deletes expired objects. If the expiration date of a public object passes, the agent deletes the public object. This agent runs at specific times of the day as specified in the server configuration parameter, IFS.SERVER.TIMER.ACTIVATIONPERIOD.

The IFS.SERVER.Class that instantiates this agent is:

```
oracle.ifs.management.servers.ExpirationAgent
```

Table C–7    *Expiration Agent Properties*

| Property                          | Description and Usage Note                                                                                  | Default  |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------|----------|
| IFS.SERVER.SESSION.User           | Username for server session. Must be a user with Oracle Files administrator privileges.                     | system   |
| IFS.SERVER.TIMER.InitialTimeOfDay | First event.<br>Set time based on a 24 hour clock.                                                          | 02:00:00 |
| IFS.SERVER.TIMER.ActivationPeriod | Defines the time interval between when the agent will be triggered.<br>h = hours, m = minutes, s = seconds. | 24h      |

## Folder Index Analyzer Agent

Oracle Files uses an internal mechanism called the Folder Index to speed up folder-restricted queries. This index is modified every time the folder hierarchy gets changed, to reflect the up-to-date folder hierarchy. However, certain forms of file links may leave the Folder Index in a suboptimal state. The Folder Index Analyzer Agent runs periodically to detect and correct any such state, and return the Folder Index to an optimal state.

The IFS.SERVER.Class that instantiates this agent is:

```
oracle.ifs.management.servers.FolderIndexAnalyzerAgent
```

You should never modify these values.

Table C–8    *Folder Index Analyzer Agent Properties*

| Property                                                        | Description and Usage Note                                                                                                                  | Default |
|-----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|---------|
| IFS.SERVER.AGENTS.FOLDERINDEXANALYZERAGENT.MaxParentsThreshold  | The threshold for max number of parents after which FIS is considered suboptimal.<br>This condition is ANDed with the MaxChildrenThreshold. | 10      |
| IFS.SERVER.AGENTS.FOLDERINDEXANALYZERAGENT.MaxChildrenThreshold | The threshold for max number of children after which FIS is considered suboptimal.<br>This condition is ANDed with the MaxParentsThreshold. | 10      |

## File Transfer Protocol (FTP) Server

The FTP server allows users to easily transfer files between one file system and the Oracle Files repository. FTP is particularly useful when performing bulk transfers,

in regards to both ease and performance. In addition to the common FTP commands, the Oracle Files server also has built-in parsing and versioning support.

The IFS.SERVER.Class that instantiates the FTP server is:

```
oracle.ifs.protocols.ftp.server.FtpServer
```

**Table C–9 FTP Server Properties**

| Property                                  | Description and Usage Note                                                                                                                     | Default                       |
|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| IFS.SERVER.PROTOCOL.FTP.Localhost         | Optionally, specify the host name if the host is multi-homed in the network.                                                                   | Default_Hostname              |
| IFS.SERVER.PROTOCOL.FTP.AnonymousAllowed  | If set to true, allows anonymous connections.                                                                                                  | true                          |
| IFS.SERVER.PROTOCOL.FTP.DateFormat        | Specifies the default date format.                                                                                                             | MMM dd HH:mm                  |
| IFS.SERVER.PROTOCOL.FTP.Timeout           | Amount of time between activity before the connection times out; default is 900 seconds or 15 minutes.<br><br>Unit of measure is milliseconds. | 900000                        |
| IFS.SERVER.PROTOCOL.FTP.Delimiter         | Specifies the Folder Path Delimiter.                                                                                                           | /                             |
| IFS.SERVER.PROTOCOL.FTP.Port              | The port on which the server is running.                                                                                                       | 21 (Windows NT), 2100 (UNIX)  |
| IFS.SERVER.PROTOCOL.FTP.AcceptQueueSize   | The number of server requests back-logged before denying requests.<br><br>Do not change.                                                       | 50                            |
| IFS.SERVER.PROTOCOL.FTP.AnonymousPoolSize | Initial pool size for anonymous connections.                                                                                                   | 0                             |
| IFS.SERVER.PROTOCOL.FTP.BannerText        | The string that will be displayed when the FTP client is started.                                                                              | Oracle Files FTP Server ready |

## Files Base Server Configuration

Oracle Files uses additional server configuration properties, specific to Oracle Files. These properties are inherited and locally defined.

---

**Note:** If you configured Oracle Files to reuse a previously created schema, you must edit the following Files Base Server Configuration properties so that they point to the appropriate machine:

`IFS.SERVER.APPLICATION.UIX.ApplicationHost`

`IFS.SERVER.APPLICATION.UIX.ApplicationPort`

Or, you can override these properties in the server-specific configurations.

---

**Table C-10 Files Base Server Properties**

| Property                                                        | Description and Usage Note                                                                                                                                                 | Default                                                                 |
|-----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
| <code>IFS.SERVER.APPLICATION.FILES.FileSyncUrl</code>           | URL for the Oracle FileSync installation executable. Set to a relative URL if the client is on Oracle Files, or to an absolute URL if the client is on a different server. | <code>AllPublic/Users/Users-S/system-data/downloads/FileSync.exe</code> |
| <code>IFS.SERVER.APPLICATION.FILES.PortalUrl</code>             | URL for the Back to Portal global button.                                                                                                                                  | null                                                                    |
| <code>IFS.SERVER.APPLICATION.FILES.PrivacyStatement</code>      | Location of privacy statement relative to the folder <code>/AllPublic/Users/Users-s/system-data/</code> .                                                                  | null                                                                    |
| <code>IFS.SERVER.APPLICATION.FILES.PublicBrowsingAllowed</code> | Whether users can browse public folders without logging in. Only applies to dedicated schema mode.                                                                         | true                                                                    |
| <code>IFS.SERVER.APPLICATION.FILES.WorkflowUrl</code>           | URL for the workflow global button.                                                                                                                                        | Set during install                                                      |
| <code>IFS.SERVER.APPLICATION.UIX.AdministratorEmail</code>      | The email address of the person who administers the system and receives alerts and error reports.                                                                          | Set during install                                                      |
| <code>IFS.SERVER.APPLICATION.UIX.ApplicationHost</code>         | The host name of the site (where a user connects; e.g., <code>files.oracle.com</code> ).                                                                                   | Set during install                                                      |
| <code>IFS.SERVER.APPLICATION.UIX.ApplicationPort</code>         | The port number of the site (usually 7777).                                                                                                                                | Set during install                                                      |
| <code>IFS.SERVER.APPLICATION.UIX.ApplicationServletMount</code> | The mount point for the application servlet.                                                                                                                               | <code>/files/app</code>                                                 |
| <code>IFS.SERVER.APPLICATION.UIX.ApplicationUseHttps</code>     | Whether the site uses SSL/HTTPS; e.g., <code>https://files.oracle.com</code> .                                                                                             | false                                                                   |
| <code>IFS.SERVER.APPLICATION.UIX.ContentServletMount</code>     | The mount point for the content/DAV servlet.                                                                                                                               | <code>/files/content</code>                                             |

**Table C–10 (Cont.) Files Base Server Properties**

| Property                                                | Description and Usage Note                                                                                                                               | Default                                       |
|---------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| IFS.SERVER.APPLICATION.UIX.HttpAuthManagerClass         | The HTTP Authentication Manager to use. <b>Do not change.</b>                                                                                            | oracle.ifs.files.servlet.FilesHttpAuthManager |
| IFS.SERVER.APPLICATION.UIX.MaximumUniqueSessionsPerUser | The maximum number of distinct sessions a Web user can get. After the maximum number has been reached, the sessions are shared in a round-robin fashion. | 3                                             |
| IFS.SERVER.APPLICATION.UIX.OID.UserProvisioningEnabled  | If set to true, enables on-demand enrollment, a process in which Oracle Files performs the necessary tasks to automatically provision a new user.        | true                                          |
| IFS.SERVER.APPLICATION.UIX.SSO.Enabled                  | If set to true, enables Single Sign-On (SSO).                                                                                                            | true                                          |
| IFS.SERVER.APPLICATION.UIX.Smtphost                     | The Host name of the SMTP server.                                                                                                                        | Set during install                            |
| IFS.SERVER.APPLICATION.UIX.SmtphostUser                 | The SMTP user, if the SMTP server requires a user to be specified.                                                                                       | Set during install                            |
| IFS.SERVER.APPLICATION.UIX.StaticResourcesMount         | The mount point for the static images used to render Web pages.                                                                                          | /files/static                                 |

## Files-Specific Server Configuration

Oracle Files uses several server configurations that do not have properties of their own; they only inherit from other configurations. The properties of the Files-specific configurations may override properties from the inherited configurations.

**Table C–11 Files-Specific Server Configurations**

| Server Configuration Name                        | Inherits From:                                        |
|--------------------------------------------------|-------------------------------------------------------|
| FilesAfpServerConfiguration                      | FilesBaseServerConfiguration, AfpServerConfiguration  |
| FilesArchiveFileToBFileAgentConfiguration        | FilesBaseServerConfiguration                          |
| FilesDelayedArchiveFileToBFileAgentConfiguration | FilesBaseServerConfiguration                          |
| FilesFtpServerConfiguration                      | FilesBaseServerConfiguration, FtpServerConfiguration  |
| FilesHttpServerConfiguration                     | FilesBaseServerConfiguration, DavServerConfiguration  |
| FilesNfsServerConfiguration                      | FilesBaseServerConfiguration, NfsServerConfiguration  |
| FilesNtfsServerConfiguration                     | FilesBaseServerConfiguration, NtfsServerConfiguration |

**Table C–11 (Cont.) Files-Specific Server Configurations**

| Server Configuration Name                       | Inherits From:                                       |
|-------------------------------------------------|------------------------------------------------------|
| FilesOidUserSynchronizationAgent Configuration  | FilesBaseServerConfiguration                         |
| FilesReviewProcessExpirationAgent Configuration | FilesBaseServerConfiguration                         |
| FilesSmbServerConfiguration                     | FilesBaseServerConfiguration, SmbServerConfiguration |
| FilesSubscriberExpirationAgent Configuration    | FilesBaseServerConfiguration                         |
| FilesSubscriberUsageAgent Configuration         | FilesBaseServerConfiguration                         |
| FilesSubscriberUsageStatsAgent Configuration    | FilesBaseServerConfiguration                         |
| FilesUserExpirationAgentConfiguration           | FilesBaseServerConfiguration                         |
| FilesWorkflowLockCleanupAgent Configuration     | FilesBaseServerConfiguration                         |

**The Oracle Files HTTP Server**

Do not change the name of the FilesHttpServer. If you change the server name, you will not be able to access Oracle Files through the Web application interface.

If you must change the FilesHttpServer name, you must also change the name in the web.xml configuration file. To change the FilesHttpServer name:

- 1. Rename the server in Oracle Enterprise Manager Web site.
- 2. Edit web.xml, located in the following directory:

```
$ORACLE_HOME/j2ee/OC4J_iFS_files/applications/files/files/WEB-INF/
```

Look for the following lines of code and replace the value for <param-value>:

```
<init-param>  
  <param-name>IFS.SERVER.PROTOCOL.DAV.IfsServer.Name</param-name>  
  <param-value>FilesHttpServer</param-value>  
</init-param>
```

- 3. Save the file.
- 4. Restart the OC4J instance.



## Garbage Collection Agent

The Garbage Collection Agent runs at specific times of the day as specified in the server configuration file. Currently, this agent fixes invalid public object owners, creators, deletors, and modifiers.

For example, a document is created and modified by "ssmith." The creator, owner, and last modifier attribute of document are set to ssmith's object ID. If "ssmith" is deleted, the attribute value becomes invalid. The agent replaces these invalid attribute values with the ID of the replacement owner, creator, or deleter specified in the server configuration file.

The IFS.SERVER.Class that instantiates this agent is:

```
oracle.ifs.management.servers.GarbageCollectionAgent
```

**Table C–12**    *Garbage Collection Agent Properties*

| Property                                                    | Description and Usage Note                            | Default |
|-------------------------------------------------------------|-------------------------------------------------------|---------|
| IFS.SERVER.AGENT.GARBAGECOLLECTIONAGENT.ReplacementOwner    | User to be replaced as owner.<br>Modify as needed.    | system  |
| IFS.SERVER.AGENT.GARBAGECOLLECTIONAGENT.ReplacementDeleter  | User to be replaced as deleter.<br>Modify as needed.  | system  |
| IFS.SERVER.AGENT.GARBAGECOLLECTIONAGENT.ReplacementCreator  | User to be replaced as creator.<br>Modify as needed.  | system  |
| IFS.SERVER.AGENT.GARBAGECOLLECTIONAGENT.ReplacementModifier | User to be replaced as modifier.<br>Modify as needed. | system  |

## Inbound Queue Listener Agent

The Inbound Queue Listener Agent is a time-based agent that polls all of the inbound queues periodically so that Oracle Files can act upon the messages placed on inbound queues. The Inbound Queue Listener Agent can dequeue a message and delegate the work of processing to the message object itself.

The IFS.SERVER.Class that instantiates this agent is:

```
oracle.ifs.management.servers.InboundQueueListenerAgent
```

**Table C–13    Inbound Queue Listener Agent Properties**

| Property                                              | Description and Usage Note                            | Default |
|-------------------------------------------------------|-------------------------------------------------------|---------|
| IFS.SERVER.AGENT.INBOUNDQUEUE<br>LISTENERAGENT.Queues | Holds a list of queues that the agent will listen on. | IFS_IN  |

## Lock Agent

The Lock Agent is a time-based agent that releases locks that are timed out. The agent needs to be running at all times for the lock auto-expiration function to work.

The IFS.SERVER.Class that instantiates this agent is:

```
oracle.ifs.management.servers.LockAgent
```

## NbServer [NetBIOS]

The NbServer is a name server for Windows NetBIOS names. It tells client machines that its name is registered to a particular IP address.

The IFS.SERVER.Class that instantiates this server is:

```
oracle.ifs.protocols.smb.server.NbServer
```

**Table C–14    Nb Server Properties**

| Property                    | Description and Usage Note                                                                                                                       | Default                                               |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| IFS.SERVER.NB.Workgroup     | Name of the workgroup this server is in.                                                                                                         | WORKGROUP                                             |
| IFS.SERVER.NB.ServerComment | This holds the SMB server description that shows up in properties in Windows.                                                                    | Oracle Internet File Server                           |
| IFS.SERVER.NB.IpAddr        | If host is multi-homed, use this to choose the IP address if necessary                                                                           | IP Address returned by<br>Socket.getInet<br>Address() |
| IFS.SERVER.NB.Netmask       | NetMask for the name server. This is used to derive the broadcast address. No need to set this if the broadcast address is specified explicitly. | 255.255.252.0                                         |

**Table C–14 (Cont.) Nb Server Properties**

| Property                                  | Description and Usage Note                                                                                                                                                                | Default                                 |
|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| <code>IFS.SERVER.NB.Broadcast</code>      | Broadcast address. Use this if you know the broadcast address or want to override the address derived from the netmask. This is specified as a standard IP string, e.g. "144.25.103.255". | Derived from the IP address and netmask |
| <code>IFS.SERVER.NB.StatusInterval</code> | Number of packets between each status message to trace file.                                                                                                                              | 100                                     |
| <code>IFS.SERVER.NB.HostAnnouncer</code>  | Enables Host Announcement.                                                                                                                                                                | true                                    |

## Network File System (NFS) Protocol Server

The Network File System (NFS) protocol is used to provide file sharing between a client machine and a server machine across a network. The NFS protocol is a standard protocol which is widely used for file sharing on UNIX platforms. Although used primarily on UNIX platforms, the NFS protocol is designed to be operating system-independent and implementations of the NFS protocol exist for other platforms, such as Windows.

The `IFS.SERVER.Class` that instantiates the NFS server is:

```
oracle.ifs.protocols.nfs.server.NfsServer
```

**Table C–15 NFS Server Properties**

| Property                                               | Description and Usage Note                                                                                                                                                                               | Default |
|--------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <code>IFS.SERVER.PROTOCOL.NFS.Localhost</code>         | Specifies the IP address the server will listen on if the server machine is capable of listening on multiple IP addresses.<br><br>This is the same as the Localhost parameter on other protocol servers. | null    |
| <code>IFS.SERVER.PROTOCOL.NFS.PortmapUdpServers</code> | Specifies the number of UDP server threads to be started for the Portmap server.<br><br>The number of UDP server threads determines how many simultaneous UDP requests the Portmap server can handle.    | 1       |
| <code>IFS.SERVER.PROTOCOL.NFS.PortmapTcpEnabled</code> | Specifies whether or not the Portmap server will accept TCP connections in addition to UDP connections.                                                                                                  | true    |

**Table C-15 (Cont.) NFS Server Properties**

| Property                                          | Description and Usage Note                                                                                                                                                                                                                                                                                                                                                                           | Default                            |
|---------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| IFS.SERVER.PROTOCOL.NFS.<br>MountUdpServers       | Specifies the number of UDP server threads to be started for the Mount server.<br><br>The number of UDP server threads determines how many simultaneous UDP requests the Mount server can handle.                                                                                                                                                                                                    | 1                                  |
| IFS.SERVER.PROTOCOL.NFS.<br>MountTcpEnabled       | Specifies whether or not the Mount server will accept TCP connections in addition to UDP connections.                                                                                                                                                                                                                                                                                                | true                               |
| IFS.SERVER.PROTOCOL.NFS.<br>MountPort             | Specifies the port number which the Mount server will listen on. A value of zero will use any available port.<br><br>The Mount server will normally use any available port number and then register the port number being used with the Portmap server. A specific port number should be specified if the Mount server is a secondary server and does not register the port with the Portmap server. | 4048 for UNIX; 0 for Windows NT    |
| IFS.SERVER.PROTOCOL.NFS.<br>UdpServers            | Specifies the number of UDP server threads to be started for the NFS server.<br><br>The number of UDP server threads determines how many simultaneous UDP requests the NFS server can handle.                                                                                                                                                                                                        | 16                                 |
| IFS.SERVER.PROTOCOL.NFS.<br>TcpEnabled            | Specifies whether or not the NFS server will accept TCP connections in addition to UDP connections.                                                                                                                                                                                                                                                                                                  | true                               |
| IFS.SERVER.PROTOCOL.NFS.<br>Port                  | Specifies the port number which the NFS server will listen on.<br><br>The standard port number for the NFS server is port 2049. On UNIX systems, the standard UNIX NFS server will be running on the standard port, therefore the Oracle Files NFS server is configured to be a secondary NFS server running on a different port number.                                                             | 4049 for UNIX; 2049 for Windows NT |
| IFS.SERVER.PROTOCOL.NFS.<br>TrustedClientsEnabled | Enable Trusted Client List feature.                                                                                                                                                                                                                                                                                                                                                                  | false                              |
| IFS.SERVER.PROTOCOL.NFS.<br>TrustedClientList     | List of trusted NFS clients.                                                                                                                                                                                                                                                                                                                                                                         | <"">                               |
| IFS.SERVER.PROTOCOL.NFS.<br>NISEnabled            | Used to indicate if NIS is used for user management.                                                                                                                                                                                                                                                                                                                                                 | false                              |
| IFS.SERVER.PROTOCOL.NFS.<br>NISServiceProvider    | Provider of NIS service. This is an NIS server.                                                                                                                                                                                                                                                                                                                                                      | <"">                               |

**Table C–15 (Cont.) NFS Server Properties**

| Property                                                     | Description and Usage Note                                                                                                                                                                                                                                                                                                                                                                                                | Default |
|--------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <code>IFS.SERVER.PROTOCOL.NFS.CharacterEncoding</code>       | Specifies the character encoding to be used to interpret string such as file names that the NFS server receives from the clients. The value is the name of a Java character encoding. For example: ASCII, ISO8859_1, or Cp437. A null value indicates that the default character encoding should be used.                                                                                                                 | null    |
| <code>IFS.SERVER.PROTOCOL.NFS.UserCacheMax</code>            | Specifies the number of Oracle Files user sessions the NFS server will keep open.<br>This value should be set to the expected number of simultaneous active users.                                                                                                                                                                                                                                                        | 16      |
| <code>IFS.SERVER.PROTOCOL.NFS.AllowAnonymousUser</code>      | Allows users to login as anonymous/guest.                                                                                                                                                                                                                                                                                                                                                                                 | true    |
| <code>IFS.SERVER.PROTOCOL.NFS.ResetUserCache</code>          | Used to control the resetting of the user cache.<br>Used when privileges are changed.                                                                                                                                                                                                                                                                                                                                     | 0       |
| <code>IFS.SERVER.PROTOCOL.NFS.IoBufferSize</code>            | Specifies the I/O buffer size. The I/O buffer size determines the largest amount of data that can be read or written in a single request to the NFS server.                                                                                                                                                                                                                                                               | 32768   |
| <code>IFS.SERVER.PROTOCOL.NFS.IoBufferCacheTargetSize</code> | Specifies the number of I/O buffers that the NFS server will try to allocate.<br>This should be set to the expected number of simultaneous I/O operations.                                                                                                                                                                                                                                                                | 8       |
| <code>IFS.SERVER.PROTOCOL.NFS.ContentCacheFlush</code>       | Specifies the write flush time-out value in milliseconds. The default value of 2000 means that writes to an Oracle Files document will be committed to the database after 2 seconds.<br>Setting too low of a time-out value may cause additional database commits resulting is slower performance. Setting too high a time-out value will cause a delay before the data is committed and is available to other protocols. | 2000    |
| <code>IFS.SERVER.PROTOCOL.NFS.ContentCacheKeep</code>        | Specifies the keep time-out value in milliseconds. The default value of 10000 means that once a document is opened, the NFS server will attempt to cache its contents for 10 seconds.                                                                                                                                                                                                                                     | 10000   |
| <code>IFS.SERVER.PROTOCOL.NFS.ContentCacheMax</code>         | Specifies the maximum number of documents the NFS server will keep in its content cache.<br>Increasing the content cache size improves performance but will use additional database connections.                                                                                                                                                                                                                          | 8       |

Table C-15 (Cont.) NFS Server Properties

| Property                                           | Description and Usage Note                                                                                                                                                                                           | Default           |
|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| IFS.SERVER.PROTOCOL.NFS.RpcRequestCacheBufferSize  | Specifies the size of the request cache buffer. The request cache maintains a history of recent requests and is used to return a reply when a duplicate request is received from a client.                           | 65535             |
| IFS.SERVER.PROTOCOL.NFS.RpcRequestCacheMax         | Specifies the maximum number of requests to be kept in the request cache. The request cache maintains a history of recent requests and is used to return a reply when a duplicate request is received from a client. | 64                |
| IFS.SERVER.PROTOCOL.NFS.RpcRequestCacheMaxReplyLen | Specifies the maximum length of a reply to be kept in the request cache. The request cache maintains a history of recent requests and is used to return a reply when a duplicate request is received from a client.  | 16384             |
| IFS.SERVER.PROTOCOL.NFS.SafeWriteMode              | Specifies whether or not SafeWriteMode is enabled. If true, data written to NFS will be logged to the local disk in addition to being written to the database.                                                       | false             |
| IFS.SERVER.PROTOCOL.NFS.SafeWriteLogs              | Specifies the directory where the recovery log files will be written if SafeWriteMode is enabled.<br><br>The path specified is relative to the Oracle Files home directory where Oracle Files was installed.         | nfs/Recovery Logs |
| IFS.SERVER.PROTOCOL.NFS.SafeWriteActivationPeriod  | Specifies the activation period for the SafeWriteMode recovery thread in minutes. The default value of 20 indicates that the SafeWriteMode recovery thread will run every 20 minutes.                                | 20                |

## NT File System (NTFS) Protocol Server

For Windows NT/2000 platforms only.

The NT File System (NTFS) allows the Oracle Files repository to appear as a local hard drive on the server machine. When using NTFS, the Oracle Files repository will be mapped to a drive letter on the server machine and can be accessed using the file system as if it were a local hard drive.

The IFS.SERVER.Class that instantiates the NTFS server is:

```
oracle.ifs.protocols.ntfs.server.NtfsServer
```

**Table C-16 NTFS Server Properties**

| Property                                            | Description and Usage Note                                                                                                                                              | Default                       |
|-----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| <code>IFS.SERVER.PROTOCOL.NTFS.DriveLetter</code>   | The drive letter used to map the Oracle Files drive.<br>An available and valid drive letter (a-z).                                                                      | o                             |
| <code>IFS.SERVER.PROTOCOL.NTFS.LogLevel</code>      | Specifies the type of information listed in the log file.<br>A number from 1 to 4. 1 is the minimum and 4 is the maximum information in the log file.                   | 1                             |
| <code>IFS.SERVER.PROTOCOL.NTFS.LogStackTrace</code> | Specifies if the Java stack trace is listed in the log file.<br>true = list Java stack trace.<br>false = do not list Java stack trace.                                  | false                         |
| <code>IFS.SERVER.PROTOCOL.NTFS.SessionCache</code>  | Specifies the number of user sessions the NTFS server will keep open.<br>This value should be set to the expected number of simultaneously opened files.                | 40                            |
| <code>IFS.SERVER.PROTOCOL.NTFS.ifsproxy</code>      | Specifies the location of the <code>ifsproxy.dll</code> library.<br>The path specified is relative to the Oracle Files home directory where Oracle Files was installed. | <code>lib/ifsproxy.dll</code> |

## Print Agent

The Print Agent makes printing through Oracle Files indistinguishable from printing to a normal Windows NT server.

The `IFS.SERVER.Class` that instantiates this agent is:

```
oracle.ifs.management.servers.print.PrintAgent
```

## Quota Agent

The Quota Agent is triggered by an event to compute the consumed quota for users or Workspaces. This agent also periodically checks all users who are active, according to a specified timer period. The agent updates the user's consumed storage. When the consumed storage is over the allocated quota, the user will not be able to add any more documents to Oracle Files.

A user's quota is calculated upon the content already consumed. Therefore, a user will go over quota by adding the final file that pushes the consumed storage over the allocated storage. When setting users' allocated quota, remember that a user's last file will put him or her over quota before being denied.

Quotas will not be enforced if:

- The Quota Agent has not been started or is not running.
- The user's quota has not been enabled.

The IFS.SERVER.Class that instantiates this agent is:

```
oracle.ifs.management.servers.QuotaAgent
```

## Service Warmup Agent

When a node is started, this agent automatically preloads the service's data cache. It expects the following entries in the Server Configuration file.

The IFS.SERVER.Class that instantiates this agent is:

```
oracle.ifs.management.servers.ServiceWarmupAgent
```

**Table C-17    Service Warmup Agent Properties**

| Property                                      | Description and Usage Note                    | Default |
|-----------------------------------------------|-----------------------------------------------|---------|
| IFS.SERVER.AGENT.SERVICEWARMUP.WarmupSetAdmin | If the warmup is done in administration mode. | true    |
| IFS.SERVER.AGENT.SERVICEWARMUP.WarmupUsers    | If set to true, warms up user collection.     | false   |
| IFS.SERVER.AGENT.SERVICEWARMUP.WarmupAcls     | If set to true, warms up ACL collection.      | false   |
| IFS.SERVER.AGENT.SERVICEWARMUP.WarmupFormats  | If set to true, warms up format collection.   | true    |
| IFS.SERVER.AGENT.SERVICEWARMUP.WarmupMedias   | If set to true, warms up Media collection.    | true    |



## Service Watchdog Agent

The Service Watchdog Agent cleans up after Oracle Files services that do not shut down cleanly.

The IFS.SERVER.Class that instantiates this agent is:

```
oracle.ifs.management.servers.ServiceWatchdogAgent
```

**Table C–18 Service Watchdog Agent Properties**

| Property                                                       | Description and Usage Note                                                                                                                                     | Default |
|----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| IFS.SERVER.AGENT.SERVICEWATCHDOG<br>AGENT.ServiceTimeoutPeriod | The number of seconds after which a service is considered inactive. When a service becomes inactive, it is eligible for cleanup by the Service Watchdog Agent. | 120     |

## Server Message Block (SMB) Protocol Server

The SMB server allows Windows users to easily copy files between their local drives and the Oracle Files repository. It also allows users to browse and edit files and even execute programs directly from the Oracle Files repository. SMB is best suited for interactive browsing and modifying documents.

You should configure the NbServer for use with SMB; see "[NbServer \[NetBIOS\]](#)" on page C-14 for more information.

The IFS.SERVER.Class that instantiates this server is:

```
oracle.ifs.protocols.smb.server.SmbServer
```

**Table C–19 SMB Server Properties**

| Property                                   | Description and Usage Note                                                                                                                                        | Default                     |
|--------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| IFS.SERVER.PROTOCOL.SMB.<br>ServerComment  | Holds the SMB server description that shows up in the Windows Properties window.                                                                                  | Oracle Internet File Server |
| IFS.SERVER.PROTOCOL.SMB.<br>PrimeServer    | Primes the server with a simple login.                                                                                                                            | true                        |
| IFS.SERVER.PROTOCOL.SMB.<br>EnablePrinting | If set to true, allows users to print through the SMB Server to configured printers. You cannot use Oracle Files printing services without this property enabled. | true                        |

**Table C–19 (Cont.) SMB Server Properties**

| Property                                        | Description and Usage Note                                                                                                                                                                                                                     | Default                                                              |
|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| IFS.SERVER.PROTOCOL.SMB.<br>EnableOplocks       | If this parameter is true, it lets client cache their reads and writes and results in improved performance.<br><br>If set to true, this may cause problems with consistency across all the protocols; however, true yields better performance. | true                                                                 |
| IFS.SERVER.PROTOCOL.SMB.<br>MaxOplocks          | Maximum number of op locks per mount point.<br>See Microsoft documentation for information about OpLocks.                                                                                                                                      | 8                                                                    |
| IFS.SERVER.PROTOCOL.SMB.<br>KeepStats           | If true, keeps statistics on various server operations.                                                                                                                                                                                        | true                                                                 |
| IFS.SERVER.PROTOCOL.SMB.<br>PrintStats          | If true, prints statistics on SMB commands into the log file after the user disconnects.                                                                                                                                                       | Defaults to true if the log level for the node is medium or greater. |
| IFS.SERVER.PROTOCOL.SMB.<br>ShareMyHome         | Specifies if the virtual MyHome mount point is shared as a mount point.<br><br>true = include MyHome in the list of mount points<br>false = do not include MyHome in the list of mount points                                                  | true                                                                 |
| IFS.SERVERPROTOCOL.SMB.<br>Workgroup            | Windows workgroup.<br>This determines the workgroup where the SMB server will appear in the Network Neighborhood.                                                                                                                              | WORKGROUP                                                            |
| IFS.SERVER.PROTOCOL.SMB.<br>Port                | Port for the SMB server to listen on.<br>All Windows clients require the SMB server to listen on the default port, 139. Only processes with root privileges can listen on low-numbered ports, so the SMB server must be run as root.           | 139                                                                  |
| IFS.SERVER.PROTOCOL.SMB.<br>AllowGuestIfNotUser | Allows users who do not have valid accounts on this server to browse as a guest.<br><br>true = allows non-guest users as guest.<br>false = forces a valid username.                                                                            | true                                                                 |
| IFS.SERVER.PROTOCOL.SMB.<br>MaxOpenFiles        | The maximum number of files a user can have open on a single mountpoint.                                                                                                                                                                       | 30                                                                   |
| IFS.SERVER.PROTOCOL.SMB.<br>MaxAllOpenFiles     | The total number of open files the SMB server allows across all users.<br><br>The total is also limited by the number of connections configured for the SMB server and database.                                                               | 100                                                                  |

**Table C–19 (Cont.) SMB Server Properties**

| Property                               | Description and Usage Note                                                                                                                                                                                     | Default                                       |
|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| IFS.SERVER.PROTOCOL.SMB.SessionTimeout | The server will disconnect idle sessions after this timeout.<br>Unit of measure is in milliseconds.                                                                                                            | 43200000 (12 hours)                           |
| IFS.SERVER.PROTOCOL.SMB.IpAddress      | The IP address that is advertised as the location for the SMB server.<br><br>This value is defaulted from the server IP address and should not be modified except in unusual cases, for example, multi-server. | server IP address                             |
| IFS.SERVER.PROTOCOL.SMB.HostName       | Name of the SMB server.                                                                                                                                                                                        | The machine name where the server is running. |
| IFS.SERVER.PROTOCOL.SMB.ForceLowerCase | Forces lowercase filenames.                                                                                                                                                                                    | false                                         |



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# Migrating Data to Oracle Files

This appendix tells you how to migrate content and users from legacy systems to Oracle Files. Topics include:

- [Migrating Data from Other File Servers](#)

## Migrating Data from Other File Servers

Oracle Files does not currently offer a migration toolkit. You must migrate your files manually. The following sections provide suggestions on how to accomplish this task.

### Server Consolidation Checklist

Consolidating users, folder hierarchy, content, and access privileges from other file server systems to Oracle Files involves the following steps:

- [Migrating Users](#). You need to move the user list from the old system to the new one. In other words, you need to recreate each user in Oracle Files (by creating users in Oracle Internet Directory).
- [Creating Workspaces](#). If your old file system has user groups, you can create corresponding Workspaces in Oracle Files with the same membership.
- [Migrating Content](#). You must copy the actual files and folders from the old system to the new one.

### Migrating Users

The first task in moving to a new Oracle Files server is creating the user list. For each user you want to migrate to Oracle Files, you must create a new user in Oracle

Internet Directory. For detailed information on this process, see the *Oracle Internet Directory Administrator's Guide*.

## Creating Workspaces

In order to migrate user groups from your old file system, you must create corresponding Workspaces in Oracle Files, then add the appropriate users to them.

### Scripted Workspace Creation

If your management tools let you export group information to a file, you can write a translation script to convert the groups into XML format. Then, you can use the Workspace Creation tool to create corresponding workspaces in Oracle Files.

See "[Bulk Administration Tools for Oracle Files](#)" on page 4-4 for more information about the Workspace Creation tool.

## Migrating Content

After creating users and Workspaces, the next step is to move files and folders into Oracle Files.

Some information cannot be retained:

- **Last Modified Date.** The date and time you copy the file into Oracle Files will be the Last Modified Date.
- **Creator/Owner.** The administrator performing the migration will be listed as the file's creator.
- **Application-Specific Metadata.** If your old file system had application-specific metadata, this information cannot be automatically copied across.

### Protocols for Copying Data

Use one of the following network protocols to copy your files:

- **FTP:** The most lightweight protocol, FTP will move large amounts of data faster than the other protocols. For bulk operations, such as migrating from an existing system, FTP is the protocol of choice. You need to use either command line FTP or a GUI FTP client for this step. See [Appendix E, "FTP Quote Command Reference"](#) for more information about the FTP Quote commands.

To FTP your files into Oracle Files, the following requirements must be met:

- An FTP client must be installed on your local machine.

- You must know the correct port number for FTP, which was specified during Oracle Files configuration. Use Oracle Enterprise Manager to check the `IFS.SERVER.PROTOCOL.FTP.Port` property if you are unsure.
- An account on the Oracle Files server must be already set up.

To FTP your files into Oracle Files:

1. Using an FTP client, log into the Oracle Files server. You can use either the hostname of the Oracle Files server or its IP address.
2. Navigate to the files on your local machine that you want to load into Oracle Files and use your FTP client's utilities to load the files.

---

**Note:** FTP requires an Oracle Files-specific password in order to be used. You can set this password in the User Preferences page in Oracle Files; see the Oracle Files online help for more information.

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- **WebDAV (Web Folders):** WebDAV, a protocol designed for Internet and intranet collaboration on files, allows you to drag and drop data from one system to another.

In Windows:

1. Connect to a Web Folder.
2. Select the files from your local directory.
3. Drag and drop the files into a folder on the Oracle Files drive.

If you want to retain the file structure, click and drag the entire directory structure from the original file system into Oracle Files, or drag different parts of the directory tree separately, confirming that each part of the tree has been copied before copying the next one.

4. Log into Oracle Files through Windows as a test user and verify that all the files and folders are accessible.

---

**Note:** In order to enable WebDAV access, go to the Protocol Access page in Oracle Files and enter your SSO password. See the Oracle Files online help for more information.

---

- **SMB:** The Windows file-sharing protocol SMB provides the ease of drag-and-drop copy operations from one system to another. SMB, however, is a

more complex protocol than FTP and requires some sacrifice of performance for ease of use. You can only use SMB when Oracle Files is running on UNIX.

---

**Note:** In order to enable SMB access, go to the Protocol Access page in Oracle Files and enter your SSO password. See the Oracle Files online help for more information.

---

- **NFS:** The Network File System (NFS) protocol is used to provide file sharing between a client machine and a server machine across a network. The NFS protocol is a standard protocol which is widely used for file sharing on UNIX platforms.



---

# FTP Quote Command Reference

This appendix provides information on using the FTP quote commands.

Topics include:

- [CASCADEOFF](#)
- [CASCADEON](#)
- [DELIM](#)
- [SETLANGUAGE](#)
- [SETCHARENCODING](#)
- [SHOWCHARENCODING](#)
- [SHOWLANGUAGE](#)

## CASCADEOFF

When deleting a folder ("rmdir"), turns off cascade delete for the session. Only empty folders will be deleted by the rmdir command. If folders under the directory are not empty, the rmdir will not succeed.

| Syntax                        | Example                       |
|-------------------------------|-------------------------------|
| <code>quote cascadeoff</code> | <code>quote cascadeoff</code> |

## CASCADEON

When deleting a folder ("rmdir"), turns on cascade delete for the session so that the folder and all its contents, including any non-empty folders, are deleted. The example shows that any folder and its contents will be deleted.

| Syntax          | Example         |
|-----------------|-----------------|
| quote cascadeon | quote cascadeon |

DELIM

Sets the folder path delimiter for the current session. The example sets the character "\" to delimit folder paths.

| Syntax                  | Example       |
|-------------------------|---------------|
| quote delim [character] | quote delim \ |

SETLANGUAGE

Sets the language for the session when loading documents. Should be used when loading documents that are different than the default system language. The language setting is important for content-based indexing, used for content searches. For more information on language setting, see the *Oracle9i Database Globalization Support Guide*.

| Syntax                       | Example                                                                |
|------------------------------|------------------------------------------------------------------------|
| quote setlanguage [language] | quote setlanguage French<br>quote setlanguage "Latin American Spanish" |

The list of valid languages is given in the following table. For languages that are longer than one word, the language needs to be enclosed in quotes as shown in the preceding example.

|                      |          |                        |                    |
|----------------------|----------|------------------------|--------------------|
| American             | Egyptian | Japanese               | Russian            |
| Arabic               | English  | Korean                 | Simplified Chinese |
| Bengali              | Estonian | Latin American Spanish | Slovak             |
| Brazilian Portuguese | Finnish  | Latvian                | Slovenian          |
| Bulgarian            | French   | Lithuanian             | Spanish            |
| Canadian French      | German   | Malay                  | Swedish            |
| Catalan              | Greek    | Mexican Spanish        | Thai               |

|          |            |            |                     |
|----------|------------|------------|---------------------|
| Croatian | Hebrew     | Norwegian  | Traditional Chinese |
| Czech    | Hungarian  | Polish     | Turkish             |
| Danish   | Indonesian | Portuguese | Ukrainian           |
| Dutch    | Italian    | Romanian   | Vietnamese          |

SETCHARENCODING

Sets the character encoding to an IANA character set name for the session when loading documents. Should be used when loading documents that are different than the default system character encoding setting. The character encoding setting is important for content-based indexing, used for content searches. For more information on character encodings, see the *Oracle9i Database Globalization Support Guide*.

| Syntax                                     | Example                     |
|--------------------------------------------|-----------------------------|
| quote setcharencoding [character encoding] | quote setcharencoding UTF-8 |

Valid character encodings include:

|             |             |                |              |
|-------------|-------------|----------------|--------------|
| BIG5        | ISO-2022-KR | KOI8-R         | WINDOWS-1252 |
| EUC-JP      | ISO-8859-1  | KS_C_5601-1987 | WINDOWS-1253 |
| EUC-TW      | ISO-8859-2  | SHIFT_JIS      | WINDOWS-1254 |
| GB2312      | ISO-8859-3  | TIS-620        | WINDOWS-1255 |
| IBM850      | ISO-8859-4  | UTF-8          | WINDOWS-1256 |
| IBM852      | ISO-8859-5  | WINDOWS-936    | WINDOWS-1257 |
| IBM857      | ISO-8859-6  | WINDOWS-949    | WINDOWS-1258 |
| IBM866      | ISO-8859-7  | WINDOWS-950    |              |
| ISO-2022-CN | ISO-8859-8  | WINDOWS-1250   |              |
| ISO-2022-JP | ISO-8859-9  | WINDOWS-1251   |              |

SHOWCHARENCODING

Displays the current character encoding setting for the session.

| Syntax                 | Example                |
|------------------------|------------------------|
| quote showcharencoding | quote showcharencoding |

## SHOWLANGUAGE

Displays the current language setting for the session.

| Syntax             | Example            |
|--------------------|--------------------|
| quote showlanguage | quote showlanguage |

---

# Globalization Support

This appendix provides information about Oracle Files globalization support. Topics include:

- [Globalization Support Overview](#)
- [The Repository](#)
- [Oracle Files Protocols](#)
- [Character Sets Supported in Oracle Files](#)
- [Languages Supported In Oracle Files](#)

## Globalization Support Overview

Oracle Files globalization support enables users to store and search documents of heterogeneous character sets and languages in a single Oracle Files instance. The globalization infrastructure ensures that the resource strings, error messages, sort order, date, time, numeric, and calendar conventions automatically adapt to any native language and locale.

## The Repository

The repository is the implementation of the core of Oracle Files, on which the protocol servers and applications are built. Globalization support is provided in the repository so that the other dependent components can share and utilize this support. The major globalization goal for the repository is to ensure efficient storage of documents of heterogeneous character sets and languages, and to allow effective update, retrieval, and search on these documents.

## How to Choose the Database Character Set for Oracle Files

In the repository, all metadata strings, such as the name of the document, description, etc., are stored in the VARCHAR2 data type of the Oracle9i database. Strings stored in this data type are encoded in the database character set specified when a database is created. The document itself, however, is unstructured data and stored in one of the large object data types of the Oracle9i database, particularly the BLOB data type. The BLOB data type stores content as-is, avoiding any character set conversion on document content. The LONG and CLOB data types store content in the database character set, which requires character set conversion. Conversions can compromise the data integrity and have the potential to convert incorrectly or lose characters.

The full-text search index built on the document content is encoded in the database character set. When a document's content is indexed, the BLOB data is converted from the content's character set to the database character set for creation of the index text tokens. If the content's character set is not a subset of the database character set, the conversion will yield garbage tokens. For example, a database character set of ISO-8859-1 (Western European languages) will not be able to index correctly a Shift-JIS (Japanese) document. To be able to search content effectively, the character set of the documents stored by the users should be considered when selecting the database character set.

If your Oracle Files instance will contain multilingual documents, UTF-8 is the recommended database character set. UTF-8 supports characters defined in the Unicode standard. The Unicode standard solves the problem of many different languages in the same application or database. Unicode is a single, global character set which contains all major living scripts and conforms to international standards. Unicode provides a unique code value for every character, regardless of the platform, program, or language. UTF-8 is the 8-bit encoding of Unicode. It is a variable-width encoding and a strict superset of ASCII. One Unicode character can be 1 byte, 2 bytes, 3 bytes, or 4 bytes in UTF-8 encoding. Characters from the European scripts are represented in either 1 or 2 bytes. Characters from most Asian scripts are represented in 3 bytes. Supplementary characters are represented in 4 bytes. By using a Unicode-based file system, document content and metadata of different languages can be shared by users with different language preferences in one system.

The Oracle9i database introduces the new character set, AL32UTF-8. In Release 1, AL32UTF-8 was the default character set for Unicode 3.0 deployment. In Release 2, AL32UTF-8 is compliant to the latest Unicode 3.1 standard, which contains the supplementary characters, particularly additional Chinese, Japanese, and Korean

ideographs. AL32UTF-8 is the default character set of an Oracle9i database installation.

---

**Note:** Oracle Files does not support an AL32UTF-8 database because Oracle Text does not support Chinese, Japanese, and Korean lexers on an AL32UTF-8 database. UTF-8 is the recommended database character set for an Unicode-based file system. If Oracle Files is installed in an AL32UTF-8 database, Chinese, Japanese, and Korean documents will not get indexed and, thus, will not be searchable.

The Oracle Files Configuration Assistant will fail in a Chinese, Japanese, or Korean locale against an AL32UTF-8 database. This is because Oracle Text behaves differently when the database session language is initialized to an Asian language as opposed to American. JDBC initializes the database session language according to the locale of the running application, which in this case is the configuration tool.

---

## How to Make Sure Documents Are Properly Indexed in Oracle Files

To support documents in different character sets and languages in a single file system, the repository associates two globalization attributes per document. They are the character set and language attributes.

### Character Set

The character set of a document is used in several situations. When the document content is rendered to a file, the character set of the document is used as the character encoding of the file. When the document is displayed in the browser, the character set of the document is set in the HTTP content-type header. Finally, when a full-text search is built on a text document, Oracle Text uses the character set of the document to convert the data into the database character set before building the index. When a character set is updated, the content is reindexed.

If no character set is specified upon insertion of a document, the repository determines a default character set as follows: the character set of the user's LibrarySession stored in the Localizer object is first used. This is obtained from the user's PrimaryUserProfile information at initialization of the user's LibrarySession.

Language

The language of a document is used in mainly two ways. First, as a criterion to limit the search for documents of a particular language. The more significant usage, however, is for building a full-text search index on the document with Oracle Text. Oracle Text’s multilexer feature uses the language to identify the specific lexer to parse the document for searchable words. The language-specific lexers need to be defined and associated with a language before the index is built. They are defined as follows:

Table F–1    *Language-Specific Lexers*

| Language             | Lexer                | Lexer Option                                           |
|----------------------|----------------------|--------------------------------------------------------|
| Brazilian Portuguese | BASIC_LEXER          | BASE LETTER                                            |
| Canadian French      | BASIC_LEXER          | BASE LETTER<br>INDEX THEME                             |
| Danish               | BASIC_LEXER          | BASE LETTER<br>DANISH ALTERNATE SPELLING               |
| Dutch                | BASIC_LEXER          | BASE LETTER                                            |
| Finnish              | BASIC_LEXER          | BASE LETTER                                            |
| French               | BASIC_LEXER          | BASE LETTER<br>INDEX THEME<br>THEME<br>LANGUAGE=FRENCH |
| German               | BASIC_LEXER          | BASE LETTER<br>GERMAN ALTERNATE SPELLING               |
| Italian              | BASIC_LEXER          | BASE LETTER                                            |
| Japanese             | JAPANESE_VGRAM_LEXER |                                                        |
| Korean               | KOREAN_LEXER         |                                                        |
| Latin American       | BASIC_LEXER          | BASE LETTER                                            |
| Spanish Portuguese   | BASIC_LEXER          | BASE LETTER                                            |
| Simplified Chinese   | CHINES_VGRAM_LEXER   |                                                        |



**Table F–1 (Cont.) Language-Specific Lexers**

| Language          | Lexer               | Lexer Option                                        |
|-------------------|---------------------|-----------------------------------------------------|
| Swedish           | BASIC_LEXER         | BASE LETTER<br>SWEDISH ALTERNATE SPELLING           |
| Tradition Chinese | CHINESE_VGRAM_LEXER |                                                     |
| Others            | BASIC_LEXER         | INDEX THEME<br>THEME LANGUAGE=ENGLISH<br>INDEX TEXT |

The BASIC\_LEXER is used for single-byte languages using white space as a word separator. Asian language lexers cannot use white space as word separator. Instead, they use a V-gram algorithm to parse the documents for searchable keys. Languages that have not been supported by Oracle Text are parsed as English. Oracle Files uses the multilexer feature of Oracle Text. It is a global lexer containing German, Danish, Swedish, Japanese, Simplified Chinese, Traditional Chinese, and Korean sublexers.

If no language is specified upon insertion of a document, the repository determines a default language as follows.

1. If the character set has been set, the language can most likely be obtained from a 'best-guess' algorithm based on the character set value. For example, a document with a character set of Shift-JIS will most likely be in Japanese.
2. The default language is obtained from the Localizer of the user's LibrarySession. During initialization of the LibrarySession, the default language is obtained from the user's PrimaryUserProfile.
3. The defaults for both language and character set is specified by the Subscriber Administrator when a new user is created.

The naming convention for language is simply one flavor, the Oracle NLS language abbreviation. See [Table F–3, "Languages Supported in Oracle Files"](#) for a list of Oracle Files-supported languages.

### Service Configuration Properties

There are two service configuration properties that hold default character set and language values for Oracle Files Subscribers. The properties are:

- `IFS.SERVICE.DefaultCharacterSet`
- `IFS.SERVICE.DefaultLanguage`

These two properties are initialized with the Oracle Files Configuration assistant tool and can be later modified through Oracle Enterprise Manager. The Oracle Files default character set should be the same or a subset of the database character set. The character set should be specified in accordance with the IANA standard naming convention. The language should be specified in accordance with Oracle naming for languages. See [Table F-2, "Character Sets Supported in Oracle Files"](#) and [Table F-3, "Languages Supported in Oracle Files"](#) for a list of Oracle Files-supported character sets and languages.

## Oracle Files Protocols

Oracle Files does not support multibyte user names for certain protocols. Access through WebDAV (Web Folders and Oracle FileSync), HTTP, and SMB is not available for user names that contain multibyte characters. FTP allows multibyte user names.

### FTP

The standard FTP protocol does not define the character set of the file names or directory names that are usually passed as arguments of FTP commands. The FTP server is responsible for interpreting the byte sequence of the FTP commands. To allow users to access documents of different character sets and languages, the Oracle Files FTP server provides the following QUOTE commands to support this.

- **Ftp> quote setcharencoding:** Setcharencoding allows users to specify the character set for the FTP session. This character set specifies the character encoding to be used in subsequent FTP commands and the character set of the documents to be uploaded. The FTP protocol server converts FTP commands from this character encoding to Java String and vice versa. When the FTP session is first created, the FTP server uses the default character set of the session. The IANA naming standards should be used to specify the character set. See [Table F-2, "Character Sets Supported in Oracle Files"](#) for a list of character sets.
- **Ftp> quote showcharencoding:** Showcharencoding displays the current character set of the FTP session. The character set is displayed in the IANA naming standards. See [Table F-2, "Character Sets Supported in Oracle Files"](#) for a list of character sets.

- **Ftp> quote setlanguage:** Setlanguage allows users to specify the language for the FTP session. The language of a FTP session is then associated with the documents that are uploaded. Oracle Text uses the language information to determine the appropriate lexer to use to index the document. When the FTP session is first created, the FTP server uses the default language of the session. Oracle language names should be used. See [Table F-3, "Languages Supported in Oracle Files"](#) for a list of languages.
- **Ftp> quote showlanguage:** Showlanguage displays the current language of the FTP session. The language is displayed with the Oracle naming standard. See [Table F-3, "Languages Supported in Oracle Files"](#) for a list of languages.

When a quote command is issued to change the character set or language of the FTP session, the FTP server actually updates the settings in the Localizer object of the current LibrarySession. Subsequently, since quote commands cannot be issued until a FTP session is established, only usernames in the character set or subset of the FTP server's default character set can be used to log in to the FTP server.

Users can specify the character sets and languages of their environments using standard command-line FTP clients. Browser-based FTP clients, such as Internet Explorer or Netscape, do not allow issuance of quote commands. FtpSession defaults will be used.

## SMB

The Server Message Block (SMB) protocol server implements the SMB protocol to allow mounting of Oracle Files as a disk drive in Microsoft Windows Explorer. Microsoft has included Unicode support for the SMB protocol since LanManager Version 0.12.

The SMB protocol does not allow users to pass the character set and language information to the server. The session defaults will be used for documents inserted into the repository via the SMB protocols.

## Character Sets Supported in Oracle Files

The following table summarizes the character sets supported in Oracle Files.

**Table F–2 Character Sets Supported in Oracle Files**

| <b>Language</b>              | <b>IANA Preferred MIME Charset</b>                                   | <b>IANA Additional Aliases</b>                                                        | <b>Java Encodings</b> | <b>Oracle Charset</b> |
|------------------------------|----------------------------------------------------------------------|---------------------------------------------------------------------------------------|-----------------------|-----------------------|
| Arabic (ISO)                 | iso-8859-6                                                           | ISO_8859-6:1987, iso-ir-127, ISO_8859-6, ECMA-114, ASMO-708, arabic, csISOLatinArabic | ISO8859_6             | AR8ISO8859P6          |
| Arabic (Windows)             | windows-1256                                                         |                                                                                       | Cp1256                | AR8MSWIN1256          |
| Baltic (ISO)                 | iso-8859-4                                                           | csISOLatin4, iso-ir-110, ISO_8859-4, ISO_8859-4:1988, l4, latin4                      | ISO8859_4             | NEE8ISO8859P4         |
| Baltic (Windows)             | windows-1257                                                         |                                                                                       | Cp1257                | BLT8MSWIN1257         |
| Central European (DOS)       | ibm852                                                               | cp852, 852, csPcp852                                                                  | Cp852                 | EE8PC852              |
| Central European (ISO)       | iso-8859-2                                                           | csISOLatin2, iso-ir-101, iso8859-2, iso_8859-2, iso_8859-2:1987, l2, latin2           | ISO8859_2             | EE8ISO8859P2          |
| Central European (Windows)   | windows-1250                                                         | x-cp1250                                                                              | Cp1250                | EE8MSWIN1250          |
| Chinese Simplified (GB2312)  | gb2312                                                               | chinese, csGB2312, csISO58GB231280, GB2312, GB_2312-80, iso-ir-58                     | EUC_CN                | ZHS16CGB231280        |
| Chinese Simplified (Windows) | GBK                                                                  | windows-936                                                                           | GBK                   | ZHS16GBK              |
| Chinese Traditional          | big5                                                                 | csbig5, x-x-big5                                                                      | Big5                  | ZHT16BIG5             |
| Chinese Traditional          | windows-950                                                          |                                                                                       | MS950                 | ZHT16MSWIN950         |
| Chinese                      | iso-2022-cn<br>It is not defined in IANA, but use in MIME documents. | csISO2022CN                                                                           | ISO2022CN             | ISO2022-CN            |

**Table F–2 (Cont.) Character Sets Supported in Oracle Files**

| <b>Language</b>              | <b>IANA Preferred MIME Charset</b> | <b>IANA Additional Aliases</b>                                                                               | <b>Java Encodings</b> | <b>Oracle Charset</b> |
|------------------------------|------------------------------------|--------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|
| Chinese Traditional (EUC-TW) | EUC-TW                             |                                                                                                              | EUC_TW                | ZHT32EUC              |
| Cyrillic (DOS)               | ibm866                             | cp866, 866, csIBM866                                                                                         | Cp866                 | RU8PC866              |
| Cyrillic (ISO)               | iso-8859-5                         | csISOLatinCyrillic, cyrillic, iso-ir-144, ISO_8859-5, ISO_8859-5:1988                                        | ISO8859_5             | CL8ISO8859P5          |
| Cyrillic (KOI8-R)            | koi8-r                             | csKOI8R, koi                                                                                                 | KOI8_R                | CL8KOI8R              |
| Cyrillic Alphabet (Windows)  | windows-1251                       | x-cp1251                                                                                                     | Cp1251                | CL8MSWIN1251          |
| Greek (ISO)                  | iso-8859-7                         | csISOLatinGreek, ECMA-118, ELOT_928, greek, greek8, iso-ir-126, ISO_8859-7, ISO_8859-7:1987, csISOLatinGreek | ISO8859_7             | EL8ISO8859P7          |
| Greek (Windows)              | windows-1253                       |                                                                                                              | Cp1253                | EL8MSWIN1253          |
| Hebrew (ISO)                 | iso-8859-8                         | csISOLatinHebrew, hebrew, iso-ir-138, ISO_8859-8, visual, ISO-8859-8 Visual, ISO_8859-8:1988                 | ISO8859_8             | IW8ISO8859P8          |
| Hebrew (Windows)             | windows-1255                       |                                                                                                              | Cp1255                | IW8MSWIN1255          |
| Japanese (JIS)               | iso-2022-jp                        | csISO2022JP                                                                                                  | ISO2022JP             | ISO2022-JP            |
| Japanese (EUC)               | euc-jp                             | csEUCPkdFmtJapanese, Extended_UNIX_Code_Packed_Format_for_Japanese, x-euc, x-euc-jp                          | EUC_JP                | JA16EUC               |
| Japanese (Shift-JIS)         | shift_jis                          | csShiftJIS, csWindows31J, ms_Kanji, shift-jis, x-ms-cp932, x-sjis                                            | MS932                 | JA16SJIS              |
| Korean                       | ks_c_5601-1987                     | csKSC56011987, korean, ks_c_5601, euc-kr, csEUCKR                                                            | EUC_KR                | KO16KSC5601           |

Table F–2 (Cont.) Character Sets Supported in Oracle Files

| Language                   | IANA Preferred MIME Charset | IANA Additional Aliases                                                                    | Java Encodings | Oracle Charset |
|----------------------------|-----------------------------|--------------------------------------------------------------------------------------------|----------------|----------------|
| Korean (ISO)               | iso-2022-kr                 | csISO2022KR                                                                                | ISO2022KR      | ISO2022-KR     |
| Korean (Windows)           | windows-949                 |                                                                                            | MS949          | KO16MSWIN949   |
| South European (ISO)       | iso-8859-3                  | ISO_8859-3, ISO_8859-3:1988, iso-ir-109, latin3, l3, csISOLatin3                           | ISO8859_3      | SE8ISO8859P3   |
| Thai                       | TIS-620                     | windows-874                                                                                | TIS620         | TH8TISASCII    |
| Turkish (Windows)          | windows-1254                |                                                                                            | Cp1254         | TR8MSWIN1254   |
| Turkish (ISO)              | iso-8859-9                  | latin5, l5, csISOLatin5, ISO_8859-9, iso-ir-148, ISO_8859-9:1989                           | ISO8859_9      | WE8ISO8859P9   |
| Universal (UTF-8)          | utf-8                       | unicode-1-1-utf-8, unicode-2-0-utf-8, x-unicode-2-0-utf-8                                  | UTF8           | UTF8           |
| Vietnamese (Windows)       | windows-1258                |                                                                                            | Cp1258         | VN8MSWIN1258   |
| Western Alphabet (Windows) | windows-1252                | x-ansi                                                                                     | Cp1252         | WE8MSWIN1252   |
| Western Alphabet           | iso-8859-1                  | cp819, ibm819, iso-ir-100, iso8859-1, iso_8859-1, iso_8859-1:1987, latin1, l1, csISOLatin1 | ISO8859_1      | WE8ISO8859P1   |
| Western Alphabet (DOS)     | ibm850                      | cp850, 850, csIBM850                                                                       | Cp850          | WE38PC850      |

## Languages Supported In Oracle Files

The following table summarizes the languages supported in Oracle Files.

Table F–3 Languages Supported in Oracle Files

| Oracle Language Name | Java Locale | ISO Locale |
|----------------------|-------------|------------|
| Arabic               | ar          | ar         |
| Bengali              | bn          | bn         |

**Table F–3 (Cont.) Languages Supported in Oracle Files**

| Oracle Language Name   | Java Locale | ISO Locale |
|------------------------|-------------|------------|
| Brazilian Portuguese   | pt_BR       | pt-br      |
| Bulgarian              | bg          | bg         |
| Canadian French        | fr_CA       | fr-CA      |
| Catalan                | ca          | ca         |
| Croatian               | hr          | hr         |
| Czech                  | cs          | cs         |
| Danish                 | da          | da         |
| Dutch                  | nl          | nl         |
| Egyptian               | ar_EG       | ar-eg      |
| American               | en          | en         |
| English                | en_GB       | en-gb      |
| Estonian               | et          | et         |
| Finnish                | fi          | fi         |
| French                 | fr          | fr         |
| German                 | de          | de         |
| Greek                  | el          | el         |
| Hebrew                 | he          | he         |
| Hungarian              | hu          | hu         |
| Icelandic              | is          | is         |
| Indonesian             | id          | in         |
| Italian                | it          | it         |
| Japanese               | ja          | ja         |
| Korean                 | ko          | ko         |
| Latin American Spanish | es          | es         |
| Latvian                | lv          | lv         |
| Lithuanian             | lt          | lv         |
| Malay                  | ms          | ms         |

**Table F–3 (Cont.) Languages Supported in Oracle Files**

| <b>Oracle Language Name</b> | <b>Java Locale</b> | <b>ISO Locale</b> |
|-----------------------------|--------------------|-------------------|
| Mexican Spanish             | es_MX              | es-mx             |
| Norwegian                   | no                 | no                |
| Polish                      | pl                 | pl                |
| Portuguese                  | pt                 | pt                |
| Romanian                    | ro                 | ro                |
| Russian                     | ru                 | ru                |
| Simplified Chinese          | zh_CN              | zh-cn             |
| Slovak                      | sk                 | sk                |
| Slovenian                   | sl                 | sl                |
| Spanish                     | es_ES              | es-es             |
| Swedish                     | sv                 | sv                |
| Thai                        | th                 | th                |
| Traditional Chinese         | zh_TW              | zh-tw             |
| Turkish                     | tr                 | tr                |
| Ukrainian                   | uk                 | uk                |
| Vietnamese                  | vi                 | vi                |



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