SIEBEL 7
eBusiness

SIEBEL SERVER INSTALLATION GUIDE FOR UNIX

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Introduction

This guide provides information, instructions, and guidelines for installing your Siebel eBusiness Applications server components under UNIX.

This book will be useful primarily to people whose title or job description matches one of the following:

System Administrators	Persons responsible for the whole system, including installing, maintaining, and upgrading Siebel applications.
UNIX System Administrators	Persons with root-level access who are responsible for UNIX system administration.
Siebel Application Administrators	Persons responsible for planning, setting up, and maintaining Siebel applications.
Database Administrators	Persons who administer the database system, including data loading; system monitoring, backup, and recovery; space allocation and sizing; and user account management.

How This Guide Is Organized

This guide provides information that is necessary to install most Siebel eBusiness applications. Its organization provides a logical and sequential explanation of the steps necessary to install Siebel software.

Starting with Siebel eBusiness Applications, version 7.5, you can use the InstallShield and a Configuration GUI for installation and configuration of the Siebel UNIX application.

NOTE: Your Siebel implementation may not have all the features described in this guide, depending on which software modules you have purchased licenses for.

How This Guide Refers to Your Installation Directories

This guide uses the following variable naming conventions to refer to the installation directories either created by the installers or to which users navigate to access files and executables.

$SIEBEL_ROOT. Generally, this refers to the main directory in which software for each Siebel Server entity has been installed. The UNIX Enterprise Server component installers use `/siebel` as the default for $*SIEBEL_ROOT*.

$SIEBEL_HOME. This term refers to the installation or root directory for either Siebel eBusiness Applications software in general or the Siebel Server, depending on the context. Many scripts contain variables with this name; its meaning is most often derived from the context.

SIEBEL_SERVER_ROOT. This term is sometimes used within executables such as the `siebel_server` script as a synonym for $*SIEBEL_HOME.*

Revision History

Siebel Server Installation Guide for UNIX

Version 7.5.3

Table 1. Changes Made in Version 7.5.3

Topic	Revision
"Installing Siebel eBusiness Applications with IBM HACMP."	New for 7.5.3: information on IBM HACMP Clustering.
"DB2set Parameters" on page 205 and "Copying and Installing Stored Procedure Code on DB2" on page 236.	Revised for 7.5.3: information about DB2 v8.1 support.

Additional Changes

This guide was thoroughly revised for 7.5.3 to improve search capability, clarity, and quality.

April 2003 Bookshelf

Changes listed in Table 2 were made for the *Siebel Server Installation Guide for UNIX*, Version 7.5 Rev. D, released on the April 2003 bookshelf.

Table 2. Changes Made for April 2003 Bookshelf

Topic	Revision
Oracle specific information	Updated the following chapters with Oracle specific information: Chapter 6, "Installing the Siebel Server," Chapter 9, "Installing the Siebel Database Server for DB2 UDB," and Chapter 14, "Installing CORBA Object Manager."
Installing in console-mode and unattended-mode	New information under "Combining Console-Mode and Unattended-Mode Installation" on page 106.

Table 2. Changes Made for April 2003 Bookshelf

Topic	Revision
Creating `sse_role` on Solaris.	New information under "Creating Tableowner and Administrator Accounts for Database Server on DB2" on page 234 and "Creating Tableowner and Administrator Accounts for DB Server on Oracle" on page 286
VPD.PROPERTIES file	New information under "Reviewing the Software Installation for Siebel Server" on page 151.
Oracle 64-bit client	New information under "Configuring Database Connectivity" on page 131 and "To troubleshoot a failed ODBC connection on Solaris, AIX, or HP-UX" on page 160.
Multiple Siebel Enterprise Servers	New information under "Siebel Enterprise Server Overview" on page 28 and "Installation Tasks for the Siebel Server" on page 133.
DefaultChartFont	Added step 5 to the procedure titled "To configure ChartWorks Server" on page 372.
Installing in Console mode	Corrected the command line under step 4 in the following section: "To install in unattended mode" on page 101.

January 2003 Bookshelf

Changes listed in Table 3 were made for the *Siebel Server Installation Guide for UNIX*, Version 7.5 Rev. C, released on the January 2003 bookshelf.

Table 3. Changes Made for January 2003 Bookshelf

Topic	Revision
Unattended and console mode installation	Moved from Appendix E, Alternative Installations to Chapter 4, "Installing in Unattended or Console Modes."
Creating a staging point	Moved from Appendix E, Alternative Installations to Chapter 2, "Preparing for the Installation."
Central Dispatch	Added Troubleshooting section to Implementing Load-Balancing in Chapter 3, "Implementing Load-Balancing with Central Dispatch."
Supported database code pages	Section removed from this guide. This information will now be maintained in the *System Requirements and Supported Platforms* document.
SWSE statistics page	Information removed from Appendix D, Structure of the eapps.cfg File. The SWSE statistics page is now documented in detail in the *Siebel Server Administration Guide*.

November 2002 Bookshelf

The changes made for the *Siebel Server Installation Guide for UNIX*, Version 7.5, Rev. B, released on the November 2002 bookshelf included a number of quality improvements.

NOTE: *Siebel Server Installation Guide for UNIX*, Version 7.5, Rev. A included installation information specifically for HP-UX platform users.

Siebel Server Installation Overview 1

This overview provides information for installing your Siebel Enterprise Server components.

A successful installation requires:

- Familiarity with the basic conventions of the supported UNIX operating system, under which your Siebel Servers will run.
- Expertise in network connectivity, disk and file sharing, and software installation on your chosen server and client operating systems.
- User accounts with administration privileges appropriate for access under UNIX to perform installations.
- Expertise in database installation, tuning, and administration in your chosen relational database management system (RDBMS).

The guide also explains how to install Siebel eBusiness Applications on several databases, operating systems, and server platforms. However, specific database and operating system platforms, as well as certain combinations of them, may not be supported by the current release. For a list of all operating system platforms and RDBMS products supported by this release, consult *System Requirements and Supported Platforms*.

The Siebel Environment

The Siebel eBusiness Applications environment consists of three entities, listed in Table 4.

Table 4. Siebel Application Entities

Entity	Description
Siebel clients	Includes Siebel Web Client, Dedicated Web Client, Wireless Client, Mobile Web Client, Handheld Client, and Siebel Tools Client.
Siebel Database Server and Siebel File System	Stores the data and physical files used by Siebel clients and Siebel Enterprise Server.
Siebel Enterprise Server	Includes the Siebel Servers, Siebel Gateway Name Server and Connection Broker. Collectively, these entities provide both batch mode and interactive services to and on behalf of Siebel clients.

The Siebel Enterprise Server environment represents the middle tier within the three-tiered Siebel eBusiness Applications environment.

NOTE: This chapter discusses only the Siebel Enterprise Server architecture and entities. For a complete discussion of the Siebel Web clients, see *Siebel Web Client Administration Guide*.

Figure 1 on page 23 and Figure 2 on page 24 each contains a logical diagram of all the entities that make up the Siebel eBusiness Applications environment.

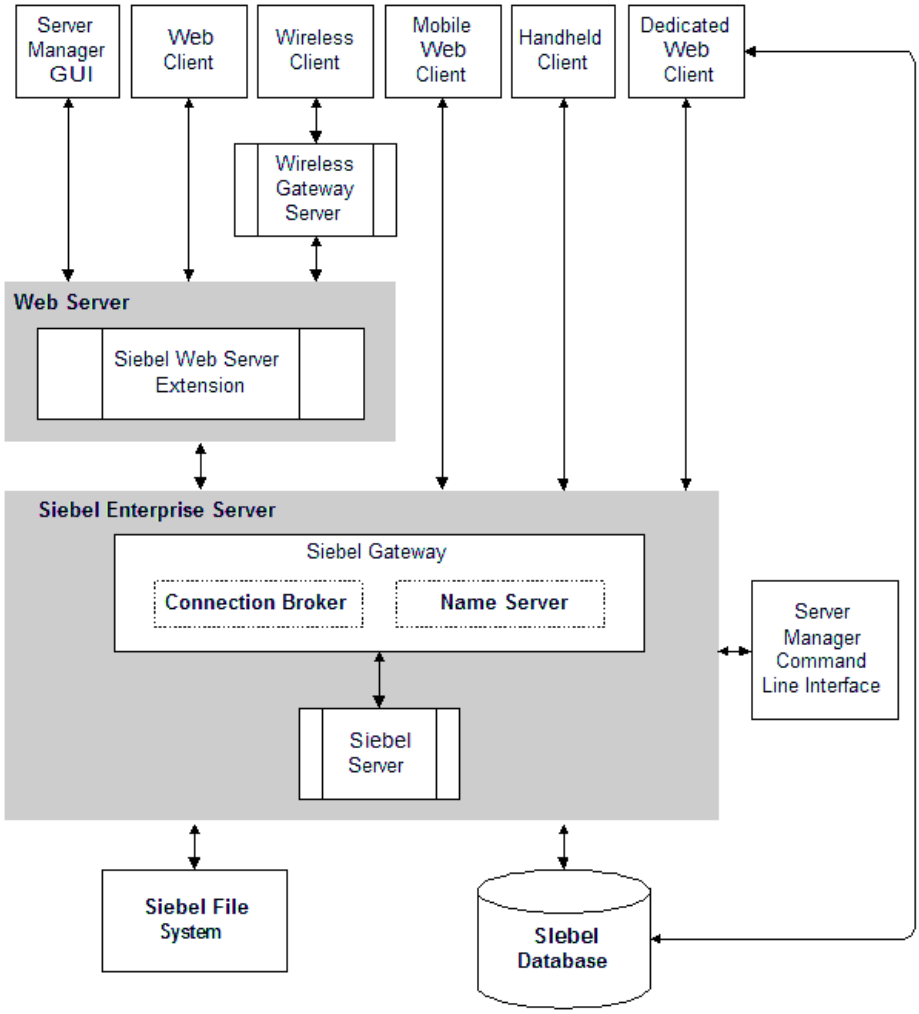

Figure 1. Logical Diagram of a Siebel 7 Environment in a Small Deployment (One Siebel Servers and One Web Server)

In a large deployment on multiple Siebel Servers, you can place the Name Server as shown in Figure 2.

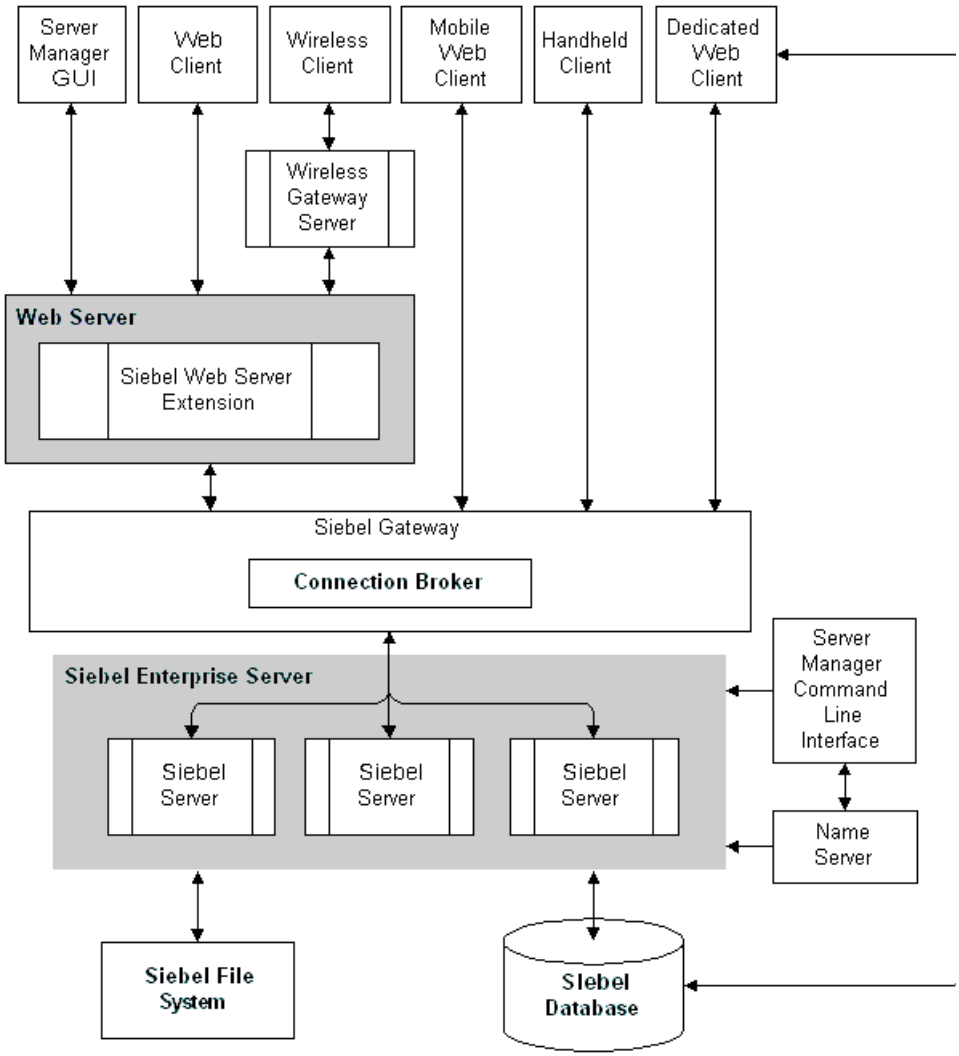

Figure 2. Logical Diagram of a Siebel 7 Environment in a Larger Deployment (Multiple Siebel Servers)

High Availability Overview

Siebel eBusiness Applications support load balancing and a number of server clustering technologies that are platform-specific to achieve high availability for all Siebel Servers. For information on clustering, see Chapter 7, "Clustering Your Siebel Deployment for Failover." For late-breaking information on Siebel Systems support for server clustering, see *System Requirements and Supported Platforms* and SupportWeb.

Siebel Gateway Overview

With Siebel 7, significant changes took place in the role of the Siebel Gateway in Siebel deployments that you must understand in deciding how to deploy your servers (Figure 1 on page 23 and Figure 2 on page 24).

The Siebel Gateway is not *a physical server,* it is a *logical entity* consisting of a Name Server and, optionally, Connection Broker. In Siebel 7, the Name Server and Connection Broker are now separate software components that can reside on different servers.

The Name Server is the primary service associated with the Siebel Gateway. It can be deployed as a standalone server, or as part of multiple servers, based on your requirements in terms of high availability and your budget constraints.

Also, a single Siebel Gateway can now support multiple Siebel Enterprise Servers.

Name Server Overview

The Name Server provides the persistent storage of Siebel Server configuration information, including:

- Definitions and assignments of component groups and components
- Operational parameters
- Connectivity information

As this information changes—such as during the installation or configuration of a Siebel Server—it is written to the Name Server.

The Name Server serves as the dynamic registry for Siebel Server and component availability information. At startup, a Siebel Server within the Siebel Enterprise Server notifies the Name Server of its availability and stores its connectivity information—such as network addresses—in the Name Server's non-persistent (volatile) store.

Enterprise components (including the Server Manager) query the Name Server for Siebel Server availability and connectivity information. When a Siebel Server shuts down, this information is cleared from the Name Server. However, users can connect directly to the database without the Name Server being up and running.

In a UNIX environment, the Name Server runs as a daemon process. The user installing the Name Server needs permissions to create such processes.

Impact of Failure of Name Server

If connection brokering is being used, when the Name Server becomes unavailable, active user connections continue to function. All server components and object managers currently running continue to do so and new connections (login sessions) can still be initiated. However, no new Siebel Server components can be started or added and server administration functions become limited. Without connection brokering, if the Name Server fails, all users, server components, and object managers lose connection. Name Server failure also prevents communication with the Actuate Report Server, and Report functionalities will be unavailable.

Resource Requirements for Name Server

The Name Server requires very few system resources. Follow the hardware recommendations listed in *System Requirements and Supported Platforms*.

Connection Brokering/Central Dispatch Scheduler Overview

Connection Broker directs client connection requests to the least-laden Siebel Server operating the desired component, which provides greater scalability and higher availability. Connection broker has its own service and uses the Central Dispatch product to distribute Web server connection requests across multiple Siebel Servers. For important information about connection brokering, see Chapter 3, "Implementing Load-Balancing with Central Dispatch."

NOTE: Mobile Web client connections are not distributed by Central Dispatch.

Impact of Failure of Central Dispatch Scheduler

If the Central Dispatch Scheduler fails, there is no impact. Existing sessions are maintained and new sessions can still be initiated. If the primary Central Dispatch scheduler fails, and a backup scheduler has been activated, then existing sessions are maintained and new sessions can still be initiated. The time to failover between schedulers is configurable. For more details on how to configure the scheduler, see Chapter 3, "Implementing Load-Balancing with Central Dispatch."

High-Availability Solution for Central Dispatch Scheduler

Central Dispatch specifies two servers for use as the Scheduler—one acts as a Primary Scheduler, while the other acts as the Secondary Scheduler. The Primary Scheduler always listens on the Virtual IP (VIP) address and distributes traffic unless it at some point becomes "unavailable," at which point the Secondary Scheduler takes over listening on the VIP and distributing traffic.

Resource Requirement for Central Dispatch Scheduler

The Connection Broker/Central Dispatch Scheduler does not generally require much resource even when there is a heavy user load, and routing modules reside in the kernel layer or network driver layer.

To maximize performance and minimize interference from outside factors, it is recommended that you use a dedicated Scheduler for deployments with over 1000 concurrent users. In most cases, a single CPU with 512 MB of RAM should suffice even for deployments with many thousands of concurrent users. A dual processor server and 1 GB of RAM would suffice for future system growth. Running a dual processor server also minimizes the likelihood of any program process that is monopolizing the resources of a CPU.

Siebel Enterprise Server Overview

The Siebel Enterprise Server is a logical grouping of all Siebel Servers that support the same group of users accessing a common Siebel Database Server. The Siebel Enterprise Server can be configured, managed, and monitored as a single logical group, allowing the Siebel administrator to start, stop, monitor, or set parameters for all Siebel Servers within an Enterprise.

NOTE: As you install Siebel Servers, all configuration operations are targeted across all servers and components in the Enterprise. To avoid conflicts between multiple Siebel components running on more than one server, you may need to assign or unassign specific Siebel component groups to individual servers after installation is complete. If you need to make modifications localized to one or more servers or components, you must make these changes to each server or component individually.

All Siebel Servers that connect to a common database schema must be installed within the same Siebel Enterprise Server. If you install more than one Siebel Enterprise Server on a single machine, partition the server into partitions or virtual servers, and install each Siebel Enterprise Server in a separate partition. Each partition must meet the hardware requirements described in *System Requirements and Supported Platforms*. Configuration of multiple Siebel Enterprise Servers on one physical server is not supported in the production environment, even if the Siebel Enterprise Servers are installed in separate partitions.

The Siebel Enterprise Server itself has no processes and thus cannot have a state. However, you can start and shut down operations at the Enterprise level, and these actions apply to all Siebel Servers within that Enterprise.

Siebel Server Overview

The Siebel Server is the middle-tier platform that supports both back-end and interactive processes for all Siebel application clients. These processes are components within the Siebel Server architecture and support functions such as:

- Mobile client synchronization
- Business logic for Siebel clients, as well as connectivity and access to the Siebel Database Server and Siebel File System

- Integration with legacy or third-party data
- Automatic assignment of new accounts, opportunities, service requests, and other records
- Workflow management
- Document Generation

The Siebel Server supports both multi-process and multi-threaded components, and can operate components in background, batch, and interactive modes. Many of the Siebel Server components can operate on multiple Siebel Servers simultaneously to support increasing numbers of users, accommodate larger batch workloads, or increase the availability of those components.

Siebel Server Process

The Siebel Server runs as a process that monitors and controls the state of all server components operating on that Siebel Server. Each Siebel Server is an instantiation of the Siebel Server Process within the current Enterprise. The Siebel Server runs as a daemon process. The installer needs permissions to create such processes. For information on administering the Siebel Server Process, see *Siebel Server Administration Guide*.

Resource Requirements for Siebel Server

Follow the hardware recommendations listed in *System Requirements and Supported Platforms*.

Siebel Server Manager

The Siebel Server Manager is the management console for the Siebel Server and Siebel Enterprise Server.

The Siebel Server Manager allows you to configure the parameters governing the operation of each component, and determine which Siebel Servers a given component can operate. Use the Siebel Server Manager to:

- Start, stop, pause, and resume Siebel Servers, components, and tasks
- Monitor the status and collect statistics across the Siebel Enterprise Server, Siebel Servers, components, and tasks

- Manage the configuration of the Siebel Enterprise Server, Siebel Servers, components, and tasks

You can operate the Server Manager using one of two interfaces:

- Graphical user interface (GUI) by using the Server Administration views in the Siebel application client

  Use the Server Manager GUI for most administrative duties, since it includes more user interface functionality (including the ability to search for and sort various fields within views) and a more intuitive view into the operation of Siebel Servers than does the command-line interface.

- Server Manager Command-line Interface (`srvrmgr`)

  Use the command-line interface for batch-mode processing, since it can run from batch scripts by invoking script files with administration commands that need to run on a regular basis. You can use the command-line interface when a client is not available because it has not been installed or the Web server is not available.

The Server Manager (both the GUI and the command-line interface) connects to the Siebel Gateway Name Server, which contains all availability and connectivity information for the Siebel Servers within the Enterprise. The Server Manager then connects with each of the servers and starts a Server Manager component task. For information on using the Server Manager, see *Siebel Server Administration Guide*. The Server Manager task on each Siebel Server:

- Handles administration commands from the Server Manager
- Executes requested functions
- Returns each operation's results to the Server Manager

NOTE: Each session of Server Manager creates a separate Server Manager task. You thus create a new Server Manager task each time you access the Server Administration screens.

Siebel Server Components Overview

The various programs that operate on the Siebel Server are implemented as *components*. A component represents only a specific type of program; a component is executed or operated as a *task*, or instantiation of a component, on a specific Siebel Server.

Component Modes

Components can execute tasks in one of three run modes—background, batch, or interactive.

- **Background mode components.** Background mode components execute tasks to perform background operations for the Siebel Server. Once a background mode component task starts, it runs until you explicitly stop the task, or until the Siebel Server itself is shut down.

  You can manually start a background mode component by using the Siebel Server Manager. Components with a Default Tasks parameter set to a value greater than zero may start automatically when the Siebel Server is started. Examples of background mode components include Transaction Router, Replication Agent, and Workflow Monitor Agent.

- **Batch mode components.** To start batch mode components, you need to manually start these components using the Server Manager. Batch mode components end once the task has been completed. Examples of batch mode components include Database Extract and Enterprise Integration Manager. Batch mode components can also be started by other components by using the Server Request Broker.

- **Interactive mode components.** Interactive mode components start tasks automatically in response to client requests. Interactive mode component tasks execute for as long as the client maintains the session, and end when the client disconnects. Examples of interactive mode components include Synchronization Manager and Object Manager.

For more information on Siebel Server components, see *Siebel Server Administration Guide*.

Component Types

Siebel Server supports multiple component types; each type performs a specific function or job. A component type is configured with a set of parameters that determines its behavior to create an entity called a *defined component* (or simply *component*). Components are defined at the Enterprise level in *component groups*. Component groups are then assigned to one or more Siebel Servers within the Enterprise on which they can execute tasks.

When the Siebel Enterprise Server is installed, predefined components are automatically configured for each component type. These predefined components are then automatically made available to every Siebel Server within the Enterprise, including the ones you add later on. You can run your entire Siebel eBusiness Applications deployment using these predefined components, or you can modify their definitions and create new defined components to fine-tune your Siebel configuration. For more information on enabling and disabling components, see *Siebel Server Administration Guide*.

The defined components feature allows you to create multiple defined components for a given component type, simplifying the process of starting various types of tasks using different parameters, and managing components across multiple Siebel Servers. For example, you may create one defined component for an Object Manager running in the Siebel Sales Enterprise application in English, and another for an Object Manager running the Siebel Service Enterprise application in French. Although these defined components use the same component type, they service distinct sets of users with different functionality requirements, and are distinct entities that can be individually managed, configured, and administered. Defined components are configured in the Enterprise Component Definitions view of the Server Manager GUI. For more information, see *Siebel Server Administration Guide*.

Component Groups

Component groups are logical groupings of server components that are parts of a process. Using component groups, you can start or stop all components that are required for a single process, such as Siebel Remote or Workflow Management. Siebel eBusiness Applications provide a number of predefined component groups.

You can also create your own component groups. For more information about this, see *Siebel Server Administration Guide*. For a list of components contained within each component group and which need to be enabled in order to use them, see Appendix B, "Enabling Server Components." For information about component group enablement, see different sections in Chapter 6, "Installing the Siebel Server."

Siebel File System and File System Manager Overview

The Siebel File System consists of a shared directory that is network-accessible to the Siebel Server. To gain access to files, Web clients connect directly to the appropriate Siebel Server to request file uploads or downloads. The Siebel Server then accesses the Siebel File System, using the File System Manager (FSM) server component. File System Manager processes these requests through interaction with the Siebel File System directory.

The File System may be installed on the same server as a Siebel Server or Siebel Database Server, or it may be on another network server that can share the directory, so that it is available to the Siebel Server. If the operating systems of the two machines are different (for example, one Windows and one UNIX), you may need to deploy a cross-platform mounting tool to allow both machines to share the directory.

When using Siebel Mobile Web Client in connected mode (also known as the Dedicated Web Client), you may, in some cases, want to connect directly to the Siebel File System. (For examples of these cases, their potential ramifications, and for client setup instructions in each case, see *Siebel Web Client Administration Guide*.)

Before You Start Your Siebel Application Installation

Before you start your Siebel eBusiness Applications installation, complete the following steps:

1. Read *System Requirements and Supported Platforms* and *Release Notes* for the current release to be sure you understand the supported hardware, operating system platforms, RDBMS platforms, supported third-party product combinations, plus any last-minute information regarding this release of Siebel eBusiness Applications.

2 If you are upgrading from a previous version of Siebel eBusiness Applications, refer to the *Upgrade Guide* for the operating system you are using.

3 Carefully read Chapter 2, "Preparing for the Installation," and fill out the Deployment Planning Worksheet, as described in the first section of that chapter.

4 Carefully read the relevant server installation chapters in this guide to make sure that you understand the complete installation process for your operating system and RDBMS platform combination.

5 Carefully read the relevant client installation chapters in *Siebel Web Client Administration Guide* even if you do not plan to deploy a mobile Web client, since this guide also offers information about other supported client types.

6 Refer to any pre-installation information in the guides for those products for which you bought a license, available on the *Siebel Bookshelf*.

7 Prepare a comprehensive installation schedule that includes a timeline for completing specific pre-installation and post-installation tasks, including thorough testing of the Siebel environment.

Preparing for the Installation 2

This chapter describes how to prepare for installing Siebel eBusiness Applications software. It also introduces you to the Deployment Planning Worksheet, an integral part of the installation process.

Before proceeding, turn to "Deployment Planning Worksheets" on page 381 and make a photocopy of the worksheet. Using the copy, the person in charge of the deployment effort should fill out the first section. Members of the team should fill out the information in the sections for which they are responsible.

As you work through the preparation steps in this chapter, you will be prompted to record information you will need while installing and configuring Siebel eBusiness Applications.

In subsequent chapters, you will be prompted to refer to the Deployment Planning Worksheet for specific information about your site and deployment. You will also use it to record other important information for future installations, upgrades, reconfiguration, and expansion of your deployment.

Server Installation Process

The server installation process consists of several steps that you should perform in the following sequence:

1. Planning your deployment.
2. Installing and configuring Central Dispatch, if appropriate.
3. Installing and configuring any server clustering software you intend to use.
4. Creating your database instance.
5. Creating the File System.

6 Installing the Siebel Gateway.

7 Creating a Siebel Enterprise Server and installing one Siebel Server.

8 Installing the Siebel Database Server.

9 Installing your Web server and Web Server Extension plug-in.

10 Installing additional Siebel Servers, if required.

11 Installing any other optional components your organization may have purchased, such as eAI connector software or CORBA Object Manager.

NOTE: AIX, HP-UX, or Solaris Siebel Server (or Ancillary Server Programs) files should be installed in the sequence illustrated in Figure 3 on page 37.

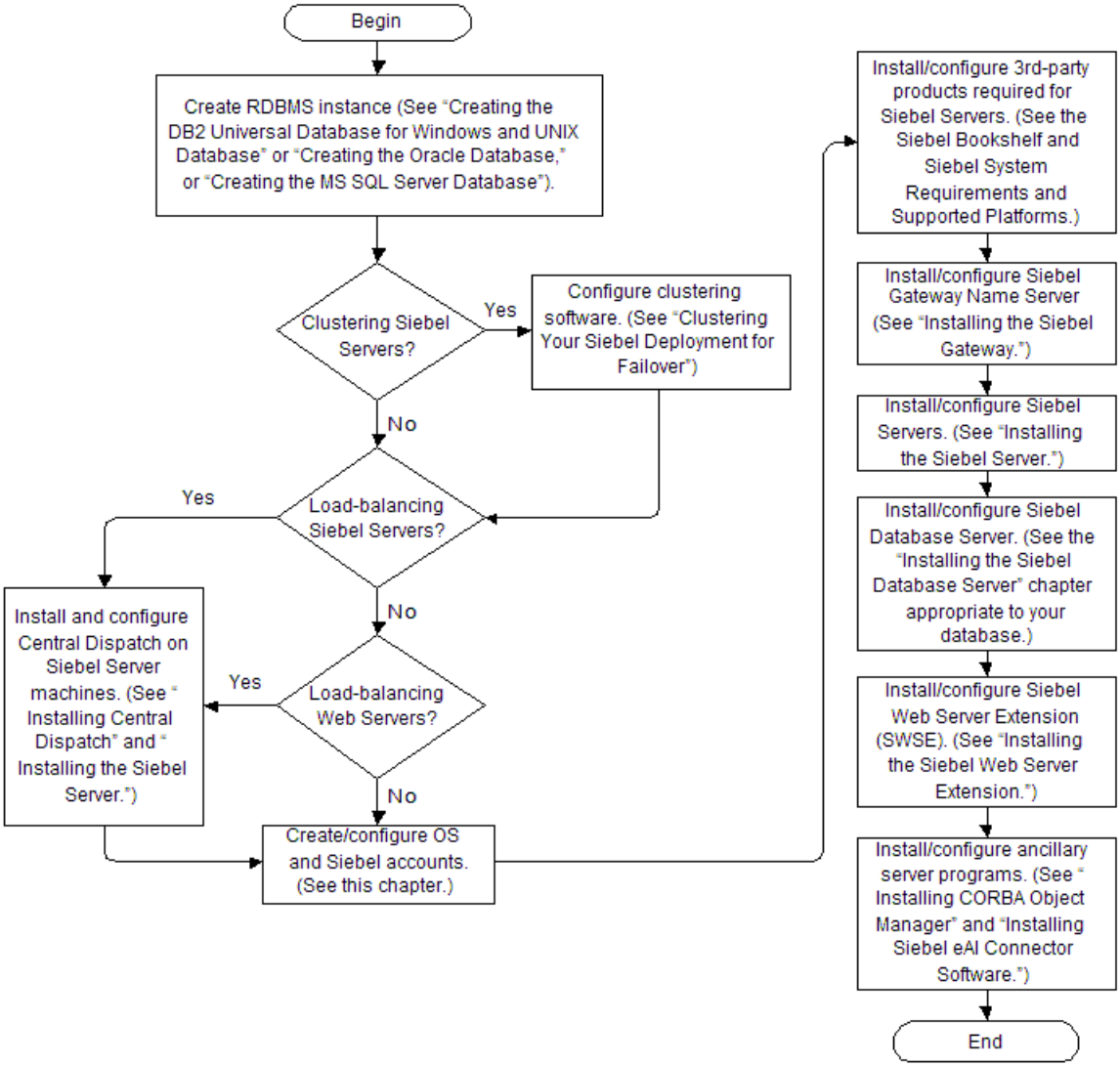

Figure 3. Sequence of Siebel eBusiness Applications Server Software Installation

Deployment of Siebel 7 Gateway Versus Siebel 6 Gateway

The differences between deployment recommendations for the Siebel Gateway in Siebel 7 versus Siebel 6 can be described as follows.

Deployment of Siebel 6 Gateway

In Siebel 6, the installer assumed that the Name Server and Central Dispatch Scheduler were located on the same server. If you selected the "Use Resonate" box during installation, the Siebel Gateway installer looked for Central Dispatch software on the local server. This forced the Name Server to colocate with either the Central Dispatch Scheduler (the default assumption) or a load-balanced Siebel Server.

When high availability was required by the Name Server, the Name Server could be clustered using Microsoft Cluster Service in a server pair. However, Central Dispatch could not be part of the cluster. Because Central Dispatch was colocated on the same server as the Name server, this forced customers to resort to installer workarounds to separate Central Dispatch from the Name Server. This is not required in Siebel 7.

Deployment of Siebel 7 Gateway

In Siebel 7, the Name Server installer does not look for local installation of the Central Dispatch software. You can, as a result, pick the Siebel Gateway deployment that best suits your needs. Also, Siebel eBusiness Applications do not support any clustering technology on the server with Central Dispatch components, whether these are the Central Dispatch Scheduler or a load-balanced Siebel Server. This results from the complexity of clustering a Central Dispatch server, but also due to the fact that Central Dispatch provides the same type of failover capability as the clustering technology.

NOTE: This restriction does not necessarily increase the hardware requirement for the Siebel Gateway when Name Server high availability is required.

Planning Your Siebel Deployment

For a successful installation of Siebel eBusiness Applications you need to determine the following:

- Who will be on the deployment team?
- How many users, and how many different groups, will you need to support?
- For each Enterprise Server you install you need to know:
  - If you operate a heterogeneous server environment, which operating system will you use on the servers for this Enterprise—Microsoft Windows or a supported UNIX version?
  - How many different Siebel Servers will your Enterprise need, and what services will they provide? (See "Dedicating Siebel Servers for Specific Services" on page 47.)
  - Will you need to install load-balancing to manage this Enterprise? Read about connection brokering in Chapter 3, "Implementing Load-Balancing with Central Dispatch."
  - How many computers will you need to run the different servers your enterprise will require? (Read about planning the number and types of servers you deploy in "Planning the Topology of Your Siebel Deployment" on page 49.)
- Where should you locate the servers for best connectivity and maintenance? (Read about planning the layout of your servers in "Planning the Topology of Your Siebel Deployment" on page 49.)
- Will you implement communications functionality associated with Siebel Communications Server (such as CTI/voice, email, and Web collaboration) and related modules?

Considerations Independent of Your Environment Profile

Regardless of your environment profile you need to consider the following:

- **Language Pack Installation.** You do not need to install all the secondary languages that your Siebel Deployment may run on the Siebel Gateway Name Server. However, due to the fact that Siebel Gateway Name Server installation installs certain utilities used by the Siebel Servers, Siebel administrators will only see error messages in the languages that have been installed on the Siebel Gateway Name Server.

  NOTE: In a Unicode-enabled database environment, you can install any of the available Siebel language packs. In a non-Unicode database environment, you must consider the correlation of the language packs you want to install and the characters supported by your database code page. For example, in a Western European code page database, you can only install Western European language packs such as English, French, Spanish, or German language packs. And in a Japanese code page database, you can only install Japanese or English language packs.

  For a list of supported code pages and encoding strategies, see *System Requirements and Supported Platforms*.

- **Number of Name Servers per Machine.** In a production environment, there can be only one Name Server installed per machine.

- **Name Server Sharing.** Do not share the same Name Server for your development, test, and production.

Considerations Based on Your Environment Profile

- **Profile 1.** Several thousand, or more, concurrent users with high availability requirements, or for one data center in a multi-data center deployment.

- **Siebel Gateway Name Server.** Siebel Gateway Name Server should be hosted on a dedicated server or a non-load-balanced Siebel Server for this profile because the Siebel Gateway Name Server will not support high availability if it is located on a load-balanced Siebel Server. To achieve high availability for the Siebel Gateway Name Server, it is necessary to cluster the Siebel Gateway Name Server using cluster software such as VERITAS. Since clustering software is not compatible with a load balanced Siebel Server, the Siebel Gateway Name Server cannot reside on the same machine. The Siebel Gateway Name Server can reside on a dedicated server pair or pair of clustered Siebel Servers (non-load-balanced) without performance impact. Sharing the clustered server assumes that certain Siebel Server components have been identified as candidates that require clustering for high availability. This is because not all Siebel Server components support load balancing. For details on clustering, see Chapter 7, "Clustering Your Siebel Deployment for Failover."

- **Connection Broker.** Typically requires multiple Siebel Servers, thereby requiring installation of Central Dispatch as well. The Connection Broker or Central Dispatch Primary Scheduler should run on dedicated servers. The Central Dispatch Secondary Scheduler can run on either a load-balanced Siebel Server or on a dedicated server without performance penalty during normal operations.

  CAUTION: Sharing the Primary Scheduler with any Siebel Server or Name Server is not recommended for this type of setup.

- **Web Server.** To remove a single point of failure, deploy multiple Web servers. When deploying multiple Web servers, installation of Central Dispatch with Connection Broker becomes a requirement. Web servers can be load-balanced with any standard load-balancing solutions, including Cisco CSS and F5 Big IP.

  NOTE: Siebel eBusiness Applications only provide a Central Dispatch license for the load-balancing of Siebel Servers, but *not of Web servers.*

- **Dedicated Server for Siebel Gateway Name Server.** 1-4 servers, 1 server for Siebel Gateway Name Server if you are not clustering and 2 if clustering, and additional 1 to 2 servers for Central Dispatch Primary and Secondary Scheduler. The Central Dispatch Backup Scheduler can be colocated with a load-balanced Siebel Server without significant performance impact. Figure 4 illustrates three options for deploying the Siebel Gateway Name Server with user Profile 1. Shaded boxes represent dedicated servers, while white boxes represent shared servers.

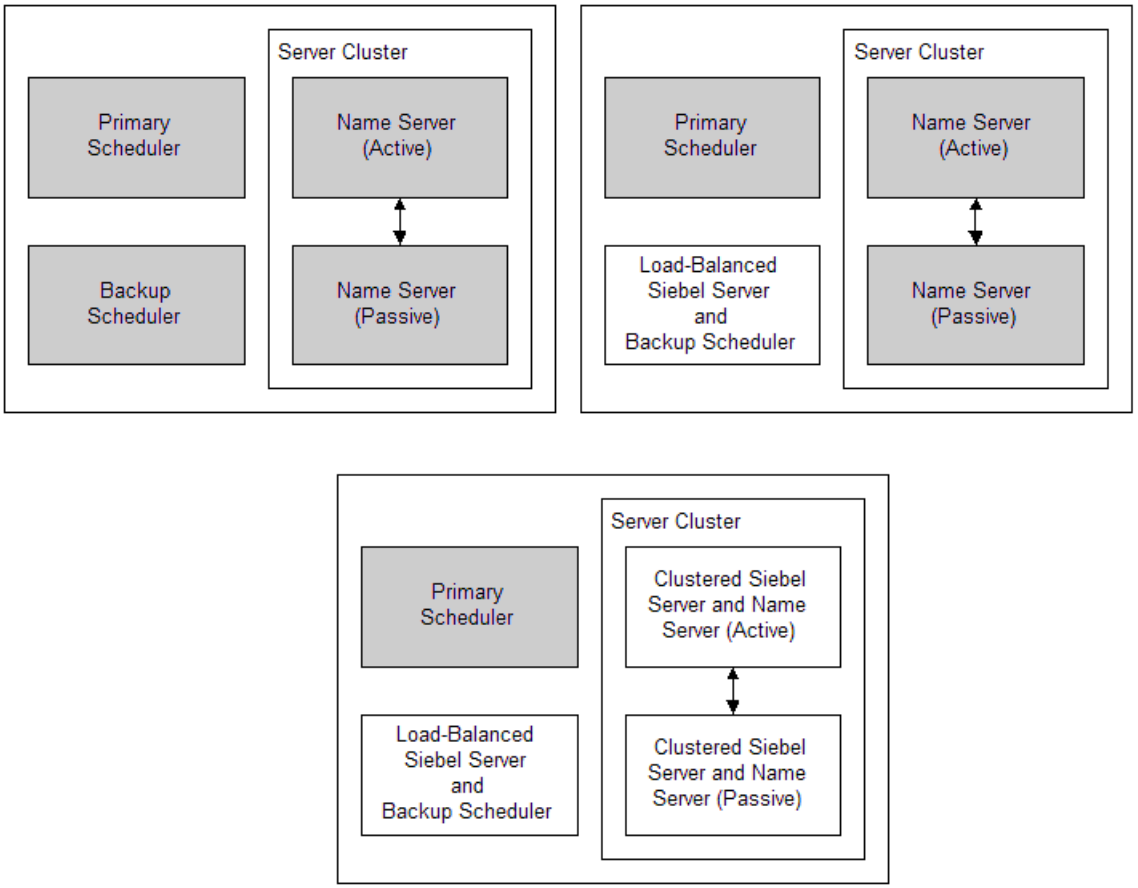

Figure 4. Siebel Gateway Name Server Deployment Profile 1 (Several Thousand Concurrent Users)

- **Profile 2.** A few hundred to 1000+ concurrent users with moderate high-availability requirements.
  - **Connection Broker.** Multiple Siebel Servers may not be needed. Review Central Dispatch requirements carefully. (See Chapter 3, "Implementing Load-Balancing with Central Dispatch.") Multiple Web servers will require installation of Central Dispatch software on the Siebel Server.

    For this type of deployment, the Central Dispatch Scheduler can reside on either a dedicated server to allow for future growth, or on a load-balanced Siebel Server, as long as the combined CPU utilization remains under 80%. The Secondary Scheduler is recommended as well and it can be set up on the other load-balanced Siebel Server.
  - **Siebel Gateway Name Server.** You can cluster the Name Server based on your high availability requirements. It is typically unnecessary to install the Name Server on a dedicated server for a deployment this size. Instead, consider sharing a pair of clustered Siebel Servers with the Name Server.
  - **Web server.** One Web server is generally enough to handle the load in this type of deployment. If multiple Web servers are needed for high availability, Central Dispatch/Connection Broker is required on the Siebel Server. However, if you colocate your Web server with your Siebel Server, you cannot install Central Dispatch on that particular server.

    Figure 5 illustrates a recommended deployment for this user profile.

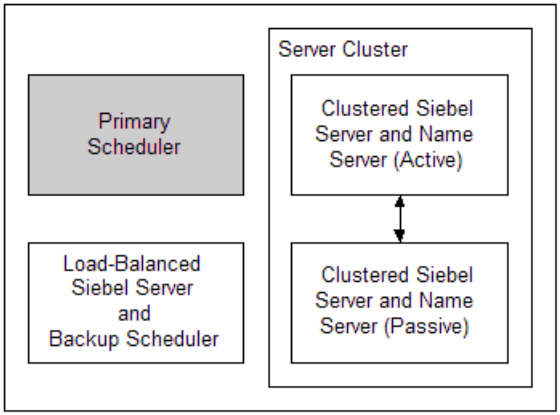

Figure 5. Siebel Gateway Name Server Deployment Profile 2 (Several Hundred to 1000 Concurrent Users)

- **Profile 3.** 100 to several hundred concurrent users with moderate high-availability requirements.
  - **Connection Broker.** Multiple Siebel Servers are not likely to be required. If only one Siebel Server is required, Central Dispatch may not be required, depending on whether your business plans to deploy multiple Web servers. To achieve high availability for Siebel Servers, you can either run all server components in a pair of clustered servers, or use Central Dispatch to provide failover between two Siebel Servers. In this type of deployment, the Central Dispatch Primary Scheduler can run on one of the load-balanced Siebel Servers, as long as it does not belong to a cluster. A dedicated Scheduler is not necessary here, but it can provide a higher level of availability and flexibility, if needed.
  - **Siebel Gateway Name Server.** A dedicated server for the Siebel Gateway Name Server is definitely not needed. If clustering is not required for the Siebel Gateway Name Server, consider colocating the Siebel Gateway Name Server with the Central Dispatch Scheduler (when a dedicated server is set up for it) in one of the Siebel Servers.

- **Web server.** One Web server is generally enough to handle the load in this type of deployment. If multiple Web servers are needed for high availability, Central Dispatch/Connection Broker is required on the Siebel Server. However, if you colocate your Web server with your Siebel Server, you cannot install Central Dispatch on that particular server.
- **Dedicated server for Siebel Gateway Name Server.** None.

- **Profile 4.** Server components and Web servers are likely to exist on the same server. Therefore, Central Dispatch is not required. For high availability, consider clustering Siebel Server and Name Server components.

  If multiple load-balanced Siebel Servers are used, review the recommendations for Profile 3.

Deployment Team

Your deployment team should include:

- A deployment team lead.
- An experienced system administrator to determine what resources, in addition to the Siebel eBusiness Application itself, will be needed for your site. The system administrator will also plan and implement the actual installation.
- An experienced database administrator to assist in determining the proper servers and setup for the database, and to configure the Siebel Database Server after it is installed.

Write this information down in your copy of the "Deployment Planning Worksheets" on page 381.

Sizing Your Installation

After you have determined which Siebel environments you will install, you must determine:

- Which relational database management system (RDBMS) you will use. For details, see "Selecting Your RDBMS" on page 46.

- How many Siebel Servers you will need to connect to a database through a single Siebel Enterprise Server. For details, see "Planning Your Siebel Environments" on page 46.
- On which machines and under which directory you want to install Siebel components. For details, see "Dedicating Siebel Servers for Specific Services" on page 47.

You should direct any additional sizing questions to Siebel Expert Services.

Selecting Your RDBMS

Determine which relational database management system (RDBMS) you will use with your Siebel application and what computer platform to run it on:

- Verify which RDBMS products, versions, and patch levels are supported; check *System Requirements and Supported Platforms*.
- Choose the platform on which your Siebel Database Server will run; consult your RDBMS manufacturer's documentation and *System Requirements and Supported Platforms* to determine which platforms are supported and what issues must be addressed.

> **NOTE:** No more than one RDBMS platform can exist within an Enterprise. For example, you cannot run both the Oracle and DB2 UDB databases.

When you have determined which RDBMS you will use, check off the proper choice in "Deployment Planning Worksheets" on page 381.

Planning Your Siebel Environments

Determine how many and what kind of Siebel environments you will support. It is recommended that you install at least three environments:

- **Development environment.** For developing customized applications and configurations.
- **Test environment.** For testing customized application configurations and upgrades for compatibility before upgrading your production environment.
- **Production environment.** Your live Siebel operational environment.

Your production environment should have its own dedicated servers. Less intensively used Siebel environments, such as development and test environments, may share the same physical equipment. In general, do not load any one machine too heavily, or your Siebel system performance will suffer.

For more information on establishing and using Siebel environments, see *Developing and Deploying Siebel eBusiness Applications*.

When you have determined which environments you will install on your site and how many users each will support, write this information on your copy of "Deployment Planning Worksheets" on page 381.

Dedicating Siebel Servers for Specific Services

There can be numerous Siebel Servers, each of which provides a different type of service. Most consist of the same basic product, but are configured to provide specific information and functions needed by a variety of sales representatives, call centers, customer service representatives, and marketing personnel.

The installation process for all these servers is the same. You must simply determine which Siebel products you will install, provide appropriate computers for them, and include them in your planning. For example, you may want to provide a dedicated server for Siebel Enterprise Integration Manager (EIM), Siebel Remote, or other Siebel products.

When you have determined the number and types of Siebel Servers you require, and how many users each will support, record this information in your copy of the Deployment Planning Worksheet.

Grouping Your Siebel Servers into Siebel Enterprise Servers

A Siebel Enterprise Server consists of a logical group of Siebel Servers configured to share a single Siebel Gateway Name Server, Siebel Database Server, and Siebel File System. These Siebel Servers can, as a result, be administered collectively rather than individually.

The Siebel Enterprise Server has the following components:

- **Multiple Siebel Servers.** Siebel Servers execute business logic for Siebel clients and access the Siebel Database Server on the clients' behalf.

  - Each Enterprise Server must have at least one Siebel Server.
  - Each Siebel Server must belong to one and only one Enterprise Server.

- **One Name Server.** The Siebel Gateway Name Server does not have to be reserved for the exclusive use of a single Enterprise Server, but each Enterprise Server can be connected to only one Name Server.

Larger installations may also include:

- **Two Dedicated Central Dispatch Schedulers.** Central Dispatch provides load-balancing for Siebel Servers. For information about using Central Dispatch, see Chapter 3, "Implementing Load-Balancing with Central Dispatch."

  One machine must be configured to act as the primary Central Dispatch scheduler and another to act as a secondary, or backup, scheduler.

  You must install Central Dispatch on Siebel Servers if you intend to deploy:

  - Siebel Object Managers capable of being load-balanced (such as Call Center, eSales, and others) across Siebel Servers
  - Load-balancing on Web servers

An exception to the previously described deployment rules occurs if you will be operating multiple servers as part of a cluster. In this case, you may not install Central Dispatch on machines you will be clustering. Instead, you will install Central Dispatch on servers you reserve for performing load balancing. For complete information, see Chapter 3, "Implementing Load-Balancing with Central Dispatch." Before installing Central dispatch, consult the Supported Network Interface Card (NIC) matrix available on Siebel SupportWeb. Most of the unsupported network cards on this matrix should be compatible with Central Dispatch. However, please first test any unsupported network cards with Central Dispatch before full deployment. If the network card is found to be compatible but not on the supported list, please contact Technical Support so it can be added to the supported list.

Planning the Topology of Your Siebel Deployment

The topology of your Siebel deployment—the number, type, and capacity of your computers, and the distribution of Siebel components across them—will vary considerably depending on the number and type of Siebel clients that you are deploying.

The following guidelines apply to all deployments:

- **A Siebel Enterprise Server can be a mixture of Windows and UNIX machines.** For more information, see *System Requirements and Supported Platforms*.
- **Give each Siebel Server its own dedicated machine.** While you can install all the Siebel components—the Siebel Database Server, Siebel File System, Siebel Gateway Name Server, and Siebel Server—on a single computer, the Siebel architecture is expressly designed to scale by distributing these components across multiple machines. For optimum performance, install each Siebel Server on a dedicated machine.
- **Give the Siebel Database Server its own high-performance machine.** Your RDBMS must be sized appropriately for your deployment. For information on sizing and tuning your RDBMS for optimum performance, see the documentation provided by your RDBMS vendor.
- **Install sufficient Siebel Servers for your deployment.** The more Siebel Servers you install, the better the distribution of the workload among them when you must support large numbers of Siebel Server components and users.
- **Use Central Dispatch to balance requests for server components across multiple Siebel Servers.** For information about installing Central Dispatch, see Chapter 3, "Implementing Load-Balancing with Central Dispatch."
- **Clustering technology and the connection-brokering features of Central Dispatch address different operational requirements, and must each be deployed on independent nodes in an Enterprise.** You must plan your deployment carefully to take advantage of the benefits of each technology.
  - Clustering provides failover capability. It does not provide facilities for distributing requests among multiple resources as does Central Dispatch because a given resource can execute on only one cluster node at a time. Therefore, clustering does not support load-balancing across cluster nodes.

- Central Dispatch provides load-balancing and connection brokering. It also provides failover capability for the load-balanced components if each server in the Central Dispatch site is sized and configured sufficiently. However, Central Dispatch does not provide failover capability for components that cannot be load-balanced.

For example, consider a Central Dispatch site with five load-balanced servers. To handle a failure on one of the five servers, the other four servers must be able to handle the combined maximum load that all five servers might expect. Therefore, each server should be sufficiently sized and configured to handle 125% of its expected maximum load when all five servers are up. To handle a failure on two servers, each of the five servers must be sized and configured to handle 167% of the expected maximum load when all five servers are up.

For more information about the use of Central Dispatch for load-balancing, see Chapter 3, "Implementing Load-Balancing with Central Dispatch."For more information about clustering servers, see Chapter 7, "Clustering Your Siebel Deployment for Failover," the vendor documentation for your operating system, and SupportWeb.

- **Connect the computers on which your Siebel applications will run to fast LANs.** Siebel Servers require high-speed local area network (LAN) connectivity. Siebel Systems strongly recommends an FDDI, Gigabit Ethernet, or other high-speed LAN to connect the Name Server, Central Dispatch Scheduler, Siebel Servers, and Siebel Database Server.

- **The Name Server can coexist with a Siebel Server or can be installed on another physical machine (or node).** The only precondition is that the Name Server meet the hardware, operating system, and other requirements detailed in *System Requirements and Supported Platforms*. There is always only one Name Server communicating with multiple Siebel Servers. You can, however, have multiple Siebel Enterprise Servers.

Planning the Siebel Directory Structure

You must plan where to install the various Siebel components on your servers, as well as how to install multiple versions, if your organization requires this for testing purposes.

Installing Multiple Versions of Siebel eBusiness Applications

If you are installing multiple versions of Siebel eBusiness Applications, each must be installed in a unique directory. You should use a naming convention that reflects the components and the version number being installed. Also check the value for `RESONATE_ROOT` in your siebenv.sh. The `RESONATE_ROOT` should be set to the actual Resonate install directory and not symbolic link; for example, `/Export/Home/Resonate/.`

CAUTION: You can only install Siebel Gateway, Siebel Server, Database Server, Report Server Access, and EAI connectors in the same root directory. When installing multiple products into the same root directory, be sure that all products match the same release and patch level. You can install additional languages, but you cannot install additional products into a root directory after applying a patch. You must reapply the patch after you install additional languages.

Installing One Version of Siebel eBusiness Applications

On UNIX platforms, the Enterprise Server entities—the Name Server, Siebel Server, and Siebel Database Server installations—are installed by default under a common directory, referred to as *`SIEBEL_ROOT`*. In fact, there is no choice when you install the Siebel Database Server. It is automatically installed in the same directory as the Siebel Server. The *`SIEBEL_ROOT`* directory is created during the installation of the first Enterprise Server entity (for example, the Siebel Gateway) on a machine.

The component installers use `/siebel` as the default for *`SIEBEL_ROOT`*. Except when installing the Siebel Gateway Server, Siebel Server, Database Server, Report Server Access, or EAI connectors simultaneously, which are installed as subdirectories under the same root directory, you should install all other products in their own root directory to prevent potential conflicts.

Consider installing the CORBA Object Manager on a dedicated machine. The CORBA Object Manager can be installed on a machine that also supports the Siebel Enterprise Server components, although for best performance and scalability you should install the CORBA Object Manager onto a dedicated machine.

Record the directory names you decide on in your copy of the Deployment Planning Worksheet in Appendix A, "Deployment Planning Worksheets."

NOTE: Both the CORBA Object Manager and the Siebel Object Manager (a component of the Siebel Server) use configuration files located in $*SIEBEL_ROOT*/*bin*. If you install the CORBA Object Manager in a $*SIEBEL_ROOT* directory also used by the Siebel Server, be sure that you create uniquely named configuration files for the two types of Object Manager if their configurations differ. For information about how to register a configuration file with the appropriate component, see *Siebel Server Administration Guide*.

Setting Permissions and Ownership

- Before you install each server component discussed in this guide, set `umask` to `027` on the installation directory of that machine. This eliminates other permissions, including group write permissions.

  This also sets the default permissions, so that all files and directories created afterwards have `rwxr-x---` permissions.

  The Resonate Manager or Siebel Service Owner should have all permissions. However, the user group should have read and execute (for directory access) permissions only.

- Before installing any Siebel server software, a user with root permissions must create the directory `/var/adm/siebel`. This directory is different from the directory into which the Siebel products are installed and must be created for every Siebel product which uses the Java installer. The installer must also have write permissions to the `siebel` directory.

  If the `/var/adm/siebel` directory structure does not exist, the installer will try to create it. If the installer does not have root permissions, an error message will appear and the installation will abort.

  Similarly, if the person installing the Siebel Server does not have write permissions to the `/siebel` directory, the installation will fail.

Verify Ownership of Installation Directory

You must change the ownership of the target installation directory `$SIEBEL_ROOT` to the user ID installing Siebel Server and current group name of that user. For example, if the group name of the user is `system` then you need to change the ownership of the target installation directory to *`the user`*`:system` using the following command:

```
chown user:system /siebel
```

CAUTION: Failure to change the ownership of the target install directory will cause the install process to hang. If you copy the Siebel installation directories to a local file system, you must make sure the files belong to *`user`*`:system`, and that universal read/execute permissions are set.

For example, if your target install directory was `/local/siebel,` you would enter the following commands:

```
mkdir /local/siebel
mount /cd
cp -pr /cd /local/siebel/
chown -R user:system /local/siebel
chmod -R +rx /local/siebel
```

If `/local/siebel` is made available as a network file system, and you install Siebel Server as the root user, then the machine exporting the file system must grant root authority to that remote machine. Failure to do so will result in an installation hang. The step is only necessary if you install as root; the user ID does not require root access to the remote file system.

If you are installing on a remote server, you must set the `$DISPLAY` variable to display the installation user interface on your local machine. For example:

```
export DISPLAY myworkstation:0.0
```

or

```
setenv DISPLAY myworkstation:0.0
```

where:

`myworkstation` is the machine name or IP address of your local workstation.

You may be able to test that your display works correctly on your local workstation by entering:

```
xclock
```

You can also verify the IP address by entering:

```
echo $DISPLAY
```

If the clock does not appear on your local workstation, then issue the following command on your local machine:

```
xhost +
```

Server Names

When planning server names, especially in a heterogeneous server environment, consider the following:

- Siebel Server and Siebel Enterprise names must each be no longer than 12 characters and must not contain spaces or special characters.
- Names can contain only alpha characters, numerals, underscores, or a combination thereof.
- Names must lead with an alpha character.
- If you will be operating a heterogeneous server environment, use the naming conventions that apply to creating server names under UNIX. This is also good practice if you may deploy a heterogeneous server environment in the future.
- Siebel Server and Enterprise Server names must be unique on the Siebel Gateway Name Server.

File Names

Because all versions of the UNIX operating system are case-sensitive, if you are running your Siebel eBusiness Applications under UNIX, treat all file names, directory names, path names, parameters, flags, and command-line commands as lowercase, unless you are instructed otherwise in the product.

File names may not contain spaces or other special characters. Instead, use underscores.

Creating a File System

The Siebel File System consists of a shared directory that is network-accessible to the Siebel Server. The file system may be installed on the same server as a Siebel Server or Siebel Database Server, or it may be on another network server that can share the directory, so that it is available to the Siebel Server.

NOTE: If the operating systems of the two machines for the Siebel Server and the File System are different—for example, one Windows and one UNIX—you may need to deploy a third-party cross-platform file system mounting tool to allow both machines to share the directory. Refer to your cross-platform mounting software documentation for details.

Since it is possible that two Siebel Server instances will execute simultaneously on the same node, you must create a unique mount point for the NFS file system.

The recommended configuration is to mount the NFS file system in the same directory that is used to mount the dedicated VxFS file system for the VCS service group. A service group is a collection of resources working together to provide application services to client. For example, if the VxFS file system that supports the first Siebel Server instance is mounted on `/SiebelServer1`, then the mount point for the NFS file system could be `/SiebelServer1/SiebelFileSystem`.

NOTE: You should mount the NFS file system one directory level lower than the VxFS file system mount. This means that you must mount the VxFS file system before the NFS file system.

When you install each Siebel Server, you are prompted for the local mount point directory of the Siebel File System. Be sure to explicitly specify the unique mount point for each Siebel Server instance. Do not use the default values or those from a previous Siebel Server installation.

When deploying a Siebel component on a specific Siebel Server instance, it may be necessary in some circumstances to override the component's attribute that specifies the directory for the Siebel File Server. This applies only to components that require access to the Siebel File Server.

NOTE: You must create a separate file system for each Siebel Enterprise Server. For example, if you have development and test databases, you must have two separate Siebel Enterprise Servers, and therefore two Siebel File Systems.

Each Siebel Server accesses its Enterprise's Siebel File System by means of a dedicated server component, called File System Manager (FSM). Individual Web clients need have no direct knowledge of the location of the Siebel File System, since they connect directly with the appropriate Siebel Server to request file uploads or downloads. File System Manager then processes these requests through interaction with the Siebel File System directory. (For more information about File System Manager, refer to *Siebel Server Administration Guide*.)

NOTE: The Siebel File System can be defined at the Enterprise level, Siebel Server level, and component level. In a mixed Siebel Server environment, you must individually modify the file system parameter at the Siebel Server and the component level if their file system location is different from the default (Enterprise) location using the server manager.

Because File System Manager is the sole access mechanism to the Siebel File System, only the user with administrative privileges for the Siebel Server should have access privileges to the file system directories. This protects the Siebel File System from direct physical access by all other users.

When using Siebel Mobile Web Client in connected mode (known in this case as the Dedicated Web Client), you may, in some cases, want to connect directly to the Siebel File System. (For examples of these cases, their potential ramifications, and for client setup instructions in each case, see *Siebel Web Client Administration Guide*.)

Naming the File System Directory

The file name must be alphanumeric and cannot contain special characters or spaces. Underscores are permitted. Also, each filename must begin with an alpha character; for example, `//server/siebel` or `//server/siebel/filesystem`.

NOTE: Do not specify `../att` at the end of the directory string. In other words, never specify a file system such as `/server/siebel/att`. Because Siebel Server installation automatically creates a subdirectory called `../att` (attachments) under the file system directory, if you give a directory this name yourself, File System Manager will be unable to locate the correct subdirectory.

The remainder of this document refers to this directory as

`/SiebelFS/siebel7xx`

where:

`SiebelFS` is the host name of the machine (assuming that a dedicated machine is used for the Siebel File System) and *`siebel7xx`* is the name of the shared directory.

You will need to specify the shared directory when installing the Siebel Server. The shared directory must be available to all Siebel Servers in the Enterprise. You may need to use a file sharing tool to access this directory.

As part of the Siebel Server installation, File System Manager generates a set of subdirectories under the Siebel File System root directory, as described in Table 5.

Table 5. FSM Subdirectories

Subdirectory	Purpose
`att`	Main subdirectory for attachments
`cms`	Communication Server files
`red`	Rule edit cache (used by Product Configurator)
`sme`	Siebel Marketing cache files
`ssp`	Session preferences

Table 5. FSM Subdirectories

Subdirectory	Purpose
`eim`	Siebel transaction files for EIM
`userpref`	Siebel user preferences

For more information about these subdirectories, see *Siebel Server Administration Guide*.

Use the following procedures to set up the Siebel File System.

To set up the Siebel File System

1. Create the directory on the server and path you recorded in the copy you made of Appendix A, "Deployment Planning Worksheets."
2. Using the appropriate administrative tools for your UNIX platform, set permissions for the Siebel Administrator to access the directory and subdirectories to 700.

   NOTE: Only the Siebel Administrator for the Siebel Server should have access privileges to the Siebel File System.

3. Grant access to each Siebel Server and client for the appropriate group.

NOTE: Remember to install the third-party software required to view standard attachment types, such as MS Word, Excel, or Lotus Notes on the client machines that will be running the Siebel Web Client or Siebel Mobile Web Client.

If an appropriate GUI-based administrative tool does not exist on your platform, you can use the `chmod` and `chgrp` utilities to set these parameters. Consult your UNIX platform documentation for more information.

Clustering Prerequisites for the File Server

If you will be operating this File Server as part of a cluster, you must install it on a clustered disk drive in the same cluster resource group in which the Siebel File Server Service resource will run. For information about clustering your servers, see Chapter 7, "Clustering Your Siebel Deployment for Failover."

The Siebel installer allows you to install all servers at once for which you have a license. If you will be operating certain servers as part of a cluster, you must install and configure the Siebel Gateway Name Server and the Siebel Server separately.

If you are installing Central Dispatch, proceed to Chapter 3, "Implementing Load-Balancing with Central Dispatch."

If you are not installing Central Dispatch, proceed to Chapter 5, "Installing the Siebel Gateway."

Preparing the Hardware

Verify that the hardware you have chosen meets all requirements for running your Siebel eBusiness Application as well as the required third-party software. Also verify that the hardware is able to support the Siebel File System, the Siebel Gateway Name Server, the Siebel Server, the Siebel Database Server, and the Siebel Tools administrator's workstation. For size limitations and information on required third-party software, see *System Requirements and Supported Platforms*.

Creating Siebel Accounts

The Siebel Enterprise Server requires that you create one or more of the following standard UNIX system user accounts, depending on whether you implement Central Dispatch:

- **Siebel service owner account.** An account on each Siebel Server in your Enterprise under which all Siebel processes and components operate. In any deployment, this account must exist on each Siebel Server, the Siebel Gateway Name Server, and on any machine on which the Siebel File System exists.
- **Resonate manager account.** An account on each server in your Central Dispatch site that is used by the Siebel Enterprise Server to automatically register Siebel resources with Central Dispatch. This account must exist only if you implement Central Dispatch.

- **Resonate monitoring account.** An account that is required for Central Dispatch connection brokering. This account must exist if you implement connection brokering with Central Dispatch.

NOTE: Do *not* disable these accounts. They must be enabled to connect to the nodes on which the accounts are created.

Creating the Siebel Service Owner Account

The Siebel Gateway Name Server and Siebel Server processes must operate under this common user account with appropriate permissions. All Siebel Enterprise Server software is also installed under this account, and the Service owner account must be used to start or stop Siebel Enterprise Server components.

Use the following guidelines to create the same Siebel service owner account on the Siebel Gateway Name Server, on each Siebel Server in the Enterprise, and on any machine on which the File System exists:

- Create the account at the network level, using an appropriate administration tool for your UNIX platform, so that the same account can be used for all UNIX servers within the Siebel Enterprise Server.
- Determine what the account name and password will be, and record this information in your copy of the Deployment Planning Worksheet. (For security reasons, you may prefer not to record the password.)
- The account password should preferably not require a change on next logon and must be set not to expire. To achieve this, do not assign a login shell to that account. (If you do not assign a login shell to the account, you also do not need to assign a home directory to the account.)
- The account name or password cannot contain any spaces.
- It is possible for the Siebel service owner and the Resonate manager accounts to be the same account if either account meets the requirements of both.

Creating the Resonate Manager Account

The Resonate manager account, also known as the Resonate Administrator account, is required when you use Central Dispatch for connection brokering. Therefore, you need an account with this role only if you install connection brokering.

This account is used by the Siebel Enterprise Server to automatically register Siebel resources with Central Dispatch.

Use the following guidelines to create the same Resonate manager account on each machine in the Central Dispatch site; that is, the machines on which the Central Dispatch Schedulers, the Siebel Gateway Name Server, and the Siebel Servers on which Central Dispatch performs connection-brokering:

- This account needs only to be user-level.
- Determine what the account name and password will be, and record this information in your copy of the Deployment Planning Worksheet. (For security reasons, you may prefer not to record the password.)
- The account password should preferably not require a change on next logon and must be set not to expire. To achieve this, do not assign a login shell to that account. (If you do not assign a login shell to the account, you also do not need to assign a home directory to the account.)

  If your site requires a change of password each time a user logs in, see Chapter 3, "Implementing Load-Balancing with Central Dispatch."
- An account name cannot contain embedded spaces.
- It is possible for the Siebel service owner and the Resonate manager accounts to be the same account if that account satisfies the requirements for each account.

Creating the Resonate Monitoring Account

This account is required for the Central Dispatch connection brokering server. Therefore, you need this account only if you install connection brokering. Central Dispatch uses this account to monitor the load on your Siebel Servers and incoming connection requests.

The Resonate monitoring account, like the Resonate manager account, must exist on each machine in the Central Dispatch site.

Use the following guidelines to create a Resonate manager account on each machine in the Central Dispatch site:

- The Resonate monitoring account must have login privileges on each machine, but requires no additional privileges.
- It is recommended that the Resonate monitoring account and the Resonate manager account be different accounts, so that there is no possibility that the Resonate monitoring account can administer the machine. As such, they should have different passwords.

NOTE: Never log on to Dispatch Manager accounts directly as a user. The accounts exist on each machine so that Dispatch Manager can validate the password you enter when connecting to your Central Dispatch site before granting administration or monitoring privileges.

Planning Port Assignments

If your network requires static port assignments for correct configuration, determine which ports you want to assign to Synchronization Manager, Request Manager, and each Siebel Object Manager component. Note these in your copy of the Deployment Planning Worksheet for each Siebel Server in your deployment.

CAUTION: The Siebel Gateway Name Server and Siebel Server cannot communicate at port numbers higher than 32767.

If you use Central Dispatch, the default port used by the scheduler is 2320. If you want to reconfigure the scheduler on another port, you must do so using Siebel Server Manager after you install Siebel Enterprise Server components.

Planning RDBMS Installation and Configuration

Note the following guidelines for installing and configuring your chosen Relational Database Management System (RDBMS).

- Make sure that this release of Siebel eBusiness Applications supports the exact version of your chosen RDBMS, as specified in *System Requirements and Supported Platforms*, and that the RDBMS has been installed on the machine to be dedicated as the Siebel Database Server. This server will hold the database tables containing your business data, such as sales (personnel, territories, opportunities, and activities), marketing, and customer service information.
- Determine certain details about your RDBMS configuration for completion of the Deployment Planning Worksheet, located in Appendix A, "Deployment Planning Worksheets."
  - Verify that the network names of the servers that will support the Siebel Database Server and Siebel File System are properly recorded in your copy of the Deployment Planning Worksheet. Use the machine names, not the IP addresses, for the Siebel File System names. IP addresses are not supported.
  - Siebel will create the ODBC datasource name during installation. The name will be `SiebSrvr_enterprise`. For example, if your Siebel Enterprise Server name is the default, `siebel`, the ODBC datasource name will be `SiebSrvr_siebel`. Using this pattern, determine what your ODBC datasource name will be and fill in your copy of the Deployment Planning Worksheet accordingly.
  - Complete the appropriate RDBMS-specific information in your copy of the Deployment Planning Worksheet.

Planning Database Connectivity

Use the version of the ODBC driver listed in *System Requirements and Supported Platforms* documentation for your chosen RDBMS for both Siebel Web clients and Siebel Servers.

In an enterprise-level deployment, configure the Siebel Web Clients, Siebel Servers, and Siebel Database Servers to use only the TCP/IP protocol for ODBC connectivity, not named pipes. Only in the case of smaller deployment (100 users or less), in which the database and the Siebel Server reside on the same machine, should you set ODBC configuration to use named pipes.

Creating a Staging Point

You may choose to copy the installation CD-ROMs to a staging point. This allows you to complete the installation process without physically inserting and swapping CDs. You must create a staging point in order to perform a system-wide installation from unattended mode.

To create a staging point

1. Determine which languages need to be installed.
2. Create a target installation directory from which to stage system-wide installations.
3. Insert the *UNIX_OS Server Programs, Siebel Enterprise Server, Base* CD-ROM into the CD-ROM drive of the installation machine.

   where:

   UNIX_OS = your UNIX operating system, such as Solaris, HP-UX, or AIX.

   NOTE: The volume label for the CD is `sea`*UNIX_OS*|*base* or *language*; it may not be required, depending on how you access the CD-ROM.

4. Navigate to the `/ses` directory and copy the files in the `/ses` directory to the target installation directory.
5. From the target directory, create the individual language directories for the languages you will be installing.

   If you are installing a language that spans more than one CD, create a directory for each CD under the directory for each language. For example:

```
unix_server_hpux_ses_lang/
  ses/
       enu/
          disk1
          disk2
```

6 Insert the *UNIX_OS Server Programs, Siebel Enterprise Server,* Language CD-ROM into the CD-ROM drive of the installation machine

where:

- *UNIX_OS* = your UNIX operating system, such as Solaris, HP-UX, or AIX.
- *Language* = the Language Pack being installed.

7 Navigate to the */language_directory/*ses and copy the files to the corresponding language directory you created in Step 5.

If you have multiple language CDs, copy the files into the directory that you created for each disk.

8 Repeat this for each language you are installing.

NOTE: When installing the Siebel Web Server Extension or CORBA OM, no CD swapping is required, so that you can install from the CD-ROM.

Implementing Load-Balancing with Central Dispatch 3

This chapter describes the installation and configuration Central Dispatch for those who will implement connection brokering and load-balancing under UNIX. Central Dispatch brokers requests between Web clients and the Application Object Managers in the Siebel Servers.

You must install Central Dispatch on any given machine before you can install Siebel Server.

The installation and configuration of the Central Dispatch consists of the tasks listed in Table 6.

Table 6. Central Dispatch Installation and Configuration Tasks

Who Performs It?	Task
System Administrator	**1** Plan your Central Dispatch site. See "Planning Your Central Dispatch Site" on page 68. **2** Provide for network connectivity between each node. See "Network Connectivity for Central Dispatch" on page 69. **3** Install Central Dispatch on each machine for which you want to allow load-balancing. See "Installation Tasks for Central Dispatch" on page 72. **4** Configure Central Dispatch. See "Configuring the Central Dispatch Site" on page 74.

Planning Your Central Dispatch Site

You must install Central Dispatch if your deployment has any of the following:

- Multiple Siebel Servers
- Multiple Web servers
- An Object Manager component that runs on two or more Siebel Servers

Install Central Dispatch on all machines that will support a load-balanced Siebel Server, unless the server will be operated as part of a cluster. Install Central Dispatch on all Siebel Servers that support load-balanceable Application Object Managers, such as Call Center or eSales. Siebel Servers that do not host Siebel Application Object Managers, such as a server dedicated to Workflow or Siebel Remote, do not require Central Dispatch.

Central Dispatch Deployment Considerations

- If your site has a large number of concurrent users (1000 or more), consider installing the Central Dispatch primary and backup schedulers on dedicated machines. This will provide for optimal performance during normal operation and when the primary scheduler goes down. If the performance during primary failure is not critical, a regular server node in the Central Dispatch site could be used as the backup scheduler.
- You cannot install Central Dispatch on any machine that is part of a cluster.
- Install Central Dispatch on the same machine as a Web server only if you are using Central Dispatch to load-balance the Web server. If you use Central Dispatch for Web server load-balancing, then the Web servers must belong to a different VIP than the application servers.

A server cannot make requests to the same virtual IP address that it is listening or receiving traffic on, which results in the following deployment limitations:

- The Web server and Central Dispatch Scheduler cannot reside on the same machine, because the Web server makes requests to the virtual IP address that the Scheduler listens on.

- The Web server and a load-balanced Siebel Server cannot reside on the same machine. The Web server and Siebel Server *can* reside on the same machine if the Siebel Server is not part of the Central Dispatch load-balanced site.

CAUTION: To install Central Dispatch on a computer with Compaq Teaming NIC, see TechNote 321 on SupportWeb before proceeding.

For more information on deployment planning with Central Dispatch, see TechNote 349, posted on SupportWeb.

Verifying Accounts for Central Dispatch

Central Dispatch requires two accounts, the Resonate Administration Mode account and the Resonate Monitor Mode account. Before proceeding with the installation, verify that you have created these accounts, as described in Chapter 2, "Preparing for the Installation."

NOTE: These accounts must be the same across all your Siebel Servers and the passwords used for them cannot contain any spaces.

Both of these accounts are standard UNIX-based system user accounts that must exist on every host where Central Dispatch is installed.

Network Connectivity for Central Dispatch

To establish network connectivity among all nodes in your Central Dispatch site, complete the following tasks:

- "Assigning the Enterprise Virtual IP Address" on page 69
- "Assigning Static IP Addresses" on page 70
- "Verifying Network Routes" on page 71

Assigning the Enterprise Virtual IP Address

Select the Siebel Enterprise (VIP) and register it with the appropriate naming service. Record the VIP in Appendix A, "Deployment Planning Worksheets."

When you deploy Central Dispatch on your Siebel Servers, Siebel Web Server Extensions connect the Web servers to a virtual IP address for the Siebel Enterprise (VIP), rather than connecting directly to the Siebel Servers. The Central Dispatch scheduler uses the VIP to connect Web servers to the most appropriate, and least loaded, Siebel Server in the Enterprise.

To obtain a static IP address to use as the VIP, see your network administrator. The VIP should be unique and should be used exclusively as a logical IP address. Never assign a VIP to a real physical host, or computer.

You must register your VIP with the appropriate name services, such as DNS or NIS, exactly as you would any other IP address. However, unlike standard IP addresses, the VIP denotes the *entire Central Dispatch site,* not just a particular server. Make sure that *all* the nodes in your Central Dispatch site are registered with the naming service you are using. For example, if you use `hosts` files, each file must contain entries for all the nodes in the site.

TIP: If a group of servers is cut off from the rest of the network and visible only to each other, resolve their names either by modifying the DNS database records or by modifying the entries in the local host file:

```
/etc/hosts
```

If this is not sufficient to establish connectivity, contact your network administrator to make sure that all physical connections are in place and that routing tables have been updated correctly.

Assigning Static IP Addresses

Assign static IP addresses to each machine in the Central Dispatch site. Select these addresses from the appropriate subnet, and record this information in Appendix A, "Deployment Planning Worksheets."

Central Dispatch requires that static IP addresses be assigned to each of the machines with which it interacts. These IP addresses must all use the same subnet mask. The IP addresses of the primary and backup scheduler nodes must be on the same subnet as the VIP.

To assign static IP addresses to your UNIX servers

1. Follow the documentation provided by your hardware and operating system vendors to configure each network adapter card with the appropriate static IP address.
2. Double-check to verify that each static IP was assigned to the correct machine and that no static IP was assigned to more than one computer.
3. Verify that the Gateway VIP was not assigned to any network adapter card.

CAUTION: If the DNS Server address is selected by default, do not deselect it because you will not be able to access the network.

Verifying Network Routes

Use the traceroute utility to verify that all servers have TCP/IP connectivity to one another, as well as to the servers that will support the Siebel Database Server and the Siebel File System.

Verify that the routes between all servers are symmetric. Symmetric routes are routes that, step for step, traverse the same computers and the same network nodes in exactly the opposite order with respect to each other.

TIP: If all servers are in the same subnet, the routes will always be symmetric.

To verify that routes between servers are symmetric

1. On the computer that will support the primary Central Dispatch scheduler, open a shell command window.
2. Use the `traceroute` command to display the route from it to one of your servers:

   ```
   $ traceroute server
   ```

   where:

   `server` = The name or IP address of the Siebel Server machine for which you are testing symmetry.

3 From that computer, open a shell command window and use the `traceroute` command to display the route from it back to the machine that will host the primary Central Dispatch scheduler.

4 Compare the results of each `traceroute` and verify that the routes between these servers are symmetric.

5 Repeat these steps from your primary Central Dispatch scheduler for each server on which Central Dispatch has been installed.

6 From the secondary Central Dispatch scheduler, repeat this process with each server.

If you find asymmetric routes between any two servers, adjust the routing so that the routes are symmetric. You might have to delete static route tables and redo the routes, or restart the router in order to get a symmetric route.

After you have verified network routes on all machines, you are ready to install Central Dispatch.

Installation Tasks for Central Dispatch

You must install Central Dispatch on each Siebel Server on which you want to employ load-balancing, and on any machines that will be dedicated for the Central Dispatch primary scheduler and backup scheduler.

NOTE: Make sure you have the Resonate Administrative Mode account and Resonate Monitor Mode account created as described in Chapter 2, "Preparing for the Installation."

To install Central Dispatch

1 Log on to the server and open a terminal window.

2 Navigate to the following directory on the *AIX|Solaris|HP-UX Server Ancillary Programs (CD 2 of 2)* CD-ROM:

aix|*solaris*|*hpux*/enu/resonate/unix

Central Dispatch installation is not language-dependent. Navigate to the enu directory regardless of the language in which you are deploying your Siebel applications.

NOTE: The volume label for the CD is sea*UNIX_OS*anc2; it may not be required, depending on how you access the CD-ROM.

3. Log on as root.
4. Start the Central Dispatch installation script by entering:

   ```
   ./install-cd-commander
   ```

5. Follow the instruction in the *Resonate Central Dispatch and Resonate Commander Installation Guide,* available on the *Siebel eBusiness Third-Party Bookshelf*. However, at the Select Component screen, select only the following Central Dispatch components:

   - Node
   - Management Tools
     - CDAction
     - Dispatch Manager

NOTE: If you find any discrepancies between the information provided in this guide and the Resonate third-party documentation, always follow the instructions provided in this guide.

6. Check the value for RESONATE_ROOT in your siebenv.sh. The RESONATE_ROOT should be set to the actual Resonate install directory and not symbolic link; for example, /Export/Home/Resonate/.
7. Repeat the installation steps in all the nodes that will be part of the Central Dispatch site, including the Primary Scheduler, Backup Scheduler, and all Siebel Server nodes.

Configuring the Central Dispatch Site

After you have installed Central Dispatch on all machines in the Central Dispatch site (both schedulers and Siebel Servers), configure your Central Dispatch site using Resonate Dispatch Manager.

You configure the Central Dispatch site only once, from any server within the Siebel Enterprise Server. Central Dispatch automatically shares and updates configuration information across all Central Dispatch nodes in the site as Siebel Servers are started or stopped, or as their configuration is modified.

Before proceeding, review *Resonate Central Dispatch User Guide,* provided on the *Siebel eBusiness Third-Party Bookshelf*.

Configuration Tips for Central Dispatch Site

Review the following configuration tips in Table 7, when setting up your Central Dispatch site. These are additions to, and differences from, the configuration specifications described in the *Resonate Central Dispatch User Guide.*

Table 7. Configuration Tips

Topic	Comment
Server weight	Do not change the server weight in Dispatch Manager. Instead, use the Siebel parameter `MaxTasks` for an asymmetric distribution of connections. For information on the use of this parameter, see *Siebel Server Administration Guide*.
Dedicated scheduler	Do not enable a dedicated scheduler as a server.
Class of service (COS)	You do not need to configure Resonate's class of service (COS) or thresholds to configure scheduling rules. This is because Siebel eBusiness Applications do this dynamically.
Server Nodes	All nodes other than dedicated schedulers must be configured with the Server Enable option and Server Re-enable option on. (This options are on by default.)

Table 7. Configuration Tips

Topic	Comment
Affiliate nodes	Do not designate any server as *Affiliated Node*, whether they are running Central Dispatch components or not. Please disregard any related comments in the *Resonate Central Dispatch User Guide*.
Shadow scheduling	Do not enable shadow scheduling; Siebel eBusiness Applications do not use the persistent sessions feature of Central Dispatch.

Environment Variables for Central Dispatch

Set the environment variables as described in Table 8.

Table 8. Environment Variables

Variable	Value	Comment
`HTTP_INACTIVE_CONN_TIMEOUT`	31,536,000 (seconds in a year)	Number of seconds after which an inactive HTTP connection is timed out. Set on each node, including scheduler nodes.
`SERVER_INACTIVE_CONN_TIMEOUT`	31,536,000 (seconds in a year)	Number of seconds after which an inactive server session is timed out. Set on each node, including scheduler nodes.

Table 8. Environment Variables

Variable	Value	Comment
RES_PERSIST_BLOCK_SIZE	20,000 x N bytes	Space allocated for the Central Dispatch Scheduler Rules file. N is the number of nodes on which Central Dispatch is installed. For example, if you install Central Dispatch on 7 nodes, the file size should be 20,000 x 7, or 140,000. Set on each node, including scheduler nodes.
CPU_OPEN_BASIC_AGING CUSTOM_CPU_OPEN_AGING CPU_OPEN_ENHANCED_AGING	0	Each one of these turns off a Central Dispatch feature in which resource-based load balancing may be disabled and replaced with Round Robin load balancing. Set only on scheduler node.

Refer to *Resonate Central Dispatch User Guide* for instructions on how to set environment variables.

Network Interface Cards

If you use multiple Network Interface Cards (NICs) on your Siebel Servers, consign these to separate subnets. However, Central Dispatch, working with Siebel applications, will only listen on one IP Address.

If there are multiple NICs in a server on which Central Dispatch is installed, pay attention to which traffic goes through which NIC. For example, verify which NICs have RXP bound to them, the TCP binding order, and the routing table.

Using Dispatch Manager to Configure Your Site

To finish configuring your Central Dispatch site, complete the following procedure.

To configure a Central Dispatch site

1 Verify that the Enterprise VIP is not assigned to any machine or another Siebel configuration by using the `ping` command.

2 From a Siebel Server on which Central Dispatch was installed, open a shell.

3 Navigate to `/resonate/bin` and enter:

```
./dispatch-manager
```

4 In the Dispatch Manager Welcome dialog box, leave the Connect to Node field blank if this is the initial configuration of Central Dispatch.

Otherwise, enter the static IP address or the host name of the primary node, then enter the Resonate manager password to log in to Central Dispatch.

5 In the Site View dialog box, click Site Setup.

6 On the System Nodes tab:

a Add the static IP address of each machine that will support a Siebel Server, Central Dispatch Primary Scheduler, or Central Dispatch Backup Scheduler. (A place for these IP addresses has been reserved in Appendix A, "Deployment Planning Worksheets.")

NOTE: Hostnames can be used, but they must map one-to-one to the static IP address that Resonate uses. It is recommended that you enter the IP address instead of the host to avoid any conflicts.

b Verify that the check boxes for Server Enable and Server Auto-reenable are checked for all services except the dedicated schedulers.

c After entering the first primary IP address, click Add.

d After entering information for the next node, click Add and Apply Changes.

NOTE: Type the static IP address, not the name of the machine to which it is assigned in the Node Name field. The use of host names can cause inconsistencies in routing, depending on the operation of your DNS servers.

7 On the VIPs tab, add the IP address to the site:

a In the VIP field, type the virtual IP address.

b In the Primary Scheduler list box, select the static IP address of the server that will serve as the primary Scheduler node.

c In the Backup Scheduler list box, select the static IP address of a second machine to serve as the Backup Scheduler node.

d To add the IP, click Add.

8 On the Licensing tab, type the license key in the New Key field and select Set New Key.

The license key is stored in the `license.txt` file in the `Resonate` subdirectory of the *AIX|Solaris|HP-UX Server Ancillary Programs (CD 2 of 2)* CD-ROM.

9 On the Policies tab:

a Select Resource-based in the Scheduling Policy drop-down list.

You must select resource-based scheduling to take advantage of Central Dispatch's load-balancing features with Siebel eBusiness Applications.

b For the load-balancing policy, it is recommended that you select CPU Load and Connections (Enhanced).

10 On the Operation tab:

a Click the advanced options button.

b Set *Agent Heartbeat Interval* to 1 second.

c Set *`Heartbeat Until down`* to 100. Setting this parameter to one hundred means that it will take 100 seconds for a scheduler or Siebel Server to failover. This value can be adjusted based on your requirements for failover time, but keep in mind that a small value (< 10) may result in false failover of Siebel Servers.

d Click Start Site.

e Type the password for the Resonate Administrative Mode account.

11 Verify that the Central Dispatch site has started by using either of the following methods:

- Click the Operations tab. `System Started` should be visible in the bottom message area.
- Click the Site View tab. Your system nodes appear green if the site has been started, and red if Central Dispatch has not started successfully.

Scheduler nodes should appear green unless you did not check the Server Enable and Server Auto-reenable check boxes on the System Nodes tab. If you failed to check these boxes, the scheduler nodes appear blue.

If the other nodes are red, verify that you entered a valid IP address for those nodes. If the IP address was correct, verify that your Siebel Gateway Name Server or Siebel Server was not started. They cannot be in operation when you install and configure Central Dispatch.

12 Check the messages tab. If there are messages with a status of `Error`, investigate the cause.

Adding or Removing a Server in Central Dispatch Site

After initial installation and configuration, Central Dispatch configuration and operation are handled primarily by the Siebel Server software. You can use Dispatch Manager to monitor the operation of your Central Dispatch server, as described in the Resonate documentation. However, you will not need to modify Central Dispatch configuration during normal operations, with the exception of adding or removing servers from your Siebel Enterprise Server.

To add a server

1 Install and configure Central Dispatch on the new machine.

2 Add the static IP addresses assigned to each server from the System Nodes tab of the Site Setup dialog box in Dispatch Manager, as described in "Configuring the Central Dispatch Site" on page 74. Then click Add, and Apply Changes.

3 Verify that the correct static IP address is assigned to each server and that no static IP address is used more than once.

To remove a server

1 Disable the server node from the central Dispatch site. For detail instruction, refer to the *Resonate Central Dispatch User Guide*.

2 If you are removing a static IP address assigned to a server running a Siebel Gateway Name Server or Siebel Server:

   a Stop the Siebel Server, the Siebel Gateway Name Server, or both (in that order) in that node before removing the IP address.

   b Using Dispatch Manager, verify that none of the scheduling rules contain the static IP address, or node, you want to remove. If it does, manually remove the rule node. If the rule contains multiple nodes, update the rule to remove reference to those nodes. See *Resonate Central Dispatch User Guide* on the *Siebel eBusiness Third-Party Bookshelf*.

NOTE: Under normal circumstances, manually removing a node from a scheduling rule should not be necessary and primarily would be required only if a server did not shut down properly.

3 Remove the static IP addresses assigned to each server from the System Nodes tab of the Site Setup dialog box in Dispatch Manager, as described in "Configuring the Central Dispatch Site" on page 74. Then click Delete and Apply Changes.

Reinstalling Central Dispatch

If you change the static IP address or hardware configuration, you must reinstall Central Dispatch on that machine.

To reinstall Central Dispatch

1 Stop all Siebel services and any Central Dispatch services on all nodes.

2 Uninstall Central Dispatch from the console. See *Resonate Central Dispatch Installation Guide,* provided on the *Siebel eBusiness Third-Party Bookshelf*.

3 Perform the required network or hardware configuration on the affected node (or nodes).

4 Reinstall Central Dispatch on the node (or nodes) on which you formerly had it installed, following the instructions provided earlier in this chapter.

TIP: Use the same Resonate Administrator password that was used previously.

5 Verify that the installer has installed Central Dispatch in the correct location.

6 Verify that the reconfigured node is part of the Central Dispatch site.

If it is not, refer to "Configuring the Central Dispatch Site" on page 74.

7 Start the Central Dispatch site, according to instructions in "Configuring the Central Dispatch Site" on page 74.

8 Restart all Siebel services on all nodes.

Changing Your Resonate Administrative Mode Account Password

If security at your site requires that you change your password each time you log in, follow the procedure described below.

NOTE: Unless you must change your password each time you log on for security reasons, it is recommended that you not change your password. Also make sure there are no spaces in your password.

To change your password for the Resonate Administrative Mode account

1 Using Server Manager, change your Siebel logon password.

2 Stop the Siebel Server.

3 Change your Resonate Administrative Mode account password at the operating system level.

4 Restart the Siebel Server.

Troubleshooting Load-Balancing with Central Dispatch

This troubleshooting section addresses some of the common Siebel-specific issues with Central Dispatch. For general information on troubleshooting Central Dispatch, see the Resonate Web site at http://www.resonate.com.

If you encounter problems installing or configuring Central Dispatch that you cannot resolve using these instructions, contact Siebel Technical Support. Do not contact Resonate Technical Support.

Use the task flow in Figure 6 when troubleshooting Central Dispatch with Siebel eBusiness Applications.

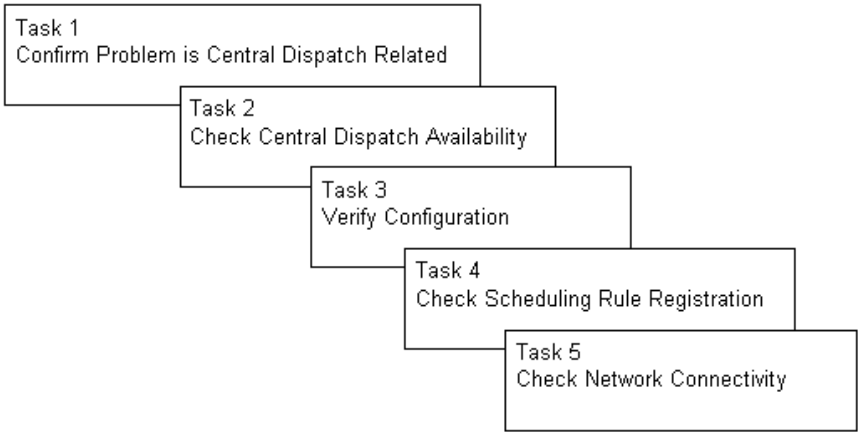

Figure 6. Troubleshooting Tasks

Task 1: Confirm Problem is Central Dispatch Related

To confirm whether the problem is a Central Dispatch issue, try connecting directly to the Siebel Server without using Central Dispatch. To do this, modify the following connect string:

```
siebel[.protocol][.encryption][.compression]://VIP:siebel_port/
Enterprise/Component
```

Replace it with the following:

```
siebel[.protocol][.encryption][.compression]://
Gateway:siebel_port/Enterprise/Component/Siebel_Server
```

To test the connection

1. Shut down all Web servers.
2. Shut down all but one Siebel Server.
3. Change the connect string above in one of the virtual directories in the *eapps.cfg* file.
4. Restart one Web server using the modified file.
5. Try connecting to the Siebel Server.

If you can connect using the new connect string but cannot connect using the load-balanced connect string, then the problem is related to Central Dispatch.

Task 2: Check Central Dispatch Availability

Use the Dispatch Manager Site View tab to view the status of each server. If any server is red, investigate the cause. If all servers appear as green, select the Messages lower tab for messages labeled critical and investigate the cause.

You can also run the `netstat -anP tcp` command to list all active TCP sockets. There should be some sockets using the VIP as the Local Address.

Task 3: Verify Configuration

Before proceeding with troubleshooting, verify the following:

- Verify that the EnterpriseVIP is set correctly on the Name Server by running List `EntParameter EnterpriseVIP` command through the Siebel Server Manager.
- If necessary, reset the `ResonatePassword` through Siebel Server Manager by running the `EntParameter ResonatePassword;` for example, `EntParameter ResonatePassword= "newpassword".`)

- Verify that the connect strings are set correctly on the Web server. In the `eapps.cfg` file on each Web server, your "load balance component" connect strings should have the VIP (or corresponding hostname) and Vport (2320 by default), and only specify Enterprise name and component name. For example:

  ```
  siebel.tcp.none.zlib://VIP:2320/Enterprise_name/
  OM_component_name
  ```

- Verify that the `RESONATE_ROOT` in your siebenv.sh is set to the actual Resonate directory and not the symbolic link; for example, `/Export/Home/Resonate/`.

- Perform the installation verification tasks listed in the *Resonate Central Dispatch and Resonate Commander Installation Guide,* available on the *Siebel eBusiness Third-Party Bookshelf*.

Task 4: Check Scheduling Rule Registration

Use Dispatch Manager to verify that the expected rules exist and that there are no extra or duplicate rules. If you do not find all of the expected rules, examine the log files for the applicable Siebel components for errors running CDAction.

Task 5: Check Network Connectivity

Check client-to-scheduler, scheduler-to-server, and server-to-client connectivity.

NOTE: For more information on performing these tasks, see TechNote 316, posted on SupportWeb.

Generating Troubleshooting Information for Central Dispatch

You can generate output to assist with troubleshooting using the following utilities:

- rxpstat utility

  Command-line utility provided by Central Dispatch that produces statistics related to the state of all nodes in the Central Dispatch site. It is installed in the *`Central_Dispatch`*`/bin` directory. The command `rxpstat -a` returns a full listing of information.

- `netstat -r`

  Displays the contents of the routing table of the node where it is run.

- `netstat -anP tcp`

  Provides a listing of all the current TCP connections for a system, including the local and remote IP address and TCP port. Use this command to check what network connections are in place and the state of each TCP connection.

Known Issues with Load-Balancing Using Central Dispatch

Problem: You cannot connect to the Siebel Server and get a TCP Communication error in the web browser, and you get an error similar to the following error in your swenesxxx.log file:

```
2021 2003-07-01 22:19:35 0000-00-00 00:00:00 -0500 00000000 001
001f 0001 09 siebel 9962 1 /siebel/wbp03/eappweb/log/swenes996

GenericLog      GenericError    1       2003-04-23 22:19:35
(smconn.cpp 5(335) err=1801201 sys=145) NET-01201: Internal:
connect

() failed: Connection timed out
```

Solution: Check the value for the `RESONATE_ROOT` in your siebenv.sh. This should be set to the actual Resonate directory; for example, `/Export/Home/Resonate/.`

Problem: Unexpected timeouts occur. Login works fine, but session is reset with error message after at least 10 minutes of inactivity when used again. eApps log displays the error message `Send message failed`. Most users do not experience any problems. No errors appear in the Siebel Server log.

Solution: Verify the values of the `HTTP_INACTIVE_CONN_TIMEOUT` and `SERVER_INACTIVE_CONN_TIMEOUT` environment variables are set correctly on every machine in the Central Dispatch site.

Problem: Siebel Server startup or shutdown takes a long time. Intermittent error messages in the Siebel Server log file—`Resonate command timed out`.

Solution: Check to make sure that the `Heartbeat Interval` and `# of Heartbeat until down` parameters are set to 1 and 100 respectively. You can use the Dispatch Manager to set these parameters. If the issue persists, contact Siebel Technical Support.

Problem: The browser displays the error message `Server busy or not available`, the eApps log displays the message `sisnapi handshake failed`, and no connections are shown in the Dispatch Manager.

Solution: The VIP assigned to the Central Dispatch site may be in use by another machine.

To verify, stop the Central Dispatch site and try to ping the VIP. If the VIP can be pinged then the VIP is not unique. Assign a VIP that is unique to the Central Dispatch site.

Problem: The browser displays the error message `Server busy or not available`, the eApps log displays the message `sisnapi handshake failed`, short-lived connections are shown in the Dispatch Manager, and no errors are shown in the Siebel Server log.

Solution: Verify that the VIP is the same in all of the following three places: the Enterprise VIP registered with the Siebel Gateway Name Server, the VIP used in the eApps.cfg file, and the VIP for the Central Dispatch site. (Use Central Dispatch Manager to check the VIP configured for Central Dispatch. Check the enterprise parameter EnterpriseVIP.)

Problem: The browser displays the error message, `Server busy or not available`, the eApps log displays the message `sisnapi handshake failed`, and there are connections shown in the Dispatch Manager.

- **Solution a:** Check the IP address of the VIP and Central Dispatch scheduler nodes in the Central Dispatch Manager. If they are in different subnets, reassign them to the same subnet. If the Secondary Scheduler is on a different subnet, this problem can occur when the Primary Scheduler becomes unavailable.
- **Solution b:** If you are using the Compaq teaming NIC, make sure you have followed the instructions in Tech Note 321.
- **Solution c:** Make sure that you are using a supported network interface card. For a list of the supported network interface cards, see SupportWeb.

Problem: The browser displays the error message `Server busy or not available`, the eApps log displays the message `sisnapi handshake failed`, connection reset by peer, and short-lived connections are shown in the Dispatch Manager. This occurs because scheduling rules are not created for a load-balanced Siebel Server as expected, and Central Dispatch does not route any load to that server.

Solution: This occurs when the Siebel Server is not part of the Load Balanced Siebel environment. Verify that the `UseSCB` server-level parameter is set to `true`. If the parameter is set to `false`, the Siebel Server will not register scheduling rules with Central Dispatch and connections into that server will fail.

Problem: One server does not receive any sessions. This presentation of the problem occurs when there are multiple Siebel Servers in the Enterprise.

Solution: Set the server level parameter `UseSCB` is set to true. If the parameter is set to false, the Siebel Server will not register scheduling rules with Central Dispatch and connections into that server will fail.

Problem: The browser displays the error message `Server busy or not available`, the eApps log displays the message `sisnapi handshake failed`, connection reset by peer, short-lived connections are shown in the Dispatch Manager, and the Siebel Server log shows the error message `invalid password`.

Solution a: Check the setting for the Resonate Admin user in the Enterprise environment variables, and that the password is registered with the Siebel Server. If the password is not set correctly, the Siebel Server cannot register scheduling rules with the Central Dispatch site, and attempts to connect are refused.

Solution b: This problem can also occur when domain users are locked out by exceeding allowable attempts to login with an invalid password.

Problem: On Solaris, after Central Dispatch and Siebel Server installation, Central Dispatch site appears to be running, but Siebel Server startup fails with error message `HOST NOT FOUND`.

Solution: Check that the network configuration file (`/etc/hosts`) has the reference `loghost` correctly mapped to the IP address of the network gateway (network gateway, not Siebel Gateway Name Server).

Installing in Unattended or Console Modes 4

This chapter provides instructions for installing without the installation GUI, using unattended mode or console mode. Complete instructions for installing using the GUI are provided in subsequent chapters.

For performance or security reasons, you may choose to install the Siebel eBusiness Applications servers using one of these modes instead of the installation GUI.

- Use unattended installation mode if user input of configuration parameters during the installation is not allowed in your environment.
- Use console installation mode when installing over a WAN. This is because installing over a WAN can use large amounts of bandwidth resulting in undesirable lag times during installation. The console installation provides a text-only interface that lets you bypass the Java-based GUI.
- Use console installation mode if you are using a Windows machine to connect and install onto a UNIX machine. Third-party terminal emulators are not supported due to issues with unexpected exiting and poor performance during installation.

Unattended Installation

In some secure computing environments, user input of installation and configuration parameters during the installation is not allowed. In this case, you can run the installation process in *unattended* installation mode.

Unattended installation prepackages the required installation and configuration parameters so that you need only execute a command to perform it. However, unattended installation provides no feedback or error notification. Therefore, it is vital that you test your configuration in a development environment before system-wide deployment in a production environment.

Unattended installation consists of two parts:

- "Editing the siebel.ini Files for Unattended Installation" on page 90
- "Running the Installation From the Command Line" on page 101

Editing the siebel.ini Files for Unattended Installation

Before starting installation, you must modify two versions of the `siebel.ini` file. The first `siebel.ini` is for the main installer which is located within the same directory as the `setup`*`UNIX_OS`* executable (where *`UNIX_OS`* is the UNIX platform you are using). The second `siebel.ini` is used for configuration and is located under the configuration subdirectory; for example, `ses/gtwysrvrcfg/siebel.ini`.

To modify the siebel.ini file for the main installer

1. Using a text editor, modify the `siebel.ini` file for the appropriate product. The locations for each `siebel.ini` file are listed below.

   NOTE: You should pull a fresh copy of each `siebel.ini` to modify and save it in a unique location to avoid overwriting the original file.

   - Siebel Enterprise Server—`unix_server_`*`UNIX_OS`*`_ses_base/ses/siebel.ini`.
   - Siebel Web Server Extensions—`unix_server_`*`UNIX_OS`*`_eapp_lep/eappweb/siebel.ini`.
   - Siebel CORBA Object Manager—`unix_server_`*`UNIX_OS`*`_corba_lep/corbaom/siebel.ini`.

   CAUTION: Make sure that you have entered the correct values, because your entries are not validated by the installer.

2. Locate the `[Dialog]` section and set all keys, except the ones starting with *uninst* to *`no`*. This will disable all prompts.

3. Locate the `[Defaults.*]` section and set the values appropriate to your installation:

   a. Set those products you want to install under `[Defaults.ProductSelection].`

   b. Set the languages you want to install under `[Defaults.LanguageSelection]`; for example, if you want to install French then add the following line to this section.

      FRA = yes

4. Locate the `[Defaults.Unix] section` and set the RootDirectory to the product installation root directory.

5. Locate the `[RunAfter.Unix]` section and update the relevant subsections as follows:

   a. `[ConfigGtwysrvr]`

      ```
      Condition  =  $(GatewaySelected)=yes
      Execute = ./gtwysrvrcfg/$(Launcher)

      Arg = -is:javahome $(JavaHome) -args
      SS_SETUP_INI=gtwysrvrcfg_siebel.ini
      StringTable=$(UninstallPath)/table.txt
      ```

      where:

      gtwysrvrcfg_siebel.ini is the full path under which you want the installer to locate this configuration file.

   b. `[ConfigSiebsrvr]`

      ```
      Condition  =  $(SiebelSelected)= yes

      Execute  =  ./siebsrvrcfg/$(Launcher)
      ```

```
Arg = -is:javahome $(JavaHome) -args
SS_SETUP_INI=siebsrvrcfg_siebel.ini
StringTable=$(UninstallPath)/table.txt
```

where:

siebsrvrcfg_siebel.ini is the full path under which you want the installer to locate this configuration file.

CAUTION: Do not modify the `table.txt` file.

c `[ConfigUnixEappweb]`

```
Condition = yes

Execute = ./config/$(Launcher)

Arg = -is:javahome $(JavaHome) -args
SS_SETUP_INI=eapp_config_siebel.ini
StringTable=$(UninstallPath)/table.txt
```

Where:

eapp_config_siebel.ini is the full path to the SWSE siebel.ini configuration file.

d `[ConfigUnixCorbaOM]`

```
Condition = yes

Execute = ./config/$(Launcher)

Arg = -is:javahome $(JavaHome) -args
SS_SETUP_INI=<Corba_OM_siebel.ini>
StringTable=$(UninstallPath)/table.txt
```

Where:

Corba_OM_siebel.ini is the full path to the CORBA OM siebel.ini configuration file.

NOTE: For more details on parameters in the configuration files, see "Configuration siebel.ini File Parameter Values" on page 94.

To modify the siebel.ini file for individual server configuration

1 Using a text editor, modify the appropriate `siebel.ini` file or files as listed below:

NOTE: You should pull a fresh copy of each `siebel.ini` to modify and save it in a unique location to avoid overwriting the original file.

- `ses/gtwysrvrcfg`— Siebel Gateway configuration; for example, `unix_server_`*`UNIX_OS`*`_ses_base/ses/gtwysrvrcfg/siebel.ini`.
- `ses/siebsrvrcfg`—Siebel Server configuration; for example, `unix_server_`*`UNIX_OS`*`_ses_base/ses/siebsrvrcfg/siebel.ini`.
- `eappweb/config`—Siebel Web Server Extension configuration; for example, `unix_server_`*`UNIX_OS`*`_eapp_lep/eappweb/config/siebel.ini`.
- `corbaom/config`—Siebel CORBA Object Manager configuration; for example, `unix_server_`*`UNIX_OS`*`_corba_lep/corbaom/config/siebel.ini`.

CAUTION: Make sure that you have entered the correct values, because your entries cannot be validated by the installer.

2 Set all keys in the `[Dialog.Config]` section to `no`.

3 Set all values in `[Defaults.Config]` to the appropriate values.

The PrimaryLanguage should be set to the three-letter language code for the desired language. For example, you should add PrimaryLanguage = ENU line for American English. Language codes are listed at the end of the siebel.ini file.

NOTE: Refer to "Configuration siebel.ini File Parameter Values" on page 94 for configuration values.

Configuration siebel.ini File Parameter Values

This section illustrates the valid parameter values to choose from when you modify the `siebel.ini` files. Some of the settings, including component groups shown in Table 9, require numeric input.

Sample gtwysrvrcfg/siebel.ini

```
[Defaults.Config]
PrimaryLanguage=enu
GatewayPort=2320
Autostart=Y
```

Table 9. Siebel Gateway Component Keys

Component Key	Required?
Primary Language	Y
Gateway Port	Y
Autostart	Y

Sample siebsrvrcfg/siebel.ini

```
[Defaults.Config]
PrimaryLanguage=enu
OMLanguages=enu
GatewayName=smth70a033
GatewayPort=2320
ResonateInstalled=N
ResonateRoot=
ComponentGroups=1;13;18;19;20;21;22;23;25;26
ReviewEnterprise=
EnterpriseName=siebel
FileSystem=/vol1/export/home/siebel/fs
EnterpriseDescription=
ResonateUser=
ResonatePassword=
ResonateVIP=
SynchMgrPort=
DataMatching=3
DatabaseType=2
DatabaseNameConnectString=db2x2026
TableOwner=siebel
```

```
DatabaseUsername=sadmin
DatabasePassword=db2
ChartServer=smqalcn38
ChartImageFormat=1
EncryptionType=1
ServerName=smth70a033
ServerDescription=
Db2Directory=/export/home/db2
SynchMgrPortOverride=N
OverridePortNum=
SearchServer=3
FulcrumDirectory=
RemoteSearchServerHostname=
RemoteSearchServerPortNumber=
Autostart=Y
StartServer=N
```

Table 10 displays the Siebel Server component keys in the `siebel.ini` file and the required conditions. For example, if `ResonateInstalled=Y`, then the `ResonateRoot` must be specified.

Table 10. Siebel Server Component Keys

Component Key	Required?	Condition
`PrimaryLanguage`	Y	
`GatewayPort`	Y	
`ResonateInstalled`	Y	
`ResonateRoot`	N	ResonateInstalled = Y
`ComponentGroups`	N	
`ReviewEnterprise`	N	If installing a second server with the same Enterprise
`EnterpriseName`	Y	
`FileSystem`	Y	
`EnterpriseDescription`	N	
`ResonateUser`	N	ResonateInstalled = Y
`ResonatePassword`	N	ResonateInstalled = Y

Table 10. Siebel Server Component Keys

ResonateVIP	N	ResonateInstalled = Y
SynchMgrPort	N	Default = 40400
DataMatching	Y	
DatabaseType	Y	
DatabaseNameConnectString	Y	
TableOwner	Y	
DatabaseUsername	Y	
DatabasePassword	Y	
ChartServer	N	
ChartImageFormat	Y	
EncryptionType	Y	
ServerName	Y	
ServerDescription	N	
Db2Directory	Y	
SynchMgrPortOverride	Y	SynchMgrPortOverride = Y
OverridePortNum	N	
SearchServer	Y	
FulcrumDirectory	N	SearchServer = 1
RemoteSearchServerHostname	N	SearchServer = 2
RemoteSearchServerPortNumber	N	SearchServer = 2
Autostart	Y	
StartServer	Y	

Component Group Mapping

The following list provides the number corresponding to each Siebel Server component group within the `siebel.ini` file:

```
1 = Assignment Management
2 = Communications Management
3 = Content Center
4 = Sales Credit Assignment
5 = Dun and Bradstreet
6 = Data Quality
7 = Siebel Dynamic Commerce
8 = Enterprise Application Integration
9 = Siebel eDocuments
10  = Field Service
11  = Incentive Compensation
12  = Marketing Object Manager
13  = Marketing Server
14  = Siebel Remote
15  = Siebel Anywhere
16  = Siebel To Siebel Connector
17  = SAP Connector
18  = Oracle Connector
19 = Siebel Sales
20 = Sales Hierarchy Service
21 = Siebel eChannel
22 = Siebel Call Center
23 = Siebel Core Reference Application
24 = Siebel ISS
25 = Siebel Employee Relationship Management
26 = Siebel Wireless
27 = Workflow Management
28 = Handheld Synchronization
29 = Forecast Service Management
30 = Siebel eAutomotive
31 = Siebel Life Sciences
32 = Siebel CME
33 = Siebel eHospitality
34 = Siebel Industry Marketing
35 = Siebel eConsumerSector
36 = Handheld Synchronization SIA
37 = Siebel Financial Services
38 = Siebel Public Sector
39 = Siebel Customer Information File
40 = Siebel Homeland Security
```

DataMatching Mapping

```
1 = Siebel Data Quality Matching
2 = Siebel Data Quality Connector
3 = None
```

DatabaseType Mapping

```
1 = Oracle
2 = DB2 UDB for Unix and Windows
```

ChartImageFormat Mapping

```
1 = png
2 = gif
3 = jpeg
```

EncryptionType Mapping

```
1 = NONE
2 = RSA
```

SearchServer Mapping

```
1 = Configure this server as a Search Server
2 = Configure this server to point to a Remote Search Server
3 = Skip
```

Sample eappweb/config/siebel.ini

```
[Defaults.Config]
PrimaryLanguage=enu
WebServerDirectory=/usr/IBMIHS
ResonateInstalled=N
GatewayName=smth70a033
GatewayVIPName=
GatewayPort=2320
EnterpriseName=siebel
ServerName=sieb_serv
CompressionType=1
EncryptionType=1
ErrorLevel=5
WebServerHttpPort=80
WebServerHttpsPort=443
WebUpdateKey=test
EmployeeUsername=sadmin
EmployeePassword=db2
ContactUsername=guestcst
ContactPassword=ldap
RestartWebServer=N
```

Table 11 displays the Siebel Web Server Extensions (SWSE) component keys in the `siebel.ini` file and the required conditions. If the key is required, then there must be a corresponding value in the `siebel.ini` file.

Table 11. SWSE Component Keys

Component Key	Required?	Condition
PrimaryLanguage	Y	
WebServerDirectory	Y	
ResonateInstalled	Y	`ResonateRoot` must be specified
GatewayName	Y	
GatewayVIPName	N	ResonateInstalled = Y
GatewayPort	Y	
EnterpriseName	Y	
ServerName	Y	
CompressionType	Y	
EncryptionType	Y	
ErrorLevel	Y	
WebServerHttpPort	Y	
WebServerHttpsPort	Y	
WebUpdateKey	Y	
EmployeeUsername	Y	
EmployeePassword	Y	
ContactUsername	Y	
ContactPassword	Y	
RestartWebServer	Y	

CompressionType Mapping

```
1 = none
2 = pkware
3 = zlib
```

EncryptionType Mapping

```
1 = none
2 = RSA
```

ErrorLevel Mapping

```
1 = errors
2 = fatal
3 = warning
4 = warning
5 = info
6 = details
```

Sample for corbaom/config/siebel.ini

```
[Defaults.Config]
PrimaryLanguage=enu
DatabaseType=2
Db2ConnectString=db2x2026
OracleConnectString=
TableOwner=siebel

Keys Condition Table:
Require? Condition
PrimaryLanguage Y
DatabaseType Y
Db2ConnectString N DatabaseType = 1
OracleConnectString N DatabaseType = 2
TableOwner Y

DatabaseType Mapping:
1 = Oracle
2 = DB2 UDB for Unix and Windows
```

Optional Components

Anything not specifically defined in `[Module.OS]` is a required component.

```
Siebel\SRVR         = Siebel Server Executable
Siebel\SRVRCOMPS    = Siebel Server Core Components
Siebel\SIEBREMOTE   = Siebel Remote Components
```

```
Siebel\SIEBSRVR     = Siebel Object Manager
Siebel\FIELDSVC     = Siebel Field Service Components
Siebel SDQCONNECTOR = Siebel Data Quality Connector

Db                  = Siebel Database support files
Db\FILES            = Siebel Sample Database
Db\DB2UDB           = IBM DB2 UDB for Unix and Windows
Db\ORACLE           = Oracle Database Enterprise Edition
```

Running the Installation From the Command Line

After you have modified the appropriate `siebel.ini` files in the previous procedure, run the unattended installation from the command line. However, before running an unattended installation, be aware of the following guidelines:

- Any data entry error that you make during installation will be captured in the installation log file `log.txt`, located in the `$SIEBEL_ROOT` directory. Consider using the `-log logfile` command to create an additional setup initialization log file.
- All CDs should be mounted or you must have a staging point to use for installation. For more details on creating staging point, see "Creating a Staging Point" on page 64.

NOTE: These instructions are for installing the Siebel Enterprise Server using unattended mode. Installation in unattended mode of other server products is similar.

To install in unattended mode

- Navigate to the `/ses` directory and enter:

```
setup.UNIX_OS -args SS_SETUP_INI=main installer siebel.ini path
LanguageDir=language directory parent
```

NOTE: If you created a staging point as described under "Creating a Staging Point" on page 64, omit the code line: `LanguageDir=language directory parent`.

where:

UNIX_OS = your UNIX operating system, such as Solaris, HP-UX, or AIX

main installer siebel.ini path is the full path to the main installer siebel.ini file.

language directory parent is the full path to the directory immediately above the language directory on the language CD. This elimiates the prompt for CD swapping.

For example:

```
setupUNIX_OS -args SS_SETUP_INI=seaUNIX_OS_srvr_ses_base/ses/
siebel.ini LanguageDir=seaUNIX_OS_srvr_ses_lang/ses
```

Console-Mode Installation

Installing the Siebel Server and related server products over a WAN can use large amounts of bandwidth resulting in undesirable lag times in installation. The Siebel console installation provides a text-only installation that lets you bypass the Java-based GUI for faster performance.

The prompts for the console mode of installation are identical to those of the Java-based GUI. However, because the console mode of installation does not provide GUI controls, such as a Browse button, you must substitute appropriate command-line responses instead of the displayed GUI responses, such as *Click Next*.

Console-mode installation consists of two parts:

- "Editing the siebel.ini Files for Console-Mode Installation" on page 103.
- "Installing in Console Mode" on page 104.

Editing the siebel.ini Files for Console-Mode Installation

Before starting installation, you must disable portions of `siebel.ini` file. After you are done with installation, launch the configuration in console mode from the configuration subdirectory (such as `ses/gtwysrvrcfg`).

To modify the siebel.ini file

1. Using a text editor, modify the appropriate `siebel.ini` file or files as listed below:

   NOTE: You should pull a fresh copy of each `siebel.ini` to modify and save it in a unique location to avoid overwriting the original file.

   - Siebel Enterprise Server installer; for example, `unix_server_`*`UNIX_OS`*`_ses_base/ses/siebel.ini`.
   - Siebel Web Server Extensions installer; for example, `unix_server_`*`UNIX_OS`*`_eapp_lep/eappweb/siebel.ini`.
   - CORBA Object Manager installer; for example, `unix_server_`*`UNIX_OS`*`_corba_lep/corbaom/siebel.ini`.

2. Locate `[RunAfter.Unix]` section and change it as follows:

   - `Siebel Enterprise Server`

     ConfigGtwysrvr = no

     ConfigSiebsrvr = no

   - `Siebel Web Server Extensions`

     ConfigUnixEappweb = no

   - `CORBA Object Manager`

     ConfigUnixCorbaOM = no

   NOTE: Setting all keys to *no* disables all configurations.

Installing in Console Mode

The following procedures describe installation of the Siebel application in console mode.

NOTE: Because there is no Browse button in console mode, you should note the paths for both your base CD and your language CD installation executables, so that you can enter this information when prompted (for example, `/cdrom/unix_server_`*`UNIX_OS`*`_ses_lang/ses/language/setupUNIX_OS`).

To install in console mode

1. Insert the *`UNIX_OS`* *Server Programs; for example, for SES insert the Siebel Enterprise Server, Base* CD-ROM into the CD-ROM drive of the server.

   where:

   `UNIX_OS` = your UNIX operating system, such as Solaris, HP-UX, or AIX.

   NOTE: The volume label for the CD is `sea`*`UNIX_OS`* | base or *`language`*; it may not be required, depending on how you access the CD-ROM.

2. Navigate to the main installer directory. For example, `/cdrom/unix_server_`*`UNIX_OS`*`_ses_base/ses`. (For the path for specific servers, refer to the later chapters in this guide that describe installation through the GUI.)
3. Execute the following command:

```
./setupUNIX_OS -is:javaconsole -console -args SS_SETUP_INI = main
installer siebel.ini path
```

where:

UNIX_OS is your UNIX operating system, such as Solaris, HP-UX, or AIX.

main installer siebel.ini path is the full path to the main installer siebel.ini file that you edited in "Editing the siebel.ini Files for Console-Mode Installation" on page 103.

NOTE: You can append additional flags to your command. For more information, see "Additional Flags for Installation Commands" on page 106.

The console mode installation script appears. Refer to the installation chapters later in this guide for reference regarding the definition of specific prompts.

4 You can launch the configuration in console mode or GUI mode. To launch it in console mode, see "Configuring in Console Mode" on page 105.

Configuring in Console Mode

After installation, you need to start the configuration utility.

To run the configuration utility

1 Launch the configuration in console mode from the appropriate configuration subdirectory on the CD-ROM (or network image).

- Gateway— *Base SES CD*/ses/gtwysrvrcfg
- Siebel Server— *Base SES CD*/ses/siebsrvrcfg
- Siebel Web Server Extension— *Base siebel web server extension CD*/eappweb/config
- CORBA OM— *Base CORBA OM CD*/corbaom/config

2 Enter the following command on a single input line:

```
setupUNIX_OS -is:javaconsole -console -args
StringTable=SIEBEL_ROOT/_uninst/table.txt
```

Combining Console-Mode and Unattended-Mode Installation

You may want to combine configuration in console mode and unattended mode. To do this, you must provide default values in `/gtwysrvrcfg/siebel.ini` and `/siebsrvrcfg/siebel.ini`. For more details, see "Configuration siebel.ini File Parameter Values" on page 94.

To launch the configuration you need to modify the `[ConfigGtwysrvr]`and `[ConfigSiebsrvr]` sections of the main siebel.ini for the `ses` installer as follows:

```
[ConfigGtwysrvr]

Condition= $(GatewaySelected)=yes

Execute  = ./gtwysrvrcfg/$Launcher

Arg      = -is:javahome $(JavaHome) -is:javaconsole -console -
args SS_SETUP_INI=your_gtwysrvrcfg_siebel.ini
StringTable=$(UninstallPath)/table.txt


[ConfigSiebsrvr]

Condition = $(SiebelSelected)=yes

Execute= ./siebsrvrcfg/$Launcher

Arg= -is:javahome $(JavaHome) -is:javaconsole -console -args
SS_SETUP_INI=your_siebsrvrcfg_siebel.ini
StringTable=$(UninstallPath)/table.txt
```

Additional Flags for Installation Commands

You may optionally append any of the following flags to your installation command:

- -is:log *logfile*

  where:

  logfile is the full path name and the name of the file to be generated (for example, /usr/tmp/gateway.log)

  This flag generates an additional log file. The logging information in the file is limited to initialization errors, such as JVM. Use this flag for debugging or for troubleshooting when you cannot invoke the installation process.

  NOTE: The default log file that records status errors during installation is created in the *$SIEBEL_ROOT* directory.

- -is:javaconsole -*console*

  This flag generates a script-type (non-GUI) installation. This method is most useful when installing over a WAN. For more information, see "Console-Mode Installation" on page 102.

- -is:tempdir *temp directory_location*

  This flag directs the installer to the location to install the temporary files. For example, if the default directory (/var/tmp for Solaris and HP-UX or /tmp for AIX) does not have the required free space, you can designate another location.

5 Installing the Siebel Gateway

This chapter explains how to install and configure the Siebel Gateway under UNIX, using the GUI installation method. For alternative installation methods, refer to Chapter 4, "Installing in Unattended or Console Modes."

For detailed information on the role of the Siebel Gateway within the Siebel environment, see Chapter 1, "Siebel Server Installation Overview."

The installation and configuration of the Siebel Gateway consists of several tasks. Table 12 illustrates the sequence of steps.

Table 12. Siebel Gateway Installation and Configuration Tasks

Who Performs It?	Task
System Administrator	**1** Verify Siebel Gateway installation prerequisites. See "Verifying Siebel Gateway Prerequisites" on page 110. **2** (Optional) Install redundant disk arrays. See "Installing a Redundant Disk Array on the Siebel Gateway" on page 112. **3** Install and configure the Siebel Gateway. See "Installing and Configuring the Siebel Gateway" on page 113. **4** Review the software installation. See "Reviewing the Software Installation for Siebel Gateway" on page 121. **5** Configure the Siebel Gateway to start automatically. See "Configuring the Siebel Gateway for Automatic Start" on page 124.

Verifying Siebel Gateway Prerequisites

Review the following guidelines before installing the Siebel Gateway.

CAUTION: Do not install Siebel eBusiness Applications without first reviewing the *System Requirements and Supported Platforms* documentation.

- If the machine on which you are installing the Siebel Gateway will also support a Siebel Server, you must also have all the required third-party products installed for that component, as listed in *System Requirements and Supported Platforms*.

  NOTE: On UNIX, the Siebel Gateway and Siebel Server are both installed into a common root, `$SIEBEL_ROOT`.

- If you will be clustering servers, plan your use of clustering or redundant disk arrays (RAID) to configure against a single point of failure. Do not enable Central Dispatch on a Siebel Gateway if you will be clustering it.
- Each machine that will support a Siebel Server must have TCP/IP network connectivity to the machine on which the Siebel Gateway will be installed. Verify network connectivity between all such machines, using the `ping` utility.
- Verify that the network adapter is correctly configured to support full duplex Ethernet. Verify the following parameters.
  - RJ45 Port Link Status: up
  - Media Speed Selected: 100 Mbps Full Duplex
  - Media Speed Running: 100 Mbps Full Duplex
- Install the Siebel Gateway only once for each Siebel Enterprise Server. It is recommended that you only install one Siebel Gateway on a machine. If needed, multiple Siebel Enterprises can be supported by a single Siebel Gateway Name Server. If multiple Siebel Gateway Name servers are installed on a single machine, they should be installed on different ports.

- Verify that the network names of the servers that will support the Siebel Gateway and all Siebel Servers are recorded in Appendix A, "Deployment Planning Worksheets." You will need this information later when installing the Siebel Servers and Siebel clients.
- Make sure that the login running the installer has write permissions to `/tmp` (AIX default temporary directory) or `/var/tmp` (Solaris and HP-UX default temporary directory), as appropriate to your UNIX operating system.
- Verify that you have the following temporary disk space available to the installer.

AIX	130 MB
Solaris	90 MB
HP-UX	210 MB

- **AIX installations only**
  - If the `set-group-id` flag is used, make sure that the installer ID is a member of the group that owns the parent (Siebel) directory.
  - Verify that the login running the installer has permission to run `slibclean`.
  - You must install `X11` filesets, because these are not installed by default.
- **HP-UX installations only**
  - If the environmental variable `LANG` is set to a directory name that is a symbolic link, the Java installer for Siebel Server will fail. You must reset any existing `LANG` variable to the actual directory that the symbolic link represents.

NOTE: The `LANG` variable cannot be set to `univ.utf8`. This causes the installer to fail.

- You cannot install additional products into a root directory after applying a patch.

NOTE: Using third-party terminal emulators is not supported when connecting from a Windows machine to a UNIX server to perform a GUI installation. Running the GUI installer from one UNIX machine to install on another UNIX machine or on the local UNIX machine is supported. If you need to use a Windows machine to perform a UNIX installation, telnet to the UNIX server and install in console mode. For details on installing in console mode, see "Console-Mode Installation" on page 102.

Installing a Redundant Disk Array on the Siebel Gateway

The Siebel Gateway maintains the configuration information for all Siebel Servers in all the Siebel Enterprise Servers it manages. Loss of the Siebel Gateway due to a disk crash could bring your Siebel software to a halt while the system is restored. Similarly, the Siebel Server temporarily stores transaction files synchronized to and from Siebel Remote mobile users. The loss of these files will result in the need to re-extract the database for all affected mobile users.

It is strongly recommended that you install a redundant disk array (RAID) or some other type of redundant disk configuration on your Siebel Gateway and on those Siebel Servers that will support the Siebel Remote product. (Siebel Remote supports synchronization of data between Siebel Mobile Web Clients and the Siebel Database Server through a dial-up connection.) A redundant disk configuration substantially reduces the risk of data loss and minimizes the difficulty of error recovery for both types of server. Refer to your hardware vendor's documentation and your operating system documentation for instructions on how to install and configure a redundant disk array.

Installing and Configuring the Siebel Gateway

This section provides instructions for installing and starting the Siebel Gateway as part of standard Siebel Enterprise Server deployment.

NOTE: In general, it is recommended the installation be conducted by a non-root user for simpler administration and maintenance. However, root access is required if you plan to configure the Gateway Server or Siebel Server for auto-start.

You must use *only one CD-ROM drive* for the entire installation, swapping CDs as needed. In other words, do not use a second CD-ROM drive for additional CDs.

To avoid CD swapping, copy all installation files, including the required language files, to a common installation directory within your system. For more information, see "Creating a Staging Point" on page 64.

NOTE: The following procedure is for installing the base product. For patch installation instructions, refer to *Maintenance Release Guide* provided with the patch.

To install the Siebel Gateway

1 Install the *UNIX_OS Server Programs, Siebel Enterprise Server Base* CD-ROM onto the network

where:

UNIX_OS is your UNIX operating system, such as Solaris, HP-UX, or AIX.

NOTE: The volume label for the CD is `sea`*`UNIX_OS`*`sesbase` or `sea`*`UNIX_OS`*`siabase` (for Siebel Industry Applications), as appropriate to the Siebel applications you are installing. This step may not be required, depending on how you access the CD-ROM.

As a convenience, you may also want at this time install the `sea`*`UNIX_OS`*`ses`*`language`* or `sea`*`UNIX_OS`*`sia`*`language`* (for Siebel Industry Applications) CD-ROM, as applicable, into the drive of the machine on which you want to install the Siebel Gateway.

If you choose to copy the CD contents to a directory location on a remote file system, you should hard mount the remote host through NFS, as follows:

```
mount host:/directory_on_host /mount_point
```

where:

host is the machine name.

directory_on_host is the directory to be mounted.

mount_point is the name you want to use for the mount point.

2 Log on to the server, using the Siebel service owner account that you recorded in the copy you made earlier of Appendix A, "Deployment Planning Worksheets."

CAUTION: If a Siebel Gateway is installed by root, then only root can stop and start the server. Use a Siebel account that has the correct authorizations. For more information on creating Siebel accounts, see "Creating the Siebel Service Owner Account" on page 60.

3 Navigate to the `/ses` directory from the CD mount point and open a new shell.

4 Unset any Siebel-specific environment variables. To view current environment variable settings, enter `env` in the shell window.

5 To start the Siebel Gateway installation process, enter the following command, appending any desired flag described in "Additional Flags for Installation Commands" on page 106.

```
./setupUNIX_OS
```

where:

UNIX_OS is your UNIX operating system, such as Solaris, HP-UX, or AIX.

The Installer Welcome screen appears.

NOTE: Using third-party terminal emulators are not supported when connecting from a Windows machine to a UNIX server to perform a GUI installation. Running the GUI installer from one UNIX machine to install on another UNIX machine or on the local UNIX machine is supported. If you need to use a Windows machine to perform a UNIX installation, telnet to the UNIX server and install in console mode. For details on installing in console mode, see "Console-Mode Installation" on page 102.

---

6 Click Next.

If you have installed other Siebel components on the same machine, the installer displays the message that an existing installation has been found.

7 Depending on whether you are installing your Siebel Gateway files for the first time or adding a new language to an existing instance, take the appropriate action, then click Next.

- To install the Siebel Enterprise Server software in a new instance, select None as the default and click Next. Proceed to Step 8.

- To install a new language in an existing instance, select the displayed instance and click Next. Proceed to Step 13.

  See also "Installing Multiple Siebel Language Packs on the Siebel Server" on page 149 for important additional information on this topic.

The Installer Path screen appears.

8. Enter the fully qualified path to the installation directory that you recorded in Appendix A, "Deployment Planning Worksheets," or click Browse to choose a different directory.

   NOTE: The directory name should be standard alphanumeric characters, including the underscore. No other characters or spaces are allowed.

9. Click Next.

   The Installer Product Selection screen appears.

10. Select the Siebel Gateway Server. Other components can be installed later.

    NOTE: If you choose to install additional products at the same time as the Siebel Gateway, it will not be necessary to enter some of the same information, such as language choice, twice. For this reason the installation steps described in Chapter 6, "Installing the Siebel Server" will not appear in the exact order as described.

11. Click Next.

    NOTE: When installing on AIX, the Next button may not be immediately visible. If the Next button is not visible, resize the GUI.

    The Setup Type screen appears.

12 Choose the type of installation to perform from the following options; then click Next to continue.

NOTE: For the Siebel Gateway, all three options install the same components.

- **Typical**
- **Compact**
- **Custom**

CAUTION: If you select more than one licensed component at once, the Siebel Enterprise Server (SES) Installer and the Siebel Software Configuration Wizard prompt you for the installation parameters of each component individually and in the sequence required. You should verify that you have all of the preconfiguration steps completed before you begin, or the install may fail.

The Install Selected Language Packs screen appears.

13 Choose the language or languages to be installed and click Next.

All servers are installed with at least one language. Additional languages can be installed at a later date, if desired.

When installing languages at a later date, you must also reinstall any patches that may have been run on the directory.

NOTE: In a Unicode-enabled database environment, you can install any of the available Siebel language packs. In a non-Unicode database environment, you must consider the correlation of the language packs you want to install and the characters supported by your database code page. For example, in a Western European code page database, you can only install Western European language packs such as English, French, Spanish, or German language packs. And in a Japanese code page database, you can only install Japanese or English language packs.

For a list of supported code pages and encoding strategies, see *System Requirements and Supported Platforms*.

The Installer Verification screen appears.

14 To copy the files for the selected product into the installation location, click Next.

The Installer Progress screen appears.

After the files have been copied to the installation location, a warning screen appears with the following message.

```
Setup did not find the Siebel Language Code language pack on
the current media. Please insert the CD containing the Siebel
Language Code and select setupUNIX_OS from the Siebel Language
Code folder.
```

15 If you have not yet done this, insert the appropriate language CD-ROM into the drive of the machine onto which you are installing the Siebel Gateway, and navigate to the location of the selected language (`ses/`*`language`*`/`), where *`language`* stands for the Siebel language code.

NOTE: The volume label for the CD is either `sea`*`UNIX_OS`*`ses`*`language`* or `sia`*`UNIX_OS`*`ses`*`language`*, as appropriate. If you are installing Siebel Industry Applications, you will use `sia`*`UNIX_OS`*`ses`*`language.`*

Clear the filter dialog box, if needed, to be sure that you can see the appropriate files.

16 Select `setup`*`UNIX_OS`* and click OK.

The Installer Language Pack Progress screen appears.

When installation of all the language files has been completed, the installer prompts you again for the base CD-ROM.

```
Please re-insert the base CD and browse to the setupUNIX_OS
file to enable setup to continue.
```

17 Navigate again to the base CD mount point on the network, locate `ses/setup`*`UNIX_OS`*`,` and click OK.

Which screen appears next depends on whether you are installing one or multiple languages.

- If you are installing more than one language, the Primary Language screen appears. Proceed to Step 18.
- If you are installing only one language, the Gateway Port screen appears. Proceed to Step 19.

18 Select the primary(base) language and click Next.

NOTE: This is the primary(base) language for your enterprise. The language in which you want your Siebel Server to run and which you normally want to read messages.

The Gateway Port screen appears.

19 Accept the default Gateway Port Number or change it, then click Next.

The Installer Autostart screen appears.

CAUTION: If you will be operating this Siebel Gateway as part of a cluster, *do not use Autostart.* The Siebel Gateway service must always be started and stopped through the corresponding cluster scripts or agents.

20 Choose whether the Siebel Gateway should autostart on restart, or not, and then click Next.

NOTE: This setting programs the Siebel Gateway to accept additional configuration instructions to start automatically each time the host machine restarts. To actually implement automatic startup, you must also complete the configuration steps described in "Configuring the Siebel Gateway for Automatic Start" on page 124.

The Installer Configuration Verification screen appears.

21 Verify the Siebel Gateway settings and click Next to accept, or Back to go back and change a setting.

CAUTION: Your installation process will vary from the procedure shown here. For example, you may have elected to install the Siebel Gateway and the Siebel Server at the same time. In this instance, the installer will skip from this point in the Gateway installation to Step 20 in the "To install the Siebel Server" procedure on page 143.

22 To complete the installation, click Finish.

To verify the installation

1 Navigate to the `$SIEBEL_ROOT/gtwysrvr` directory and source the Siebel environmental variables. Choose the appropriate command for your UNIX shell or its variant.

Korn or Bourne shell:

```
. ./siebenv.sh
```

TIP: Make sure there is a space between the initial period and `./siebenv.sh`.

C-shell:

```
source siebenv.csh
```

2 Navigate to the `$SIEBEL_ROOT/bin`.

3 Using an editor, like `vi`, open the `base.txt` file. It lists the type of installation just completed, for example:

```
7.x.x [15049] LANG_INDEPENDENT full release
```

or

```
7.x.x [15049] ENU full release
```

where:

`ENU` = U.S. English.

Post-Installation Tasks for Siebel Gateway

Perform the following tasks after running the Siebel Gateway installation program:

- "Reviewing the Software Installation for Siebel Gateway" on page 121
- "Configuring the Siebel Gateway for Automatic Start" on page 124 (optional)

Reviewing the Software Installation for Siebel Gateway

After the installation and configuration has concluded, the following Siebel Gateway files should now exist under the $*SIEBEL_ROOT* directory you specified during the installation.

```
_uninst/
gtwysrvr/

   admin/
   base.txt
   bin/
   dbtempl/
   enu.txt
   input/
   install/_script
   lib/
   locale/
   log/
   objects/
   output/
   siebenv.csh
   siebenv.sh
   sqltempl/
   sys/
   temp/
   upgrade/
```

```
upgrade.log
```

_uninst. Contains the files required to uninstall the program. It is even with the top-level directory and contains uninstall information for all products installed into this SIEBEL_SERVER root.

gtwysrvr. Top-level directory.

admin. The `.dat` file used for Gateway configuration and template files used for scripts that control the Gateway.

bin. Siebel Gateway start script, stop scripts, and executables.

dbtempl. Dictionary and local database files required by Siebel Remote for regional users and mobile Web users.

input. Contains file related to Siebel Remote.

install. Contains files used by the UNIX installer.

lib. Gateway program library files.

locale. Language-specific files and scripts. These are not configurable.

log. Name Server logs.

objects. Empty directory. When you install the Siebel Server into the same root directory, that installation procedure populates this directory with a *`language`* subdirectory (such as `enu` for U.S. English) with a corresponding Siebel repository file (`siebel.srf`).

output. Files related to Siebel Remote.

siebenv.csh. C shell variant of the Siebel script for setting environment variables on the server.

siebenv.sh. Bourne shell and Korn shell variant of the Siebel script for setting environment variables on the server.

sqltemp. Empty directory. When you install the Siebel Server into the same root directory, that installation procedure populates this directory with `sql` files, containing `sql` templates that can be used to create `sql` statements the Siebel Server will use to perform specific database operations.

sys. Files used by the Siebel Gateway and server control utilities. These files are not visible or editable by users.

temp. Stores temporary files generated by the Siebel Gateway.

upgrade. Files and scripts related to version upgrades of Siebel eBusiness Applications. Also holds temporary, backup, and state log files used during an upgrade.

upgrade.log. Upgrade logs.

Starting the Siebel Gateway

If, during configuration, you selected manual start for the Siebel Gateway, you must start it every time you install and configure a new Siebel Server component and every time you operate a Siebel eBusiness application.

To verify that the Siebel Gateway has started

- Navigate to the `$SIEBEL_ROOT/gtwysrvr` directory and source the Siebel environmental variables. Choose the appropriate command for your UNIX shell or its variant.

  Korn or Bourne shell:

  ```
  . ./siebenv.sh
  ```

  TIP: Make sure there is a space between the initial period and `./siebenv.sh`.

  C-shell:

  ```
  source siebenv.csh
  ```

  This sets the Siebel environment variables and path information required to use Siebel utilities.

  TIP: To configure the Siebel environment shell script to source automatically whenever a Siebel administrator logs on, specify the shell as the default for administrator accounts. Then, add this command to the startup file for the administrator's account.

To verify that the Siebel Gateway is running

- Enter `list_ns`

  You should receive a response similar to this:

  ```
  started at Fri Oct 19 15:33:26 2001, pid: 4024, autostart: yes
  ```

  If the Siebel Gateway is stopped, do the following:

  - Execute the `start_ns` command to start the Siebel Gateway.
  - Execute `list_ns` to verify that it is operating correctly.

Configuring the Siebel Gateway for Automatic Start

If, during installation, you elected automatic restart of the Siebel Gateway, you must follow the procedure below to enable it.

To configure the Siebel Gateway to start automatically on Solaris and HP-UX

1. Log on as root to the machine on which the Siebel Gateway was installed.
2. Copy the file `siebel_server` to the `/etc/init.d` directory as shown below:

   ```
   cp $SIEBEL_ROOT/bin/siebel_server /etc/init.d
   ```

   where:

   $*SIEBEL_ROOT* is the full path to the Siebel root directory.

3. Using any text editor, edit `/etc/init.d/siebel_server`. Replace $*SIEBEL_GATEWAY_ROOT* with the actual path to the Siebel Gateway installation directory.
4. Set the appropriate permissions by executing the following command:

   ```
   chmod 744 /etc/init.d/siebel_server
   ```

5. Create a hard link to `/etc/rc3.d/S72siebel` from `/etc/init.d/siebel_server` by executing the following command.

   ```
   ln /etc/init.d/siebel_server /etc/rc3.d/S72siebel
   ```

6 Create a hard link to `/etc/rc0.d/K32siebel` from `/etc/init.d/siebel_server` by executing the command:

```
ln /etc/init.d/siebel_server /etc/rc0.d/K32siebel
```

To configure the Siebel Gateway to start automatically on AIX

1 Log on as root to the machine on which the Siebel Gateway was installed.

2 Execute the following command on a single line:

```
mkitab "start_gateway:2:once:su - $USER -c \"$SIEBEL_ROOT/bin/
siebel_server start\""
```

where:

$*USER* = The user name of the Siebel administrator.

$*SIEBEL_ROOT* = The installation directory for the Siebel Gateway.

3 Verify if the file `/etc/rc.shutdown` exists. If it does not exist, create it and change the permissions:

```
touch /etc/rc.shutdown
chmod 744 /etc/rc.shutdown
```

4 Edit the file `/etc/rc.shutdown` add the following command to it:

```
su - $USER -c "$SIEBEL_ROOT/bin/siebel_server stop"
```

where:

$*USER* is the user name of the Siebel administrator.

$*SIEBEL_ROOT* is the installation directory for the Siebel Gateway.

5 Save and close the file.

You have now enabled the Siebel Gateway to start automatically when you restart your server, and to stop automatically when you shut down.

NOTE: Remember that the Siebel Gateway must be the first service to start up and the last to be shut down among all the servers in the Siebel Enterprise served by that Siebel Gateway.

You are now ready to proceed with the Siebel Server installation.

Troubleshooting Siebel Gateway Installation

This section describes potential errors that can result from a faulty installation or configuration.

Problem: The Siebel Gateway does not start.

Solution a: If you find that you are not able to start the Siebel Gateway, you may not have privileges as the Siebel Service Owner. Review the instructions in "Creating Siebel Accounts" on page 59, or edit the `start_ns` script to set the `Resonate_ROOT` directory to a location where Central Dispatch will not be found.

NOTE: If you cannot start the Siebel Gateway, you will not be able to configure and start the Siebel Server you are installing in the next chapter for this Enterprise.

Solution b: Failure to start the Siebel Gateway can be caused by a number of problems including, but not limited to, an incorrectly set *`LD_LIBRARY_PATH`* (Solaris), *`SHLIB_PATH`* (HP-UX), or *`LIBPATH`* (AIX), incorrect permissions set on shared libraries, or missing shared libraries. You can use the `ldd` command to show missing libraries. You should also check the `siebelenv.csh` and `siebelenv.sh` and be sure that `$`*`SIEBEL_ROOT`*`/lib` is set before *`LD_LIBRARY_PATH`* (Solaris), *`SHLIB_PATH`* (HP-UX), or *`LIBPATH`* (AIX). Also make sure that `$`*`SIEBEL_ROOT`*`/lib` is included. If there are library conflicts, set `$`*`SIEBEL_ROOT`*`/lib` as the first element of the shared library path environment variable.

Problem: The Siebel Gateway terminates and produces a core dump for no apparent reason when you try to start it.

Solution: If Central Dispatch is installed on the Siebel Gateway machine, but Central Dispatch is not running, Siebel programs will fail. Edit the `start_ns` script by changing the default for the `Resonate_ROOT` environment variable to a directory that does not contain a Central Dispatch installation (for example, `/dev`).

6 Installing the Siebel Server

This chapter describes the tasks involved in installing the Siebel Server software on a supported UNIX server and in configuring the Siebel Enterprise Server. For alternative installation methods, refer to Chapter 4, "Installing in Unattended or Console Modes."

For detailed information on the role of the Siebel Server within the Siebel environment, see Chapter 1, "Siebel Server Installation Overview."

The installation and configuration of the Siebel Server consists of several tasks. Table 13 illustrates the sequence of steps.

Table 13. Server Installation and Configuration Tasks

Who Performs It?	Task
System Administrator	**1** Verify that the Siebel Gateway has started. See "Starting the Siebel Gateway" on page 123. **2** Verify Siebel Server installation prerequisites are met. See "Siebel Server Deployment Considerations" on page 129. **3** Verify which UTF-8 locales are installed on your servers. See "Verifying the Language Locales on Your Server" on page 130.
Database Administrator	**1** Install your RDBMS instance. See "Installing Your Database Instance" on page 130.

Table 13. Server Installation and Configuration Tasks

Who Performs It?	Task
System Administrator	**1** Configure any database-specific connectivity software. See "Configuring Database Connectivity" on page 131. **2** Verify network connectivity. See "Verifying Network Connectivity" on page 131. **3** Verify that Central Dispatch was installed on each Siebel Server on which you want to enable load balancing. See "Verifying Central Dispatch Installation" on page 133. **4** Install Hummingbird SearchServer. See "Installing Hummingbird SearchServer" on page 133. **5** Create a Siebel File System directory for each database tableowner. See "Installation Tasks for the Siebel Server" on page 133. **6** Install the Siebel Server. See "Installing and Configuring the Siebel Server" on page 136. **7** Review the software installation. See "Reviewing the Software Installation for Siebel Server" on page 151.
System Administrator	**1** (Optional) Create additional Siebel Servers within a Siebel Enterprise Server. See "Creating Additional Servers Within an Existing Siebel Enterprise Server" on page 154. **2** Verify the Siebel Server ODBC data source. See "Verifying the Siebel Server ODBC Data Source" on page 157. **3** Even if you have already indicated during installation that you want the Siebel Server to start automatically, see "Configuring the Siebel Server for Automatic Start" on page 162. **4** Review and set any applicable environment variables. See "Managing Environment Variables" on page 166. **5** Establish network connectivity for mobile users. See "Establishing Network Connectivity for Mobile Users" on page 169. **6** Synchronize server component groups. See "Synchronizing Siebel Server Component Groups" on page 169. **7** Set the locale of your server to match your database. See "Setting Database Client Locale for Siebel Server" on page 169. **8** Disable any language-specific Siebel Object Managers you do not intend to use on a given Siebel Server. See "Disabling Language-Specific Siebel Object Managers" on page 171.

Siebel Server Deployment Considerations

- Depending on the requirements of your business, you may deploy one or more Siebel Enterprise Servers. For information on multiple Siebel Enterprise Servers, see "Siebel Enterprise Server Overview" on page 28.
- The Siebel Server installation process must be completed on each server that will operate a Siebel Server. Appendix A, "Deployment Planning Worksheets" provides guidance on determining the number and configuration of Siebel Servers. Be sure that all machines on which the Siebel Server will be installed meet the hardware and software requirements detailed in *System Requirements and Supported Platforms*. The SES Installer verifies not only that you have the required software for installation of Siebel 7.x, but that the software is the version level necessary.
- Every Siebel Server supported by a given Siebel Database Server must belong to the same Siebel Enterprise Server, regardless of the platform on which the Siebel Servers are operating. When you install the first Siebel Server within a Siebel Enterprise Server, you will be automatically prompted to configure the Siebel Enterprise Server. Additional Siebel Servers installed in that Siebel Enterprise Server automatically inherit its parameters.
- The Siebel Server software is installed only once on each machine. However, you may configure as many Siebel Servers as you want to operate from that single software installation by using the `config_server` script. See "Creating Additional Servers Within an Existing Siebel Enterprise Server" on page 154.
- You only can choose which component groups to enable on the first Siebel Server, and the subsequent Siebel Servers will inherit the same component groups. For this reason, you should enable all the component groups that are planned for your environment, and then disable specific component groups on each individual Siebel Server that does not need that particular component group. If you forget to enable a component group during the Configuration Wizard, you will need to enable it manually later on using Server Administration.

Clustering Prerequisites for the Siebel Server

If you will be operating a Siebel Server as part of a cluster, you must install it on a clustered disk drive in the same resource group that the Siebel Server Process resource will run. Siebel Server has been certified to run in a clustered environment using VERITAS or IBM HACMP. For information about clustering, see Chapter 7, "Clustering Your Siebel Deployment for Failover."

The Siebel installer allows you to install all servers at once for which you have a license. If you will be operating certain servers as part of a cluster, you must install and configure the Siebel Gateway and the Siebel Server separately.

Verifying the Language Locales on Your Server

Make sure that you have UTF-8 locales for all the languages you are installing on the machines on which you intend to deploy Siebel Server. Siebel 7.5.x log and configuration files use UTF-8 with Byte Order Mark as the default encoding. If these files contain any non-ASCII characters, proper viewing and editing will require a UTF-8 locale. Some software applications may also require a UTF-8 locale.

To verify which UTF-8 locales are present

- Enter the following command:

```
locale -a | grep UTF-8
```

CAUTION: The language locale can affect how time is displayed. For more information, see *Global Deployment Guide*.

Installing Your Database Instance

If this has not already been done, ask your database administrator to install the RDBMS your site will be using. During installation of the Siebel Server, you must have an established connection to that database for installation to be successful. For information about installing the Siebel Database, see Chapter 9, "Installing the Siebel Database Server for DB2 UDB," or Chapter 11, "Installing the Siebel Database Server for Oracle," as appropriate.

Configuring Database Connectivity

Oracle. Verify that the Oracle Net8, (or Net9, as appropriate to your database), database connectivity software is installed on each server, according to the Oracle documentation. For database connectivity software requirements, see *System Requirements and Supported Platforms*.

Prior to installing the Siebel Server and Siebel Enterprise Server, you must use the Oracle Net8, (or Net9, as appropriate to your database) Easy Configuration utility to define a database alias with the proper connection information for your Siebel Database Server, if you have not already done so. Record the connect string in Appendix A, "Deployment Planning Worksheets." You will specify this connect string when installing the Siebel Server.

NOTE: Siebel applications support the Oracle 32-bit client, but if you have installed the Oracle 64-bit client on your Siebel Server, you need to add $*ORACLE_HOME*/lib32 instead of $*ORACLE_HOME*/lib to your LD_LIBRARY_PATH (Solaris), SHLIB_PATH (HP-UX), or LIBPATH (AIX).

DB2 UDB. Define a database alias with the proper connection information for your database. This alias will be the connect string used when installing the Siebel Server. Record the connect string in Appendix A, "Deployment Planning Worksheets." You will specify this connect string when installing the Siebel Server.

Use either the DB2 Client Configuration Assistant or the Command Line Processor (CLP) to define your database alias. For more information, see *DB2 Universal Database for UNIX* or *IBM DB2 Universal Database Command Reference*.

Verifying Network Connectivity

You must verify that your servers are properly connected to the network and—through the network—to each other.

To verify network connectivity between the Siebel Server, Siebel Gateway, Siebel Database Server, and Siebel File System

1. Verify network connectivity to the Siebel Gateway and Siebel Database Server from the Siebel Server, using the test utility for your network type.

   For TCP/IP networks, use the `ping` utility to verify network connectivity to the Siebel Database Server and Siebel Gateway.

2. Verify connectivity to the Siebel Database Server:

   - **Oracle.** Use the `tnsping` utility and Net8, (or Net9, as appropriate to your database), database alias from a Command Prompt window to make sure that you can connect to the database, using the network connect string that you defined in the previous step.
   - **DB2 UDB.** Open a db2 shell to make sure that you can connect to your database, as follows:

   a. Enter:

      ```
      db2 connect to database_alias user user_ID using password
      ```

      where:

      user_ID is a valid user name on DB2, and *password* is the appropriate password for that user name.

      If your connection is valid, you should see a message that looks like the following:

      ```
      The connection test is successful

      Database Server      = DB2/AIX|Solaris x.x.x
      SQL authorization ID = SADMIN
      Database alias        = NAME
      ```

      If your connection is not valid, verify your configuration.

   b. To close the connection, type `db2 terminate`.

      The Siebel Server installation will create its own ODBC data source.

3. Provide a network connection from the Siebel Server to the file system.

4 Verify that the file system directory is visible and that the Siebel service owner or Resonate manager account can copy files to and from it.

Network connectivity to the Siebel Gateway, Siebel Database Server, and file system is now verified.

Verifying Central Dispatch Installation

Verify that Central Dispatch has been installed on this machine under any of the following conditions.

You intend to deploy one of the following:

- Load-balancing on this Siebel Server
- Load-balancing on multiple Web servers (even if the load-balancing is not done by Central Dispatch)

An exception to the previously described deployment rules occurs if you will be operating multiple servers as part of a cluster. In this case, you may not install Central Dispatch on machines you will be clustering. Instead, you will install Central Dispatch on servers you reserve for performing load balancing.

Installing Hummingbird SearchServer

Any Siebel Server can also be configured to execute searching or can be pointed to another remote SearchServer to handle search execution tasks. If you want a server to function as a SearchServer, you must install Hummingbird SearchServer from the *AIX|Solaris|HP-UX Server Ancillary Programs (CD 2 of 2)* CD-ROM before installing the Siebel Server on that machine.

For more information about Hummingbird SearchServer, see *Siebel Search Administration Guide*.

Installation Tasks for the Siebel Server

Installation tasks consist of the following:

- "Pre-Installation Checklist for the Siebel Server" on page 135

- "Installing and Configuring the Siebel Server" on page 136

You must run the Siebel Server installation program for each Siebel Server that will be installed on a machine. This program performs the following tasks:

- Sets up its own directory structure.
- Copies the software to the disk.
- Installs the Siebel Server components.
- Configures the Siebel Enterprise Server (if required) and the Siebel Server.

  The term Siebel Enterprise Server is used by Siebel Systems to refer to a group of Siebel Servers that can be administered and configured as a unit rather than individually. It does not refer to a separate computer or a separate program.

  Therefore, when you install the first Siebel Server in your deployment, you automatically configure the Siebel Enterprise Server. All subsequent Siebel Servers installed that connect to the same database must be installed under this Siebel Enterprise Server.

NOTE: If you intend to configure multiple Siebel Enterprise Servers on to a single machine in your development or test environment, you should issue a command similar to `unsetenv $SIEBEL_ROOT` (where `$SIEBEL_ROOT` is the environment variable for the installation root directory) to specify a unique `$SIEBEL_ROOT` for each Siebel Enterprise Server. Configuring multiple Siebel Enterprise Servers on to a single machine is not supported for production environment.

Pre-Installation Checklist for the Siebel Server

Make sure you perform the following tasks before installing the Siebel Server:

- Make sure that you have installed the Siebel Gateway and that it is running. If you installed the Siebel Gateway immediately prior to installing the Siebel Server, it is already running. (To manually start the Gateway, see "Starting the Siebel Gateway" on page 123.)

  NOTE: You will be unable to complete the Siebel Server installation if the Siebel Gateway is not running.

- Any active Siebel Server process should be stopped with the exception of the Siebel Gateway.
- Make sure that you have already installed the appropriate version of all third-party software products required before you install the Siebel Server. Otherwise, the Required Software Components prompt appears. For more information, see *System Requirements and Supported Platforms*.
- Verify the following:
  - Confirm that the following temporary disk space is available to the installer:

AIX	130 MB
Solaris	90 MB
HP-UX	210 MB

  - Make sure the parent directory where Siebel eBusiness Applications are installed has no `set-group-id` flag. Alternatively, if the `set-group-id` flag is used, be sure that the login ID of the person performing installation has the same group id as the person who owns the parent directory. Being a member of the group that owns the parent (Siebel) directory is not enough.

- On AIX only, verify that the login ID performing installation has permission to run `slibclean`.

CAUTION: If you have Central Dispatch running on the same machine on which you are also configuring a Siebel Server, but you do not want to configure the Siebel Server for use with Central Dispatch, you must set the `UseSCB` server parameter to `FALSE` while the Siebel Gateway is running. Otherwise, the Siebel Server will not start properly. For information on how to set server parameters, see *Siebel Server Administration Guide*.

Installing and Configuring the Siebel Server

When adding a new product to an existing instance, for example, when adding a Siebel Server to an instance that has a Siebel Gateway already present, you must install all the same language packs that you did for the previous product installed within that instance. In general, it is recommended that the installation be conducted by a non-root user for simpler administration and maintenance. However, root access is required if you plan to configure the Gateway Server or Siebel Server for auto-start.

NOTE: The following procedure is for installing the base product. For patch installation instructions, refer to the *Maintenance Release Guide* provided with the patch.

To install the Siebel Server

1 Install the *UNIX_OS Server Programs, Siebel Enterprise Server Base* CD-ROM onto the network

where:

UNIX_OS = your UNIX operating system, such as Solaris, HP-UX, or AIX.

NOTE: The volume label for the CD is sea*UNIX_OS*sesbase or sea*UNIX_OS*siabase, as appropriate to the Siebel applications you are installing; it may not be required, depending on how you access the CD-ROM. If you are installing Siebel Industry Applications, you will use sea*UNIX_OS*siabase.

As a convenience, you may also want at this time to install the sea*UNIX_OS*ses*language* or sea*UNIX_OS*sia*language* CD ROM, as applicable, into the drive of the machine on which you want to install the Siebel Server.

NOTE: If you are installing Siebel Industry Applications, install sea*UNIX_OS*sia*language*.

---

2 Log on to the server, using the Siebel service owner account that you recorded in the copy you made earlier of Appendix A, "Deployment Planning Worksheets."

NOTE: If a Siebel Server is installed by root, then only root can stop and start the server. Use a Siebel account that has the correct authorizations. For more information on creating Siebel accounts, see "Creating the Siebel Service Owner Account" on page 60.

---

3 Navigate to the /ses directory from the CD mount point and open a new shell.

4 Unset any Siebel-specific environment variables. To view current environment variable settings, enter env in the shell window.

5 Verify the directories and permissions to those directories into which you will install the product. You must have write and execute permission.

6 To start the Siebel Server installation process, enter the following command, appending any valid flag to it, as described in "Additional Flags for Installation Commands" on page 106.

```
./setup<UNIX_OS>
```

The Installer Welcome screen appears.

NOTE: Using third-party terminal emulators is not supported when connecting from a Windows machine to a UNIX server to perform a GUI installation. Running the GUI installer from one UNIX machine to install on another UNIX machine or on the local UNIX machine is supported. If you need to use a Windows machine to perform a UNIX installation, telnet to the UNIX server and install in console mode. For details on installing in console mode, see "Console-Mode Installation" on page 102.

7 Click Next.

If you have installed other Siebel components on the same machine, the installer displays the message that an existing installation has been found.

8 Depending on whether you are installing your Siebel Server files for the first time or adding a new language to an existing instance, take the appropriate action, then click Next:

- To install the server software in a new instance, or to install the Siebel Server in the same location where you previously installed Siebel Gateway, select None as the default and click Next. Proceed to Step 9.
- To install a new language in an existing instance, select the displayed instance and click Next. Proceed to Step 13.

  See also "Installing Multiple Siebel Language Packs on the Siebel Server" on page 149 for important additional information on this topic.

The Installer Path screen appears.

9 Enter the fully qualified path to the installation directory and click Next or choose a different directory by taking the following steps:

a Click Browse and navigate to the installation directory.

b Record the fully qualified location that you recorded in Appendix A, "Deployment Planning Worksheets."

NOTE: The directory name should be standard alphanumeric characters, including the underscore. No other characters or spaces are allowed.

10 Click Next.

The Installer Product Selection screen appears.

NOTE: When installing on AIX, the Next button may not be immediately visible. If the Next button is not visible, resize the GUI.

11 Choose the server products you want to install, and for which you are licensed, and click Next.

CAUTION: Some products installed through the All function have pre-installation requirements, which if not met, will make their installation pointless. Before selecting the All function, review the installation instructions for each component you plan to install. For instructions on installing Siebel Analytics, see *Siebel Analytics Installation and Administration Guide*.

NOTE: If you install all licensed components at once, the SES Installer and the Siebel Software Configuration Wizard will prompt you later for the installation parameters of each component individually and in the sequence required.

The Setup Type screen appears.

12 Choose the type of installation to perform from the following options and click Next to continue:

- **Typical.** This setup option will install all Siebel Server components.
- **Compact.** This selection is invalid for the Siebel Server.

- **Custom.** This setup option lets you customize your installation by choosing the specific components you want to install.

  The Custom option allows you to deselect any specific server components (listed as follows) that you do not want to install:

  - Siebel Server Executables
  - Siebel Server Core Components
  - Siebel Remote Components
  - Siebel Object Manager
  - Siebel Field Service Components
  - Siebel Data Quality Connector

  CAUTION: Do not deselect Siebel Server Executables, Siebel Server Core Components, or Siebel Object Manager or your Siebel eBusiness Applications will fail.

The Installer Language Selection screen appears.

13 Choose the language or languages to install and click Next.

All servers are installed with at least one (base) language. Additional languages can be installed at a later date, if desired. For more information on multilingual deployments, see *Global Deployment Guide* on the *Siebel Bookshelf*.

When installing languages at a later date, you must also reinstall any patches that have been run on the directory.

NOTE: In a Unicode-enabled database environment, you can install any of the available Siebel language packs. In a non-Unicode database environment, you must consider the correlation of the language packs you want to install and the characters supported by your database code page. For example, in a Western European code page database, you can only install Western European language packs such as English, French, Spanish, or German language packs. And in a Japanese code page database, you can only install Japanese or English language packs.

For a list of supported code pages and encoding strategies, see *System Requirements and Supported Platforms*.

The Installer eBriefing screen appears.

14 Choose which, if any, of the eBriefing or eContact products licensed by your organization and click Next.

CAUTION: If you choose eBriefing and eContact Services, a license agreement screen appears. If you reject the license agreement, the Configuration Wizard will exit.

The Installer Verification screen appears.

15 Verify the products to be installed, the path to the installation location, the size of the installation, and click Next.

The installer proceeds to install the specified files.

After all Siebel Server files have been installed, a dialog box appears:

```
Setup did not find the Siebel Language Code language pack on
the current media. Please insert the Siebel Language Code
language pack CD and select setupUNIX_OS.
```

16 If you have not yet done this, insert the appropriate language CD-ROM into the drive of the machine onto which you are installing the Siebel Gateway, and navigate to the location of the selected language (`ses/language/`), where *`language`* stands for the Siebel language code.

NOTE: The volume label for the CD is either `sea`*`UNIX_OS`*`ses`*`language`* or `sia`*`UNIX_OS`*`ses`*`language`*, as appropriate. If you are installing Siebel Industry Applications, use the CD with the `sia`*`UNIX_OS`*`ses`*`language`* volume label.

Clear the filter dialog box, if needed, to be sure that you can see the appropriate files.

If you choose to copy the CD contents to a directory location on the file system, you should mount the host directly, as in the following example:

```
mount host:/directory_on_host /mount_point
```

where:

`host` is the machine name.

`directory_on_host` is the directory to be mounted.

`mount_point` is the name you want to use for the mount point.

17 Select `setup`*`UNIX_OS`* and click OK.

When installation of all the language files has been completed, the installer prompts you again for the Base CD-ROM:

```
Please re-insert the base CD and browse to the "setupUNIX_OS"
file to enable setup to continue.
```

18 Navigate again to the base CD mount point on the network, locate `ses/setup`*`UNIX_OS`*`,` and click OK.

Which screen appears next depends on whether you are installing one or multiple languages.

- If you are installing more than one language, the Primary Language screen appears. Proceed to Step 19.
- If you are installing only one language, the Address and Port screen appears. Proceed to Step 20.

19 Select the primary(base) language and click Next.

NOTE: This is the primary(base) language for your enterprise. The language in which you want your Siebel Server to run and which you normally want to read messages.

The Address and Port screen appears.

20 Add the address and port number of the Siebel Gateway and click Next.

The Resonate screen appears.

21 Specify whether Central Dispatch is installed, and then click Next:

- If Central Dispatch is already installed, select Yes. Proceed to Step 22.
- If Central Dispatch is not installed and you do not plan to install it, select No. Proceed to Step 23.
- If Central Dispatch is not installed—and you want to install it—terminate the Siebel Server installation. To install Central Dispatch, see Chapter 3, "Implementing Load-Balancing with Central Dispatch." For important information about the relationship between Central Dispatch and connection brokering in Siebel eBusiness Applications, see Chapter 1, "Siebel Server Installation Overview," and Chapter 5, "Installing the Siebel Gateway."

NOTE: Do not install Central Dispatch on clustered servers.

22 Enter the full path for the directory in which you installed Central Dispatch and click Next.

The Component Groups screen appears.

23 Choose the component groups that you would like automatically enabled at startup of the Siebel Server, and then click Next.

For a complete list of server component groups and their individual components, refer to Appendix B, "Enabling Server Components."

NOTE: If you want your Mobile Web Client users to synchronize with this Siebel Server, you must select Siebel Remote. Likewise, if you have purchased a license for any of the other eBusiness Applications modules listed below, you must select these now.

```
Assignment Management
Communications Management
Content Center

Dun and Bradstreet
Data Quality

Enterprise Application Integration
Field Service

Forecast Service Management
Handheld Synchronization
Incentive Compensation

Marketing Object Management
Marketing Server

Oracle Connector

SAP Connector
Sales Credit Assignment
Siebel Anywhere

Siebel Call Center
Siebel Dynamic Commerce

Siebel eChannel
Siebel eDocuments

Siebel Employee Relationship Management

Siebel ISS
Siebel Remote
```

```
Siebel Sales Hierarchy Service
Siebel to Siebel Connector
Siebel Wireless
Workflow Management
```

The Siebel Enterprise Name screen appears.

24 Enter the name of the new Siebel Enterprise and click Next.

The File System Path screen appears.

25 Enter the path to the Siebel File System and click Next.

The Description screen appears.

26 Add a brief description of the Siebel Enterprise and click Next.

The Synchronization Manager screen appears.

27 Accept the default port 40400 for the Synchronization Manager, or change it to a different value, and click Next.

The Data Matching screen appears.

28 Choose the software this installation uses for data matching and click Next.

The Database Selection screen appears.

29 Choose the database for this Enterprise and click Next.

The Database Configuration screen appears.

30 Enter the appropriate configuration information and click Next.

- **For Oracle**: Enter the connection string appropriate for connecting to the database.
- **For DB2**: Enter the name of the database.

The Database Table Owner screen appears.

31 For both Oracle and DB2, enter the table owner account ID, and click Next.

The Database User Name screen appears.

32 Add the database user name that Siebel will use for Autostart feature, version checking, and operation of the Synchronization Manager, and click Next.

The Database Password screen appears.

33 Enter and confirm the password to be used by the Siebel components to access the database and click Next.

The Chart Server Host screen appears.

34 Enter the name of the Chart Server Host and click Next.

NOTE: This value is not required for installation and can be added later using the Server Administration screen. For more information, see *Siebel Server Administration Guide*.

The Chart Server Graphics Format screen appears.

35 Choose the graphics format used by the Chart Server and click Next.

The Encryption screen appears.

36 Choose the type of encryption to be used by this Enterprise and click Next.

The screen that appears next depends on whether you are installing one or more languages:

- If you are installing more than one language, the Application Object Manager Components Languages screen appears. Proceed to Step 37.
- If you are installing only one language, the Siebel Server Name screen appears. Proceed to Step 38.

37 Select the languages for the Application Object Manager Components and click Next.

The Siebel Server Name screen appears.

38 Enter the name for the Siebel Server and click Next.

The Server Description screen appears.

39 Enter a description for the server and click Next.

Which screen appears next depends on the database you selected.

- **DB2.** The DB2 Client Directory screen appears. Proceed to Step 40.
- **Oracle.** The Synchronization Manager Static Port Override screen appears. Skip Step 40 and proceed to Step 41.

40 Enter the name of the directory in which the DB2 client is installed and click Next.

The Synchronization Manager Static Port Override screen appears.

41 Choose whether to override the synchronization manager port setting and click Next:

- If you selected Yes, proceed to Step 42.
- If you selected No, proceed to Step 43.

The Port Number Override screen appears.

42 Enter the port number for the override, if desired, and click Next.

The Search Server Configuration screen appears.

43 Choose to either configure this server as a search server, point to another search server, or skip it, and click Next.

- If you choose to configure this server as a search server, add the path to the Hummingbird software installation location.
- If you choose a remote search server, add the name and port number of the remote search server.

44 Indicate whether to enable Autostart functionality on this Siebel Server, and click Next.

CAUTION: If you will be operating this Siebel Server as part of a cluster, *do not click Yes* to enable Autostart functionality. The Siebel Server process must always be started and stopped through the corresponding cluster scripts or agents.

45 Indicate whether you want the Siebel Server to start following configuration and click Next.

46 Verify the Siebel Server settings and click Next to accept, or Back to go back and change a setting.

NOTE: For more information about Autostart feature, see "Configuring the Siebel Server for Automatic Start" on page 162 or *Siebel Server Administration Guide*.

---

47 To complete the installation, click Finish.

The Finish screen appears. Your installation is not complete if this screen is not displayed.

Installing Multiple Siebel Language Packs on the Siebel Server

If you will be installing multiple language versions of Siebel eBusiness Applications on your Siebel Servers, review the following configuration facts:

- You should run the Siebel Enterprise Server Software Configuration Wizard only once for each Siebel Server.
- When you configure a server, you have the option of creating Application Object Managers (AOMs) for every language that has been installed on that server.
- AOMs are created by the Configuration Wizard from a file (`omdefs.dat`) installed as part of the Siebel Language Packs. Therefore, AOMs can only be created for languages for which a language pack has been installed. However, AOMs for languages that have not been installed can be created manually either through the GUI or in command line mode, or by creating and importing a modified `omdefs.dat` file. For information about importing the omdef.dat, see *Global Deployment Guide*.
- When new AOM components are created, they are automatically assigned to every server and they will attempt to run on every server with the parent component group assigned and enabled. (For information about server component groups and their members, see Appendix B, "Enabling Server Components.")
- When you add a new server, it will inherit every component group and every AOM by default.

NOTE: If multiple languages are installed, you will be prompted for the primary(base) language. This is the primary(base) language for your enterprise. The language in which you want your Siebel Server to run and which you normally want to read messages.

For the deployment scenarios for installation of multiple languages on your Siebel Servers, see *Global Deployment Guide*.

Adding a New Product to an Existing Installation

When you add a new product to an existing installation (for example, when adding a Siebel Server to the same directory in which you have installed a Siebel Gateway), it is vital that you install the same set of languages for the second product.

Because both products share the same root directory, they are treated by the installer as one product in terms of patches and the addition of new languages. Therefore, if the set of languages is not identical for both, the last language you installed takes precedence.

NOTE: Once an installation directory is patched, a new product cannot be added to that directory. In that case, install the product in a new installation directory.

Post-Installation Tasks for Siebel Server

Perform the following tasks after running the Siebel Server installation program:

- "Reviewing the Software Installation for Siebel Server" on page 151
- "Creating Additional Servers Within an Existing Siebel Enterprise Server" on page 154
- "Verifying the Siebel Server ODBC Data Source" on page 157
- "Configuring the Siebel Server for Automatic Start" on page 162
- "Managing Environment Variables" on page 166
- "Synchronizing Siebel Server Component Groups" on page 169
- "Setting Database Client Locale for Siebel Server" on page 169
- "Disabling Language-Specific Siebel Object Managers" on page 171

Reviewing the Software Installation for Siebel Server

The following minimum directories and files are installed with the Siebel Server under the `$SIEBEL_ROOT` directory you specified during the installation:

admin/	isstempl/	nlp/	tclient/
bin/	IVSE.LIC	objects/	temp/
classes/	lex/	output/	upgrade/
dbtempl/	lib/	SDOC Connector/	upgrade.log
docking/	locale/	search/	webmaster/
help/	log/	sqltempl/	webtempl/
input/	messages/	SYBSsa70/	
install/	msgtempl/	SYBSsa80	
install_script	mw/	sys/	

admin. Contains files used by and editable by Siebel administrators.

bin. Binary file directory, containing language subdirectories related to language-specific server components. Also contains files used by Siebel Technical Support for installation workarounds.

dbtempl. Contains dictionary and local database files required by Siebel Remote for regional users and Mobile Web Client users.

docking. Contains transaction files, visibility, and other databases required by Siebel Remote.

enterprises. Files specific to a particular enterprise; contains a server subdirectory that contains files specific to a particular server (for example, log files).

FirstLogic. Contains configuration files related to Siebel Data Quality Matching and Data Cleansing.

help. Contains help files.

input. Contains files related to Siebel Remote.

install. Contains files used by the UNIX installer.

isstempl. Contains templates for Siebel Interactive Selling CDA application.

IVSE.LIC. Merant ODBC Driver license file.

lex. Language-related files.

lib. Library subdirectory. Contains the *.so files used in LDAP or other applications.

locale. Contains language-specific files.

log. Contains client and utility log files.

messages. Contains files related to eBriefings.

msgtempl. Stores language-specific files for mail merge.

mw. Contains MainWin binaries, libraries, and scripts that function as a Windows interface.

nlp. Natural-language processing files.

objects. Siebel Repository directory containing language-specific subdirectories related to language-specific repository files.

output. Contains files related to Siebel Remote.

reports. Contains the report executables used by Siebel Proposals to include reports in proposals.

search. Contains the indexes and scripts used to administer and execute Siebel Search and Siebel Advanced Search.

sqltempl. Contains SQL statements used by Siebel Server components. These files should not be modified.

SYBSsa70. Contains SQL Anywhere 7.0 engine and one ODBC driver.

sys. Contains files used by the Siebel Server and server control utilities that are not visible or editable by users.

tclient. Contains Web server-related files.

temp. Stores temporary files for use by the Siebel Server.

upgrade. Contains files and scripts related to version upgrades of Siebel eBusiness Applications. Also holds temporary, backup, and state log files used during an upgrade.

upgrade.log. Contains upgrade logs.

webmaster. Source of Web Publics file; synchronized to the Web server at run time.

webtempl. Contains Siebel Web templates with applets and views for any type of Web client.

A file called the `VPD.PROPERTIES` file is generated by the InstallShield and is used to record install information. The function of this file is similar to the registry on Windows. The installer uses data from this file to perform other tasks, such as version checking, applying patches, and adding language packs.

CAUTION: Make a copy of this file after every successful installation and do not modify or delete the `VPD.PROPERTIES` file without guidance from Technical Support.

Creating Additional Servers Within an Existing Siebel Enterprise Server

Before creating additional Siebel Servers, you should have installed and configured your Web server, and installed and configured the Siebel Web Server Extension (SWSE) plug-in, so that you can test the connection to the additional servers. For information about installing the SWSE, see Chapter 12, "Installing Siebel Web Server Extension."

Use the installer to create additional Siebel Servers in an existing Siebel Enterprise Server. You may also use this script to reconfigure existing Siebel Servers.

NOTE: Typically, you will only create multiple Siebel Servers on one machine for test or development purposes. It is strongly recommended that you create only one Siebel Server per machine in your production environment.

To configure an additional Siebel Server

1. Log on to the machine where the Siebel Server software is installed as the Siebel Service Owner.
2. In the shell window, enter `env` and verify that the environment variable *`SIEBEL_GATEWAY`* is set to the actual Gateway IP address or network name of the Siebel Gateway and *`SIEBEL_ROOT variable`* is set to the Siebel root directory.

   NOTE: The `config_server` script uses the values for these environment variables unless they are overridden by command-line arguments. For details on the switches you can use, see Step 4 on page 156.

   ---

3. If the Siebel environment variables are not set or are set incorrectly, navigate to the `$`*`SIEBEL_ROOT`*`/siebsrvr` directory and choose the appropriate command for your UNIX shell or its variant.

Korn or Bourne shell:

```
. ./siebenv.sh
```

NOTE: Make sure there is a space between the initial period and `./siebenv.sh`.

C-shell:

```
source siebenv.csh
```

CAUTION: Before sourcing `siebenv.sh`, make sure you have your database environment set up correctly. Specifically, verify that the *`LD_LIBRARY_PATH`* (Solaris), *`SHLIB_PATH`* (HP-UX), or *`LIBPATH`* (AIX) environment variable contains the full pathname for your database client library directory. If you do not set up the database environment properly, you will receive an error message.

4 Enter `config_server` to start the Siebel Enterprise Server configuration script.

The `config_server` script accepts the command-line flags described in the following table.

Flag	Parameter	Description
`-r`	*`siebel_root`*	(Required) The full path to the Siebel root directory. If the $*`SIEBEL_ROOT`* environment is set to the Siebel root directory, then there is no need to have the `-r` switch and value in your command line. If `-r` is not specified in your command line, the value of the $*`SIEBEL_ROOT`* environment variable is used, so you have to make sure this environment variable is set prior to executing the `server_config` without `-r` switch.
`-g`	*`siebel_gateway`*	(Required) The IP address or network name of the Siebel Gateway. If the $*`SIEBEL_GATEWAY`* environment is set to the IP address or network name of the Siebel Gateway, then there is no need to have the `-g` switch and value in your command line. If `-g` is not specified in your command line, the value of the $*`SIEBEL_GATEWAY`* environment variable is used, so you have to make sure this environment variable is set prior to executing the `server_config` without `-g` switch.
`-e`	*`enterprise_server`*	(Optional) The Siebel Enterprise Server in which to operate; if it is not specified and multiple Siebel Enterprise Servers are defined, you will be prompted with a list of the Siebel Enterprise Servers.
`-s`	*`siebel_server`*	(Optional) The existing Siebel Server to configure; if it is not specified, you will be prompted with a list of existing Siebel Servers and given the option of defining new Siebel Servers.

5 If you did not specify a Siebel Server with a command-line flag, you must choose an existing server to configure or select the option to create a new server:

- If you choose to edit an existing server, the `config_server` script prompts you with the current settings for the Siebel Server and allows you to modify them.
- If you choose to create a new Siebel Server, the `config_server` script prompts you to choose a new directory for the Siebel Server and to configure it.

NOTE: You cannot install your second Siebel Server in the same root directory as your first Siebel Server.

6 Repeat the steps described under "Installing and Configuring the Siebel Server" on page 136.

The `config_server` script will exit after it has completed the chosen task.

Creating New Siebel Servers and Siebel Remote

When installing multiple Siebel Servers on a single machine, only the first Siebel Server installed can be configured to support Siebel Remote.

If you need to enable Siebel Remote on each Siebel Server, put these Siebel Servers in separate directories (in other words, they should not share the same installation files).

Verifying the Siebel Server ODBC Data Source

The Siebel Server installation program automatically creates an ODBC system data source name (DSN) that it uses to connect to the Siebel Database Server.

To verify the ODBC data source for DB2 UDB

1 Open the `db2cli.ini` file in the *`$SIEBEL_HOME`* directory and make sure that there is a section called `[siebsrvr_`*`enterprise name`*`]`, where *`enterprise name`* is the name given the enterprise during installation; its default name is `siebel`.

2 Verify that the following two values are present in the section:

`dbalias = aliasname` (the database alias cataloged for your DB2 UDB database server)

`txnisolation = 1.`

If the section is missing, run the `configdb2` script in `$SIEBEL_HOME/bin` to set it, and then reverify that the section is present.

NOTE: It is not recommended to change the default settings created automatically with the ODBC data source.

3 Verify that the `SIEBEL_UNIXUNICODE_DB` environment variable is set to DB2.

CAUTION: If you are using Siebel Marketing, which requires simultaneous heterogeneous database connectivity, you need to set this variable to ORACLE regardless of your database platform.

4 Test the connection by navigating to `$SIEBEL_HOME/bin` and entering the command:

```
odbcsql /u user_name /p password /s ODBC DSNW
```

where:

ODBC DSN is the database connect string.

If you do not receive an error message, the ODBC connection is working.

To verify the ODBC data source for Oracle

1 Navigate to *$SIEBEL_HOME*`/sys/.odbc.ini.`

2 Locate the section of the file containing a reference to `ServerName` and `Driver.`

This section defines the ODBC DSN for Siebel Server. A sample section is represented below. The `ServerName, Driver, ColumnsAsChar,` and `ColumnSizeAsCharacter` parameters are the most critical for this procedure:

```
[SiebSrvr_enterprise name]
Description=Oracle901
ServerName=dvlsun6
Driver=$SIEBEL_HOME/lib/SEor818.so
ColumnsAsChar=1
ColumnSizeAsCharacter=1
```

The `ServerName` should be the Oracle connect string you entered while installing the Siebel Server. (To verify this connect string, run `sqlplus`.) The driver should point to `$`*`SIEBEL_HOME`*`/lib/SEor818`.so, allowing you to verify the existence of this file.

CAUTION: It is critical that `ColumnsAsChar` and `ColumnSizeAsCharacter` be set to `1` to make sure that ODBC Driver behaves correctly.

3 Verify that the `SIEBEL_UNIXUNICODE_DB` environment variable is set to ORACLE.

CAUTION: If you are using Siebel Marketing, which requires simultaneous heterogeneous database connectivity, you need to set this variable to ORACLE regardless of your database platform.

4 Test the connection by navigating to *`$SIEBEL_HOME`*`/bin` and entering the command:

`odbcsql /u` *`user_name`* `/p` *`password`* `/s` *`ODBC DSN`*

where:

`ODBC DSN` is the database connect string.

If you do not receive an error message, the ODBC connection is working.

NOTE: If your ODBC DSN is not working, the program exits with an error message. Refer to "Troubleshooting ODBC Data Source Connection" on page 160.

Troubleshooting ODBC Data Source Connection

If your connection test for the ODBC data source fails, follow the instructions below to research the cause.

DB2 UDB

Follow the instructions below to troubleshoot connection problems on Solaris, AIX, or HP-UX.

To troubleshoot a failed ODBC connection on Solaris, AIX, or HP-UX

1. Verify that the database alias entered as part of the Siebel Server configuration is valid, enter:

   ```
   db2 connect to Database Alias user username using password
   ```

   where:

   Database Alias is the alias of the database.

   username is your logon ID.

   password is your logon password.

   Also, refer to your copy of Appendix A, "Deployment Planning Worksheets."

2. If the database alias entered is correct, check the `ODBCINI` environment variable to verify that it was set by entering the following command:

   ```
   echo ${ODBCINI}
   ```

   The response should be the following:

   ```
   $SIEBEL_ROOT/sys/.odbc.ini
   ```

3. If the `ODBCINI` environment variable was set correctly, verify that the `.odbc.ini` file has a section similar to the following:

   ```
   [siebsrvr_enterprise]
   ServerName=Database Alias
   Driver=/instances/v7inst1/sqllib/lib/libdb2.so (Solaris and
   HP-UX)
   ```

   or

   ```
   Driver=/instances/v7inst1/sqllib/lib/libdb2.o (AIX)
   ```

4 Make sure that the library file referenced in the `Driver` key in Step 3 exists.

5 If the section in the `.odbc.ini file,` illustrated in Step 3, exists, verify that the *`LD_LIBRARY_PATH`* (Solaris), *`SHLIB_PATH`* (HP-UX), or *`LIBPATH`* (AIX) includes the path for the ODBC driver by entering the following command:

Solaris: `echo ${LD_LIBRARY_PATH}`

AIX: `echo ${LIBPATH}`

HP-UX: `echo $[SHLIB_PATH}`

6 If the response illustrated for your platform in Step 5 was correct and you are verifying a Unicode installation, make sure that the following environment variables are set in accordance with the recommendations from your database platform vendor. These variables should also be set in the `siebenv.csh` and `siebenv.sh` scripts.

```
SIEBEL_UNIXUNICODE_DB=DB2
```

Oracle

Complete the following instructions to troubleshoot connection problems on Solaris, AIX, and HP-UX.

NOTE: If you are unable to verify if your ODBC connection to your Oracle database is working, you should verify that the value of the environment variable `TNS_ADMIN` is the exact path of `tnsnames.ora`.

To troubleshoot a failed ODBC connection on Solaris, AIX, or HP-UX

1 Verify that the Oracle connect string entered as part of Siebel Server configuration is valid.

2 If the connect string entered is correct, check the `ODBCINI` environment variable to verify that it was set by entering the following command:

```
echo ${ODBCINI}
```

The response should be the following:

```
$SIEBEL_ROOT/sys/.odbc.ini
```

3 If the `ODBCINI` environment variable was correctly set, verify that the `.odbc.ini` file is valid by reviewing it for the presence of the following parameters:

```
[SiebSrvr_Enterprise Name]
ServerName=ora901
Driver=/$SIEBEL_ROOT/lib/SEor818.so
ColumnsAsChar=1
ColumnSizeAsCharacter=1
```

If these parameters are not present, the file is invalid.

4 If the `.odbc.ini` file is valid, verify that the library path includes the path for the ODBC driver on your platform by entering the following command:

Solaris: `echo ${LD_LIBRARY_PATH}`

AIX: `echo ${LIBPATH}`

HP-UX: `echo ${SHLIB_PATH}`

The response should be *`$SIEBEL_ROOT`*`/lib.`

NOTE: Siebel applications only support an Oracle 32-bit client for Oracle 8*i*. Therefore, if you have installed an Oracle 64-bit client on your Siebel Server, you need to add $*ORACLE_HOME*/lib32 instead of $*ORACLE_HOME*/lib to your LD_LIBRARY_PATH (Solaris), SHLIB_PATH (HP-UX), or LIBPATH (AIX).

---

5 If the response illustrated for your platform in Step 4 was correct and you are verifying a Unicode installation, make sure that the following environment variables are set in accordance with the recommendations from your database platform vendor. These variables should also be set in the `siebenv.csh` and `siebenv.sh` scripts.

```
SIEBEL_UNIXUNICODE_DB=ORACLE
```

Configuring the Siebel Server for Automatic Start

If, during your UNIX installation, you elected automatic restart of the Siebel Server, you must follow the procedure below to enable it.

The procedure that you use will depend on whether or not you have a copy of `siebel_server` in your `/etc/init.d` (Solaris and HP-UX) or `/etc/rc.d` (AIX) directory. If, for example, your Siebel Gateway and this Siebel Server are on different machines, you probably will not have one and in this case you will use the second procedure.

Editing the siebel_server Script

The `siebel_server` script requires you to set the appropriate environment variables for database connectivity before it can start the Siebel system services.

Locate the `siebel_server` script under `$SIEBEL_SERVER_ROOT/bin`.

Review and, if necessary, edit the section of the script called "Setting Up Database Connectivity" to make sure that the appropriate commands are invoked.

If you have multiple `$SIEBEL_ROOT` directories on the server for which you want to enable automatic startup, you must edit the script by adding the new `$SIEBEL_ROOT` to the `SIEBEL_SERVER_ROOT` variable. (Use spaces to separate the directories.) For example, suppose that the first Siebel Server in the directory `/usr/local/siebel` has the following variable value for `$SIEBEL_SERVER_ROOT`:

```
SIEBEL_SERVER_ROOT = "/usr/local/siebel"
```

If, after following the steps described above, you later decide that you want to install a new server in the directory `/vol1/siebel` and enable it for Autostart feature, you must modify the `$SIEBEL_SERVER_ROOT` variable as follows:

```
$SIEBEL_SERVER_ROOT= "/usr/local/siebel /vol1/siebel"
```

NOTE: Remember that the host where the Siebel Gateway is installed must be the first to be started and the last to be shut down.

Configuring the Siebel Server for Automatic Start If You Have No Script

If you do not have a copy of the script `siebel_server` in the appropriate location, follow the procedure below.

To configure the Siebel Server to start automatically under Solaris and HP-UX

1. Log on as root to the machine on which the Siebel Server was installed.
2. Copy the file `siebel_server` to the `/etc/init.d` directory as shown below:

   ```
   cp $SIEBEL_ROOT/bin/siebel_server /etc/init.d
   ```

3. Set the appropriate permissions by executing the command:

   ```
   chmod 744 /etc/init.d/siebel_server
   ```

4. Create a hard link to

   ```
   /etc/rc3.d/S72siebel
   ```

   from

   ```
   /etc/init.d/siebel_server
   ```

   by executing the command:

   ```
   ln /etc/init.d/siebel_server /etc/rc3.d/S72siebel
   ```

   NOTE: The command above assumes that you bring up your Siebel Server in init state 3.

5. Create a hard link to

   ```
   /etc/rc0.d/K32siebel
   ```

   from

   ```
   /etc/init.d/siebel_server
   ```

   by executing the command:

   ```
   ln /etc/init.d/siebel_server /etc/rc0.d/K32siebel
   ```

To configure the Siebel Server to start automatically under AIX

1. Log on as root to the machine on which the Siebel Server was installed.

2 Navigate to $*SIEBEL_ROOT*/bin/

where:

$*SIEBEL_ROOT* = the installation directory for the Siebel Server.

3 Using any text editor, open the file siebel_server. Edit the database environment variable as described below:

Oracle

a Uncomment the line #ORACLE_HOME= and enter the location for $*ORACLE_HOME*.

b Uncomment the line #export ORACLE_HOME.

c Add the following two lines:

```
TNS_ADMIN=$tns_admin
```

NOTE: You will need to ask your database administrator for the value of *$tns_admin*.

```
export TNS_ADMIN
```

DB2

- Add a line to execute the db2profile, for example:

```
. /home/eng-sm/db2v7aix/sqllib/db2profile
```

NOTE: You will need to ask your database administrator for the location of $*db2profile*.

4 Save and close the file.

5 Log in as root and execute the following command on a single line:

```
mkitab "start_server:2:once:su - $USER -c \"$SIEBEL_ROOT/bin/
siebel_server start\""
```

where:

$*USER* is the user name of the Siebel administrator.

$*SIEBEL_ROOT* is the installation directory for the Siebel Gateway.

6 Verify if the file `/etc/rc.shutdown` exists. If it does not exist, create it and change the permissions:

```
touch /etc/rc.shutdown
chmod 744 /etc/rc.shutdown
```

7 Edit the file `/etc/rc.shutdown` add the following command to it:

```
su - $USER -c "$SIEBEL_ROOT/bin/siebel_server stop"
```

where:

$*USER* is the user name of the Siebel administrator.

$*SIEBEL_ROOT* is the installation directory for the Siebel Gateway.

8 Save and close the file.

Managing Environment Variables

There are several environment variables that must be properly set for successful and optimal functioning of the Siebel Server. These include:

- Siebel environment variables
- UNIX operating system environment variables

Table 14 provides instructions for setting and managing these environment variables. For detailed information on tuning the UNIX kernel and other tunable parameters for Siebel Server optimization, see Appendix E, "Tuning UNIX Operating Systems for Siebel Installation."

Table 14. Managing Environment Variables

Environment Variable	Purpose	Recommended Siebel Value
`ODBCINI`	Tells the ODBC driver manager which file to open to look for the ODBC data source and driver information. Set within the Siebel `siebenv.sh` and `siebenv.csh` environment variable files, which are created during server installation. Always points to `$SIEBEL_ROOT/sys/.odbc.ini`.	N/A (Not to be modified.)
`SIEBEL_UNIX UNICODE_DB`	This controls the ODBC driver manager responsible for connection to the RDBMS. Reset, if necessary, within the `siebenv.*` file before sourcing it.	Default is `DB2`. You must reset to `ORACLE` if your database is Oracle
`LANG`	Language environment variable within the `siebenv.csh` or `siebenv.sh` file. Sets Siebel Database Server client environment appropriate to language of installation.	Set this to the language in which your database runs

The Siebel environment variables `$SIEBEL_GATEWAY` and `$SIEBEL_ROOT` must be set when you are executing the Siebel installation and configuration scripts. These environment variables must also be set to enable execution of the Siebel Gateway and Siebel Server management utilities, documented in *Siebel Server Administration Guide*.

During the Siebel Gateway installation process, the script files `siebenv.csh` (for the C shell and its variants) and `siebenv.sh` (for the Bourne and Korn shells and their variants) are automatically created in the `$SIEBEL_ROOT` directory. When sourced, these shell scripts set the environment variables.

If you have configured your Siebel Server to start manually, you must source `siebenv.*` before starting the server. For this reason, you may want to add a call to the appropriate `siebenv.*` script to the logon files of all Siebel administrator UNIX accounts, so that these variables are set automatically whenever a Siebel administrator logs on.

NOTE: If you want to change the default settings of these environment variables, you must do so before you start the Siebel Server.

Setting the LATCH Environment Variable

The LATCH environment variable controls the number of unnamed synchronization objects allocated per Siebel Server.

To set the LATCH environment variable

1. Add the environment variable `SIEBEL_OSD_MAXLIMITS` to the profile of the administrator running the Web server and set it to `1`, using one of the following methods:

   For C shells:

   ```
   setenv SIEBEL_OSD_MAXLIMITS 1
   ```

   For Korn shells or Bourne shells:

   ```
   SIEBEL_OSD_MAXLIMITS=1;export SIEBEL_OSD_MAXLIMITS
   ```

2. Optional. If more than 500 concurrent users will be using a single Siebel Server, set the Latch environment variables to manage these higher user loads.

   NOTE: Before changing this variable, stop the server using `stop_server`, and delete the `$`*`SIEBEL_ROOT`*`/sys osdf` file if it still exists.

   The environment variables and values to be calculated are as follows:

   ```
   SIEBEL_OSD_NLATCH = 7 * MaxTasks + 1000

   SIEBEL_OSD_LATCH = 1.2 * MaxTasks
   ```

UNIX Tuning for Siebel Applications

There are a number of UNIX system environment variables you must set for proper functioning of the Siebel Server. For detailed information on tuning the UNIX kernel and other tunable parameters for Siebel Server optimization, see Appendix E, "Tuning UNIX Operating Systems for Siebel Installation."

In this regard, see also "Verifying the Language Locales on Your Server" on page 130.

Establishing Network Connectivity for Mobile Users

Siebel Mobile Web Client users must be able to connect to the Siebel Remote Server, using TCP/IP to synchronize with the master database. Make sure that you have the correct network software and hardware installed to support this connectivity, and that your remote users are able to establish a TCP/IP connection to the server using the `ping` utility.

You are now ready to proceed with the installation of the Siebel Database Server.

Synchronizing Siebel Server Component Groups

Before you can operate Siebel component groups, you must synchronize them. Refer to *Siebel Server Administration Guide* for synchronization instructions and for any post-installation component enablement you might require.

Setting Database Client Locale for Siebel Server

Before you configure the Siebel Database, you must set the language characteristics of your Siebel Servers.

CAUTION: This procedure is required regardless of whether you install only one language pack or multiple language packs.

DB2 UDB

You must load database environment variables for either `siebenv.csh` (C-shell) or `siebenv.sh` (Korn or Bourne shell), depending on which type of shell script your operating system uses. This promotes a successful connection to the database.

To set locale parameters

1 Enter the following command, depending on your UNIX shell:

Korn or Bourne shell:

```
DB2_installation_path/sqllib/db2profile
```

C-shell:

```
source DB2_installation_path/sqllib/db2cshrc
```

where:

DB2_installation_path is the location where DB2 is installed

2 Reverify your database connection.

You will also need to set the code page at the database level. For information, see *System Requirements and Supported Platforms*.

Oracle

You must load database environment variables for either `siebenv.csh` or `siebenv.sh`, depending on which type of shell script your operating system uses. This promotes a successful connection to the database.

To set locale parameters

1 Add the following lines at the beginning of the file:

siebenv.sh

```
NLS_LANG = language_territory.character set;
export NLS_LANG
```

siebenv.csh

```
setenv NLS_LANG language_territory.character set
```

where:

language is the language your server should run in; for example, FRENCH.

territory is the territory (locale) operative for that language; for example, CANADIAN.

character set is recommended to be set to WE8MSWIN1252.

2 Reverify your connection to the database using Oracle's Net8, Net9, or a similar tool.

About Language-Specific Siebel Object Managers

The installation of each Siebel Language Pack includes language-specific Siebel Object Managers that do not overwrite those related to other language packs you may have already installed.

Be aware that after you install all the language packs you require among all your Siebel Servers, you must do the same among all your Web servers. For more information about this, see Chapter 12, "Installing Siebel Web Server Extension."

When you enable a component group for a Siebel Enterprise Server, you automatically enable the language-specific Siebel Object Managers for that component among all the Siebel Servers in that Siebel Enterprise Server. For more information on component group enablement, see Step 23 on page 144 under "Installing and Configuring the Siebel Server."

Disabling Language-Specific Siebel Object Managers

If your deployment is multilingual, you must execute a script to disable the language-specific Siebel Object Managers that are running by default (in other words, the Siebel Object Managers for your primary(base) language) on any Siebel Server that you may want dedicated to a secondary language.

To disable language-specific Siebel Object Managers on Siebel Servers

1 Navigate to $*SIEBEL_HOME*/bin.

2 Execute the following command.

```
disable_lang.ksh language code server1 server2 server3
```

For example:

```
disable_lang ENU siebsrvr1 gtwysrvr
```

where:

lang is the language component you want to disable.

server1, 2, and so forth are names of the Siebel Servers on which you want to disable the component.

NOTE: Do not place commas between the server names.

If the execution was successful, you should see the `srvrmgr` banner, which this script invokes, and a message:

```
connected to 0 servers of n
```

A second message (`command completed`) appears as many times as you specified servers on which to disable language-specific Siebel Object Managers.

Troubleshooting Siebel Server Installation

This section provides guidelines for resolving Siebel Server installation problems.

Installation problems can be caused by a number of things, but the reasons listed below are the most common:

- **Insufficient user privileges.** For information about setting up appropriate administrative user privileges to install, see Chapter 2, "Preparing for the Installation."
- **Trying to install the Siebel Server out of sequence.** For the required installation sequence, see Chapter 2, "Preparing for the Installation."
- **Environment variables not set properly.** For more information about these, see "Managing Environment Variables" on page 166.

- **Failure to install required hardware or software.** Installation errors related to software requirements are logged in the SES installer log file. For prerequisites, see *System Requirements and Supported Platforms*.

- **Faulty network connection.** Sometimes a faulty network connection can result in the system administrator being unable to install to the `$HOME` directory in which he or she has write privileges. Verify that your network connection is stable.

- **Object Manager does not start.** Heavily used servers running more than 50 instances of Object Manager may experience a condition where some of the Object Managers do not start correctly and log the following error message:

  ```
  Got error 1801210 when dequeueing a connection request (62)
  ```

  This error is rectified by changing TCP stack parameters. For more information, see "Tuning Object Manager Instances for Solaris" on page 441.

The following list provides other, less common reasons for a faulty installation or configuration.

Problem: The Siebel Server terminates and produces a core dump for no apparent reason when you try to start it.

Solution: If Central Dispatch is installed on the Siebel Server, but the Enterprise is not configured for Central Dispatch, Siebel programs may fail. With the Siebel Gateway running, set the `UseSCB` parameter on this Siebel Server, using Server Manager, to `FALSE`. For information on how to set Siebel Server parameters, see *Siebel Server Administration Guide*.

Problem: The Siebel Server does not start after configuration.

Solution a: Verify that the Siebel Gateway was started. Start it if it was stopped.

Solution b: Verify that the values input during configuration were valid.

Solution c: Verify that you have sufficient system privileges to start the service. For more information on this subject, see Chapter 2, "Preparing for the Installation."

Problem: The Siebel Server does not start and the log file shows a Central Dispatch timeout error for the server.

Solution: Increase your Central Dispatch timeout value, using the Siebel parameter `SCBtimeout`.

NOTE: The default setting of this parameter is 300 seconds.

To verify the current SCBtimeout parameter setting

1 From a UNIX shell, enter the following command:

`srvrmgr -g` *`gateway address`* `-e` *`Siebel Enterprise name`*

where:

`gateway address` is the IP address of your Siebel Gateway.

`Siebel Enterprise name` is the alias of your Siebel Enterprise Server.

2 At the prompt, enter:

`list` `parameter SCBTimeout for Server` *`Siebel Server name`*

where:

`Siebel Server name` is the alias of the Siebel Server in which the components failed to start.

At this point, you will want to add more time, starting with an additional 60 seconds, to the value returned by the above procedure.

To increase the timeout value for a failed component

- Run the `srvrmgr` utility from Step 1 in the "To verify the current SCBtimeout parameter setting" procedure on page 174, and at the `srvrmgr` prompt type:

`change parameter SCBTimeout=`*`new value`* `to server` *`Siebel Server name`*

where:

`new value` is the new timeout value (in seconds).

`Siebel Server name` is the alias of the Siebel Server.

Clustering Your Siebel Deployment for Failover 7

The purpose of this chapter is to describe how to deploy Siebel eBusiness Applications with cluster technologies certified by Siebel Systems. For a listing of Siebel-certified cluster technologies, refer to *System Requirements and Supported Platforms*.

Clustering should be fully operational before you begin the Siebel eBusiness Applications installation process.

About Clustered Servers

Clustering servers allows you to automatically migrate and restart resources, such as Siebel Servers, between two nodes of a cluster.

A logical computer, which is a computer comprised of multiple cluster nodes, can run on only one node at any given time. Should that node fail, the clustering software can be configured to failover the service or application to the secondary node to minimize any application outage. This is comparable to an application restart. As a result, the Siebel eBusiness Application operating at the time of the failover will experience a brief interruption of service.

- All users connected to that Application Object Manager (AOM) on that Siebel Server will have to reconnect and login again. See "Components that Should be Clustered" on page 176 and Table 17 on page 180.
- If the Siebel Server was hosting a Communications Server, then your CTI toolbar will be disabled. All users will have to reconnect and login again.

Clustering is best suited to promote the availability of those components that must be accessible on a server that is not load balanced and constitute a single point of failure.

NOTE: You should not install Central Dispatch Software on the same machine where Siebel components are clustered.

In deployments for which high server availability is critical, clustering eliminates any single point of failure within the system.

Components that Should be Clustered

Consider enabling clustering on those servers on which you will operate components or server software, such as:

- Siebel Gateway Name Server (without Central Dispatch components)
- Siebel Servers hosting components not managed by Central Dispatch

NOTE: Most components not load balanced by Central Dispatch should be clustered. Exceptions to this are components such as Server Request Processor which can run on all servers, Business Integration Manager, Work Flow Process Manager, and Server Request Broker which can run on multiple nodes for redundancy.

- Siebel File System
- Siebel Database Server

NOTE: Siebel eBusiness Applications can be high availability (HA) enabled by employing both load-balancing techniques and failover clustering technologies. These technologies are complementary and mutually exclusive in a Siebel environment. Clustered Siebel object managers must be run either as a single instance or statically load-balanced.

Figure 7 shows a representative grouping of clustered components.

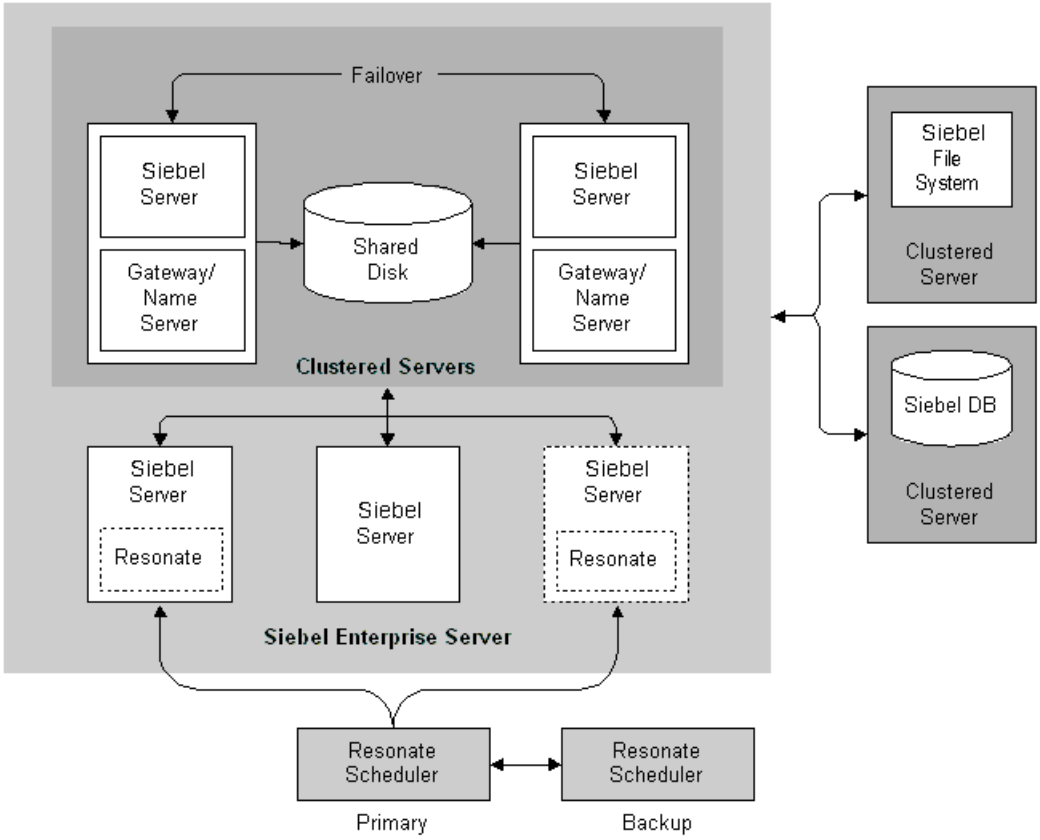

Figure 7. Clustered and Load-Balanced Servers in a Siebel Enterprise Environment

Siebel Components Supported on Clustered Solutions

Table 15 lists the components that are supported on clustered solutions within the Siebel architecture.

Table 15. Siebel Components Supported with Clustering

Component	Comments
Siebel Gateway Name Server (without Central Dispatch)	Fully supported.
Siebel Server[1]	Server components can be either clustered or load-balanced but not both. Some object managers do not support or require clustering. For details, see "Siebel High Availability Support Matrix" on page 179.
Web Server with SWSE Plug-in[2]	Fully supported for non-load balanced SWSE plug-ins only.
Siebel File System	Fully supported.
Siebel Database Server	Subject to DB vendor support.
Siebel third-party server components	See Table 16 on page 179.

1. If installing multiple Siebel Servers on a cluster (whether or not they are all registered with the cluster solution), select Static port allocation in the Component Port Selection dialog, then specify a unique port number for each component. Components operated by all Siebel Servers on a cluster must use unique port numbers, to make sure that they do not conflict when operating on the same node or Siebel Server.
2. When installing the SWSE with a non-standard port, provide the web server port as part of the Web Server address or hostname.

Siebel Third-Party Components with Clustering Limitations

Table 16 lists third-party components with clustering limitation.

Table 16. Third-Party Components with Clustering Limitations

Component	Comments
RDBMS Servers	As supported by the RDBMS vendor within the confines of Siebel support.
Siebel CORBA Object Manager	Not supported.
LDAP/ADSI Directory Servers	Depends on LDAP vendor. For high availability, use built-in replication if clustering is not supported by your vendor.
Central Dispatch	Not supported. For high availability, use built-in failover capability.
Universal Queuing Server	Not supported. For high availability, use built-in failover capability.
Actuate eReport Server integration with Siebel	Not supported.
Informatica	Not supported.
Documents server/ Microsoft Word Server-side integration	Not supported.
Fulcrum/Hummingbird Search Server	Not supported.
First Logic Data Quality	Not supported.
CTI hardware/switch	Not supported.
ChartWorks	Not supported.

Siebel High Availability Support Matrix

Table 17 on page 180 summarizes various Siebel functions, together with the high availability techniques that can be used with them. These are categorized as follows:

- **Preferred.** Indicates that more than one high availability technique is supported for this function, but this is the preferred technique, and should be used wherever possible.
- **Supported.** Indicates high availability technique is supported for this function. This technique can be used where the preferred technique is not appropriate.
- **Blank.** Not supported.

Table 17. Siebel Function Support Matrix

Process	Clustering	Load Balancing	Software Provided Load Balancing
Communications Manager	Supported		Preferred
CORBA Object Manager	Supported		Preferred
Dynamic Assignment	Supported		
eConfigurator	Supported	Preferred	
eDocument Server			Supported
ePricer	Supported		Preferred
EAI	Supported	Preferred	Supported
EAI Object Manager	Supported	Preferred	
Email Agent	Supported		
Field Service	Supported		Preferred
File System Manager	Supported		Preferred
Interactive Assignment	Supported		Preferred
MQ Series Receiver	Supported		
Replication Agent	Supported		
Central Dispatch Scheduler		Supported	
SAP BAPI Integration	Supported		
SAP IDOC Receiver	Supported		
SAP IDOC Receiver for MQ	Supported		

Table 17. Siebel Function Support Matrix

Process	Clustering	Load Balancing	Software Provided Load Balancing
Server Request Broker	Supported		Preferred
Server Request Processor	Supported		Preferred
Siebel Marketing	Supported		Preferred
Siebel Remote[1]	Supported		
Thin Client (Object Managers)	Supported	Preferred	
Workflow Manager	Supported		

1. Make sure that the `DockConnString` parameter in the remote client configuration file is referencing the Virtual(Logical) Server Name. This must be configured properly for remote synchronization to work after a cluster failover.

Clustering Strategies

You may run the same application on two nodes, using one as the active and the other as the backup, or different applications on individual nodes. The following sections describe different scenarios for a cluster environment with two nodes, but the same concept can be applied to an environment with multiple nodes.

Active-Active Configuration

In an active-active configuration, both nodes in the cluster are used. Each of them may host different instances of the same application or different applications. For example, the Siebel Database may run on one node and a Siebel Server on another, or the Siebel Gateway may run on one node and a Siebel Server on the other node.

Alternatively, one active node can host a production server and another active node can host a development or testing server. When a failover occurs, the production node fails over to the development or testing node. The development or testing environments on the secondary node are stopped and the production services are given priority.

Active-Passive Configuration

An active-passive configuration is one in which only one node is being used to host application. The other one is idled and serves as a hot backup. One of two clustered nodes acts as a standby that remains idle (passive) until a failure occurs in the active node. In this case, the previously running applications would come back on line when the passive node became active.

Choosing the Right Strategy

Both active-active and active-passive clusters are valid solutions. The main trade-offs between the two configurations are cost and performance of the active server after a failover.

Active-active clusters use all the hardware on a continuous basis, thereby offering a better return on investment. Should a failover occur, the load from the failed server would be added to the already existing load on the surviving server with the effect of overloading it and potentially degrading the performance of all applications on that server.

However, because failovers should be very infrequent and should last only a short time, this degradation is, in practice, often acceptable. Therefore, servers are often deployed on active-active clusters.

Active-passive clusters require a standby server that is used only in exceptional circumstances (failovers). Therefore, these incur additional hardware cost without providing additional capacity. The benefit of active-passive clusters lies in the fact that, even after a failover, the same level of hardware resources are available for each application, thereby eliminating any performance impact to the application. This is particularly important for performance-critical areas such as the database. In fact, the most common use of active-passive clusters is for database servers.

Clustering Guidelines

Clustering is a form of high availability (HA) system architecture designed to maximize availability of data and application services for users. Clustering creates a layer of redundancy so that when a function fails, other resources are available to take over the failed function. This process needs to be:

- Automatic—no operator intervention should be needed.
- Transparent—the users should not need to change anything.

Siebel eBusiness Applications can be deployed using a highly available architecture by employing both load-balancing techniques and failover clustering technologies.

Following the guidelines below will help promote successful failover protection in your system. However, these guidelines are in no way meant to be exhaustive or all-inclusive.

- You should install and have running Siebel Gateway Name Server (without Central Dispatch Software).
- You should have multiple running Siebel Servers within the same Siebel Enterprise. If you have multiple Siebel Servers running that are not clustered, these should be load balanced using Central Dispatch.

- It is important to cluster the Siebel Database Server as it is a single point of failure. If you intend to cluster the Siebel Database Server, you should have installed it and it should be running within its own cluster node. The Siebel Database Server should be the first server to be clustered.

NOTE: You can cluster Siebel eBusiness Applications if the Siebel supported db platform has cluster support from the database vendor; see your database vendor documentation on how to cluster your database.

Clustering Requirements

The minimum requirements for a cluster environment are as follows:

- You have installed and configured a clustering software on each node to detect failure of the node, to recover, and to manage all servers as a single system. See *System Requirements and Supported Platforms* for a list of supported cluster technologies.
- You have not installed Central Dispatch Software in a clustered environment on any nodes hosting the Siebel Gateway or the Siebel Server or any nodes that have been clustered for failover.
- All hardware used for this purpose is cluster-certified by your vendor. Contact your hardware vendor for confirmation.

Installing Siebel eBusiness Applications with VERITAS

VERITAS Cluster Server (VCS) lets you monitor systems and application services, and to restart services on a different system when hardware or software fails. A VCS cluster consists of multiple systems connected in various combinations to a shared storage device.

All systems within a cluster have the same cluster ID, and are connected by redundant private networks over which they communicate by heartbeats, or signals sent periodically from one system to another.

Applications can be configured to run on specific nodes within the cluster. Storage is configured to provide access to shared data for nodes hosting the application. The storage connectivity determines where applications are run. All nodes sharing access to storage are eligible to run an application. Clustering allows the logical Siebel Server to run on any physical node.

Before Siebel eBusiness Applications are installed, install and configure all appropriate VERITAS software. To install and configure the VERITAS agent, refer to the *VERITAS Cluster Server Agent for Siebel Server Installation and Configuration Guide*. For additional assistance with installing VERITAS software, refer to the VERITAS documentation or VERITAS professional service.

For detailed Siebel software installation steps, see Chapter 5, "Installing the Siebel Gateway" and Chapter 6, "Installing the Siebel Server."

Using VERITAS Cluster Server Groups

Use a separate User ID for each VERITAS Cluster Server (VCS) service group. You need to determine the number and type of VCS service groups based on several factors. For example, one User ID or service group can contain both the Siebel Server and Siebel Gateway. Alternatively, there could be one service group for each Siebel Gateway and Siebel Server. This allows you to control switchover or failover at the Siebel Server or Siebel Gateway level instead at the machine level.

Selecting User Groups in a VERITAS Clustered Environment

Designate a Solaris user group for the Siebel VCS service groups. Do not use the Solaris *other* group.

Designate this group as the primary group for all Siebel and Sun ONE (iPlanet) users. Make sure that the default umask for all these users is 007 or 004.

If you test a file using the `touch` command, you should see permissions of `rw-rw---` or `rw-rw-r--`. The default umask can be set in the user's profile or login script.

Configuring Login Profiles in a VERITAS Clustered Environment

Verify that the login profiles of all Siebel User IDs do not reference any script or file that is available on only a specific node. It is recommended that any Siebel-specific environment variable settings and other related actions be implemented by scripts that are completely contained in the respective service group's filesystem.

Synchronize System Information in a VERITAS Clustered Environment

Verify that system information like User IDs and passwords, `/etc/hosts`, `/etc/resolv.conf`, `/etc/services`, and so on is synchronized among the nodes in one or more local clusters or VCS and on any Global Clusters or Global Cluster Manager. You usually have to configure this externally, outside of the VERITAS Cluster Manager.

Assign Resources for Siebel Servers in a VERITAS Clustered Environment

Assign appropriate resources, including Disk Groups virtual IP addresses, for each of the logical Siebel Servers. Validate that the directory in $*SIEBEL_ROOT* is owned by the corresponding Siebel User ID.

Set Environmental Variables in a VERITAS Clustered Environment

Before installing the Siebel Gateway and Siebel Servers, you should set the $*SIEBEL_ROOT* and $*SIEBEL_GATEWAY* environment variables in each Siebel Server User ID's login profile. The $*SIEBEL_ROOT* is the root directory where Siebel Server is installed. The $*SIEBEL_GATEWAY* variable should be the virtual IP address or hostname of the (corresponding) Gateway's service group.

NOTE: You can speed installation if you set the $*SIEBEL_GATEWAY* and $*SIEBEL_ROOT* environment variables before you begin installation. The installer will automatically install Siebel Gateway and Siebel Server in the designated locations. Otherwise you are prompted for the locations.

Verify that the *LD_LIBRARY_PATH*, *SHLIB_PATH*, and *LIBATH* environment variables on each node are identical and contain all the necessary Siebel, RDBMS and OS library paths. The Siebel paths for *LIBPATH* include the following:

$*SIEBEL_ROOT*/lib

$*SIEBEL_ROOT*/mw/lib

$*SIEBEL_ROOT*/SYBSsa50

The environmental variables *LD_LIBRARY_PATH*, *SHLIB_PATH*, and *LIBATH* should be identical in value, that is, equal to the union of *LD_LIBRARY_PATH*, *SHLIB_PATH*, and *LIBATH*.

Use Clear Naming Conventions in a VERITAS Clustered Environment

If you will be operating a heterogeneous server environment, use UNIX naming conventions for servers, and names that are no longer than 12 characters and do not contain spaces or special characters.

Use machine names for the Siebel Enterprises, Siebel Gateway and Siebel Servers that are cluster-independent and node-independent.

If you are using Siebel Remote, the physical node hostname on which it is running must remain unchanged at all times, even after a switchover or failover.

Configuring Service Groups in a VERITAS Clustered Environment

You can speed installation in a clustered environment if you can access the database, Web Server, Siebel Gateway, Siebel Server, and all application drives from a single machine. This lessens the necessity of switching from one machine to another, swapping CDs, and so forth.

First install all applications from that single machine and test them individually. Then you can use `su` (substitute user) and the username that owns the corresponding service group and Siebel Server to begin installation.

Clustering requires each service group to have its own filesystem. The service group filesystem is supported by a volume on a disk group assigned to the service group.

You should place the $*SIEBEL_ROOT* location in a subdirectory under the service group mount-point and not as the mount-point itself. This creates a directory tree structure that is uncluttered and easier to maintain.

For example, suppose you have a service group named `sbl_srvr1` with mount point `/sbl_srvr1`. Specify the $*SIEBEL_ROOT* directory as `/sbl_srvr1/siebel and not /sbl_srvr1.`

If you place multiple nodes within the cluster, place the Siebel File Server on its own service group or outside of any Siebel service groups. This will prevent it from being affected by any Siebel application service group switchover or failover.

After completing all installations, you should test standard functionality without the VERITAS Siebel Server agents. Then verify that each Siebel Server service group runs successfully on all its applicable nodes. Also validate that the Siebel Gateway and Siebel Servers are functional on each node of the cluster.

Check Database Connectivity in a VERITAS Clustered Environment

Verify that the appropriate RDBMS client software for each clustered Siebel Server is available on each physical node.

- Installing the RDBMS client software under each Siebel Server's file system
- Installing the RDBMS client at the same fixed directory on each node

Before beginning the Siebel software installation, verify that RDBMS connectivity works by using the utilities native to your RDBMS. After the installation of each Siebel Server, check database connectivity using the procedures described in Chapter 9, "Installing the Siebel Database Server for DB2 UDB" or Chapter 11, "Installing the Siebel Database Server for Oracle" as appropriate, to verify the ODBC connection.

NOTE: Siebel applications are designed to automatically reconnect to the database if the connection is temporarily lost. However, if the database failover and the reconnect mechanism does not successfully reconnect, you need to restart the application manually.

Clustering the Siebel Gateway in a VERITAS Clustered Environment

Use the Server Manager GUI and change the Gateway Name Server's Hostname parameter and IP Address to the Siebel Gateway Resource Group Hostname and IP Address respectively.

NOTE: When specifying the Gateway address during the installation of Siebel Servers, always use the Resource Group IP Address and Hostname.

Clustering the Database Server in a VERITAS Clustered Environment

If you intend to cluster your Siebel Database Server, follow the procedures provided by your database vendor.

Clustering the Siebel File System in a VERITAS Clustered Environment

The Siebel File System is a directory hierarchy used to store attachment files used by the Siebel application. It needs to be accessible from all Siebel Servers through a common name. If dedicated Web clients are also used and they need direct file system access, then all dedicated Web clients will need to be able to access the Siebel File System as a network share.

Configure the Web Agent in a VERITAS Clustered Environment

Install the VERITAS Agent for Siebel Server after the Siebel Server has been installed successfully and tested. Access the VCS Cluster Manager and modify, as needed, the following parameters for the VERITAS Agent for Siebel Server:

Attribute	Value	Description
`Port`	`8088`	`8088` is the default; enter the port number on which the Web Server has been configured for Siebel eBusiness Applications.
`SvrSubDir`	`/web/iplanet/https-14067`	This is the directory that contains the `start_server`, `stop_server`[1] and restart scripts.

1. If you co-locate Siebel Servers on one machine under a single User ID and stop one of them using the `stop_server` script, the other server may be adversely affected due to a deallocation of shared memory. Use the `-M` option when you execute `stop_server` to prevent the shared memory from being deallocated.

Sun ONE (iPlanet) Web Server Installation in a Clustered Environment

There are no special requirements for installing the Sun ONE (iPlanet) Web Server for use with the SWSE in a cluster. The standard instructions given in Chapter 12, "Installing Siebel Web Server Extension," and the Sun Cluster for Sun ONE (iPlanet) install guide should be followed.

If a Shared Install configuration is used, then the Sun ONE (iPlanet) Web Server should be installed on a shared global file system. If a Local Install configuration is used, then the Sun One (iPlanet) Web Server should be installed on a local file system on each server.

Once the Sun One (iPlanet) software is installed, it is recommended that a dedicated Web Server be created for each Siebel Enterprise. For a Local Install configuration, the same parameters should be used for each server. As described in the Sun Cluster Agent for Sun One (iPlanet) documentation, this should have the following parameters:

Servername/Hostname	This should be set to the fully qualified hostname of the logical host associated with the cluster service group for the Web Server.
Bind to Address	This should be set to the IP address of the logical host associated with the cluster service group for the Web Server. (This should only be set after the logical host resource is online.)

Change the ownership of all files associated with the Siebel Web Server to the siebel user/group using the following command as root:

```
# chown -R SIEBEL USER:SIEBEL GROUP SERVER_DIR
```

where:

SIEBEL_USER is the user ID used to install the Siebel Web Server Extension (SWSE) on the Web Server.

SIEBEL_GROUP is the group ID.

SERVER_DIR is the directory where SWSE is installed.

For example,

```
# chown -R siebusr:siebgrp /usr/netscape/server/https-siebel
```

Configuring Web Server Extension Port in a VERITAS Clustered Environment

While installing the Siebel Web Server Extensions, if you are using a nonstandard port, input the Web server port as part of the Web server address or hostname. For example, if the machine hostname is websrvr1 and the Web server port is `8088`, then during installation enter the Web server address as `webserver1:8088`.

Installing Siebel eBusiness Applications with IBM HACMP

High Availability Cluster Multi-Processing (HACMP) Cluster Server lets you monitor systems and application services, and restart services on a different system when hardware or software fails. A HACMP cluster consists of multiple systems connected in various combinations to a shared storage device.

All systems within a cluster are connected by redundant private networks over which they communicate by heartbeats, or signals sent periodically from one system to another.

Applications can be configured to run on specific nodes within the cluster. Storage is configured to provide access to shared data for nodes hosting the application.

For detailed instructions on how to install and configure a HACMP Cluster, refer to the *High Availability Cluster Multi-Processing for AIX - Enhanced Scalability Installation and Administration Guide (HACMP Guide)*. For examples on how to deploy a Siebel application in a HACMP environment, refer to your IBM documentation.

NOTE: The cluster services should be started on all nodes and all application resource groups (RG's) have to be online before any Siebel software installation.

For detailed Siebel software installation steps, see Chapter 5, “Installing the Siebel Gateway” and Chapter 6, “Installing the Siebel Server.”

Configuring HACMP Cluster Resource Groups

A Resource Group (RG) is a filesystem located on an external disk (SSA disk) that can be mounted on nodes in a cluster. It also has an associated IP address (known as Service Address) which moves with the RG to the node where it is mounted. When an RG is initially created, the filesystem in the RG is empty. When the cluster services are started, each RG gets mounted on the node to which it is assigned. At this point, the filesystem and the service address become available for software installation. You need to determine the contents of each RG; for example, each RG can contain only one module like the Siebel Server or the IHS Web Server. Alternatively, each RG can contain multiple software such as the Siebel Gateway Name Server, Siebel Server, and the IHS Web Server.

NOTE: When the RG moves, all the software in the RG moves with it.

Selecting User Groups in a HACMP Clustered Environment

There are no UNIX User group restrictions within HACMP. It does not matter who owns what on each node. However, you must use root to install HACMP on each node, and therefore root owns HACMP. You can install the software in the RG's using any UNIX user. However, when an RG moves to another node, you must make sure that the UNIX user used to install and run the software on the original node has the same UID and GID on the second node; otherwise you will encounter file access permission problems within the RG.

Configuring Login Profiles in a HACMP Clustered Environment

The `$HOME` directories of each user is local to each node and not in the RG's. This means the `.profile` for each user is local. Nothing specific to Siebel software is set in the users .profile. This is because in a dynamic HACMP environment, any RG can be connected to any node and each RG may have different environment requirements. The HAMCP scripts should set up the appropriate environment before launching the application. Since the `siebenv.sh` script is part of the installed Siebel application, it should be in the RG's.

Installing Additional Language Packs in a HACMP Clustered Environment

Before installing additional language packs or patches, you must make sure all RGs containing Siebel products are moved back to their primary nodes.

Synchronize System Information in a HACMP Clustered Environment

Files like `/etc/hosts, /etc/resol.conf, /etc/services` and others are files that the user needs to synchronize manually as part of the HACMP installation and configuration. HACMP relies on these files to be accurate; otherwise, you may encounter unexpected behavior from the cluster.

Assign Resources for Siebel Servers in a HACMP Clustered Environment

Assign appropriate resources, including User IDs virtual IP addresses, for each of the logical Siebel Servers. Validate that the directory in $*SIEBEL_ROOT* is owned by the corresponding Siebel User ID.

Use Clear Naming Conventions in a HACMP Clustered Environment

If you will be operating a heterogeneous server environment, use UNIX naming conventions for servers; use names that are no longer than 12 characters and do not contain spaces or special characters.

Use machine names for the Siebel Enterprises, Siebel Gateway and Siebel Servers that are cluster-independent and node-independent.

Clustering the Siebel File System in a HACMP Clustered Environment

If the Siebel File System is on an NFS server, refer to the IBM HACMP guide for clustering NFS filesystems.

Clustering the Database Server in a HACMP Clustered Environment

If you intend to cluster your Siebel Database Server, follow the procedures provided by your database vendor.

Cluster Event Scripts

Once you have installed the Siebel software and have started the cluster, you can use custom HACMP or ES Cluster Event scripts to start, stop, and monitor the Siebel components. For more information, see your IBM documentation.

Testing and Troubleshooting Clustering

After you have installed the Siebel Gateway and Siebel Server successfully, use the Cluster Manager program to start and stop the Siebel Server on each node of the cluster.

NOTE: Depending on the number of Siebel components on a Siebel Server, the resources required to start a Siebel Server can be substantial. Therefore, avoid starting (or bringing online) several Siebel Servers on the same node concurrently.

To verify that Siebel application and the clustering technologies you have implemented are operating correctly

1. Test each Siebel Server by bringing each node in the cluster online and validate that all enabled components are either *running*, *online*, or *available*.
2. Test that each component runs on every node on which the Siebel Server is active. For example, run EIM on an empty batch, or run a Workflow Process using the Workflow Simulator.

   NOTE: If a component on a node will not start, examine the Siebel Server log file (`$SIEBEL_ROOT/enterprises/enterprise-name/siebel-server-name/`logs/`enterprise-name.siebel-server-name`.log) as well as the log files for the component.

   ---

3. If Siebel Remote is installed, check the column `APP_SERVER_NAME` in the `S_NODE` table to make sure it contains the Virtual Machine name for all Remote Clients. Test this by performing a database extract and then querying the `S_NODE` table.
4. Verify that when a Siebel Remote Server is activated on a node, the hostname remains consistent. If possible have a Siebel Remote user defined and extracted prior to the tests and perform synchronization for the remote user on each node the Siebel Remote Server is made online on.

Creating the DB2 Universal Database for Windows and UNIX 8

This chapter is written for database administrators who will create the IBM DB2 UDB database and want to optimize it for Siebel eBusiness Applications. The chapter provides an overview of Siebel Database layout, sizing, and configuration recommendations for the Siebel Database.

The optimization and creation of the Siebel Database consists of several tasks, described in Table 18.

Table 18. Database Configuration Tasks

Who Performs It?	Task
System Administrator	**1** Create a local user, with administrative privileges, as the DB2 instance owner for the domain of the database administrator.
Database Administrator	**2** Verify that the system administrator has performed Step 1. **3** Verify that the DB2 client is installed. See "Verifying Installation of the DB2 UDB Client" on page 196. **4** Review the database layout guidelines and lay out your database accordingly. See "Database Layout Guidelines" on page 196. **5** Review the recommended DB2 parameter settings. See "DB2 Database Configuration Guidelines" on page 201. **6** Create your database instance. See "Creating the Database" on page 210 and also Appendix C, "Sample Database Creation Scripts."

Verifying Installation of the DB2 UDB Client

When you use DB2 UDB, the DB2 UDB Application Development Client must be installed on your database server. To verify, navigate to the appropriate directory on the database server and check that the DB2 UDB Application Development Client is installed. For current versions of application development client components, see *System Requirements and Supported Platforms*.

If the DB2 Application Development Client is not installed, you must install it. For more information, refer to the relevant IBM documentation.

Database Layout Guidelines

As with most client-server applications, the overall performance of Siebel eBusiness Applications is largely dependent on the I/O performance of the Database Server. To promote optimal I/O performance, it is critical that the tables and indexes in the database be arranged across available disk devices in a manner that evenly distributes the I/O load.

The mechanism for distributing database objects varies by RDBMS, depending on the way in which storage space is allocated. Most databases can force a given object to be created on a specific disk.

Using a Redundant Disk Array

A redundant array of independent disks, or RAID, can provide large amounts of I/O throughput and capacity, while appearing to the operating system and RDBMS as a single large disk (or multiple disks, as desired, for manageability). The use of RAIDs can greatly simplify the database layout process by providing an abstraction layer above the physical disks while promoting high performance.

Planning the Distribution of Your Database Objects

Regardless of the RDBMS you implement and your chosen disk arrangement, be sure that you properly distribute the following types of database objects:

- Database log or archive files

- Temporary work space used by the database
- Tables and indexes

In most implementations, the Siebel tables listed in Table 19 and their corresponding indexes are either the most commonly used, or they can be large in some or in all deployments. For example, the tables S_EVT_ACT, S_CONTACT, and S_ORG_EXT are large in all enterprise-level deployments of Siebel eBusiness Applications. These tables and indexes should be separated across devices. As a general rule, indexes should be in a different tablespace and, if possible, on different physical devices from the tables on which they are created.

Table 19. Most Frequently Used and Largest Siebel Tables

Table Names	
S_ACCNT_CHRCTR	S_INVOICE
S_ACCNT_CO_MSTR	S_INVOICE_ITEM
S_ACCNT_POSTN	S_INV_LGR_ENTRY
S_ADDR_ORG	S_OPTY_POSTN
S_ADDR_PER	S_OPTY_PROD
S_ASSET	S_OPTY_TERR
S_CALL_LST_CON	S_OPTY_POSTN
S_CON_CHRCTR	S_ORG_EXT
S_CON_TERR	S_ORG_TERR
S_ACCNT_CHRCTR	S_PARTY
S_CRSE_TSTRUN	S_PARTY_PER
S_CRSE_TSTRUN_A	S_PARTY_REL
S_CS_RUN	S_PARTY_RPT_REL
S_CS_RUN_ANSWR	S_POSTN_CON
S_CTLGCAT_PATH	S_PROC_REQ
S_CYC_CNT_ASSET	S_PROD_BASELINE

Table 19. Most Frequently Used and Largest Siebel Tables

Table Names	
S_DNB_CON_MRC	S_PROD_CONSUME
S_DNB_ORG	S_PROD_SHIPMENT
S_DNB_ORG_SIC	S_PROD_TARGET
S_DNB_UPDATE	S_QUOTE_ITEM
S_DOCK_INIT_ITEM	S_SRM_REPLY
S_DOCK_TXN_LOG	S_SRM_REQUEST
S_DOCK_TXN_LOGT	S_SRM_REQ_PARAM
S_DOCK_TXN_SET	S_SRV_REQ
S_DOCK_TXN_SETT	
S_ESCL_ACTN_REQ	
S_ESCL_LOG	
S_ESCL_REQ	
S_EVT_ACT	
S_EXP_ITEM	
S_EXP_RPT	
S_EXP_RPT_APPR	
S_IC_CALC	
S_IC_CALC_IT	
S_IC_CMPNT_EARN	
S_IC_TXN	
S_IC_TXN_IT	
S_IC_TXN_POSTN	
S_INVC_ITM_DTL	
S_INVLOC_ROLLUP	

If you use Siebel Enterprise Integration Manager (EIM) frequently, you may want to put the interface tables (names starting with `EIM_`) on different devices from the Siebel base tables, because both are accessed simultaneously during EIM operations.

NOTE: Siebel tablespaces on DB2 UDB should be database-managed tablespaces (DMS) rather than system-managed tablespaces (SMS).

Reorganizing Fragmented Tables and Indexes

It is recommended that you use the `REORGCHK` utility to reorganize tables and indexes that have a tendency to become fragmented.

No strict guidelines can be offered as to which tables and indexes may be fragmented due to the variety in application and customer operation variables at any given customer site. However, database administrators (DBAs) should pay attention to the status of large or heavily used tables, since fragmentation of these tables can affect performance significantly. (For a list of these Siebel tables, see Table 19 on page 197.)

It is not a good idea to reorganize `S_ESCL_LOG`, `S_DOCK_INIT_ITEM`, `S_ESCL_ACTN_REQ`, `S_EVT_ACT`, `S_OPTY_POSTN`, `s_OPTY_TERR`, `S_ORG_EXT`, `S_APSRVR_REQ`, and all `S_DOCK_INITM_%%` tables (where *%* is a digit), because these tables are defined to be in append mode.

To reorganize tables

1. Run `REORGCHK` on heavily used tables, and then review the resulting reports and extract list of any fragmented objects.
2. Based on the results of `REORGCHK`, reorganize any tables, as needed, by running `REORG TABLE`.
3. After table reorganization, update statistics by using the `runstats` utility on any reorganized tables with the following minimum parameters:

```
runstats on table tablename with distribution and detailed indexes
all shrlevel change
```

You may add other parameters as required, but use the `shrlevel change` parameter to allow concurrent access to your tables while `runstats` executes.

CAUTION: Because the `runstats` utility overwrites statistics loaded by Siebel applications, if you use `runtstats`, you should always execute `loadstats.sql` afterwards, using either DB2 CLP or `odbcsql`. Otherwise, valuable statistics will be lost.

To execute loadstats.sql using odbcsql

- Enter the following command:

```
odbcsql /s DATASOURCE NAME /u username /p password /v separator /
<siebsrvr_root>/dbsrvr/db2udb/loadstats.sql TABLEOWNER NAME
```

Logical Device Layout

You can use tablespaces to place objects on logical containers, creating tablespaces to span one or more containers. Tablespaces can be used to place objects on multiple physical containers to promote parallel I/O. Spreading the data and index information across several containers (physical devices) can improve the performance of queries.

Mirroring

At a minimum, the transaction log should be mirrored to guarantee database recovery in the event of a single device failure. The instance home directory must be mirrored, if resources are available. Hardware or operating system mirroring generally provides the best performance.

DB2 Database Configuration Guidelines

This section provides guidelines for obtaining optimum performance from a DB2 Universal Database. These guidelines will be useful to a broad segment of customers. However, you should choose values for the parameters described in this guide that reflect conditions in your particular environment. See your IBM DB2 technical documentation for additional information.

Increasing the Number of ODBC Statement Handles

DB2 UDB can quickly run out of ODBC statement handles, depending on the number of business objects your Enterprise uses. Because it is difficult to know how many business objects your users actually use, you should increase this number automatically each time you install the DB2 UDB client, or when rebinding database utilities.

It is recommended that you increase the number of CLI packages to six by rebinding the CLI packages, using the special DB2 `CLIPKG` bind option.

To rebind the CLI packages

1. Navigate to the `sqllib/bnd` in the DB2 instance home directory using a method appropriate to your operating system.
2. Connect to the DB2 UDB database.
3. Enter the following command:

```
db2 bind @db2cli.lst blocking all grant public clipkg 6
```

For more information about the DB2 bind command and the `CLIPKG` option, see *DB2 UDB Administration Guide*.

Increasing the Number of User Processes Under AIX

When you reach about 400 concurrent database users running under AIX, the connection to DB2 may fail. To avoid this problem, reset the maximum number of user processes parameter on your AIX server.

To reset the parameter

1. Log on to the server as AIX system administrator.

2 Navigate to $*SIEBEL_HOME* and source environment variables, using one of the following commands, depending on the type of shell you use:

Korn or Bourne shell

```
. ./siebenv.sh
```

TIP: Make sure there is a space between the initial period and `./siebenv.sh`.

C shell

```
source siebenv.csh
```

where:

$*SIEBEL_HOME* is the location of the Siebel Server root directory.

3 Execute the command:

```
smitty chgsys
```

A list of options appears.

4 Select Maximum number of processes and reset the default (`512`) to a larger number; for example, 10,000 to avoid imposing an upper limit on the number of processes that a single user can spawn.

DB2 Database Manager Configuration Parameters

You can set the database configuration parameters using the `update database manager configuration` command of the DB2 Command Line Processor or using the DB2 Control Center.

NOTE: See the IBM DB2 technical documentation for more information on modifying the database configuration parameters.

Table 20 describes DB2 database manager configuration parameters that differ from the default settings. Set these parameters for each DB2 instance. Use the configuration information below for the listed parameters. For parameters not listed in this table, accept the default settings.

Table 20. DB2 Database Manager Configuration Parameters

Parameter	Explanation	Setting/Comment
SHEAPTHRES	Sort heap threshold (4 KB)	100000 Deployments with 3,000 or more concurrent users and using over 5 GB of RAM can increase it to 300000.
DIR_CACHE	Directory cache support	YES
ASLHEAPSZ	Application support layer heap size (4 KB)	1024
RQRIOBLK	Max. requester I/O block size (bytes)	65535
MON_HEAP_SZ	Database monitor heap size (4 KB)	128 (minimum)
QUERY_HEAP_SZ	Query heap size (4 KB)	16384
KEEPDARI	Keep DARI process	YES
MAXAGENTS	Max. number existing agents	1000 (minimum)
NUM_INITAGENTS	Initial number agents in pool	10

Table 20. DB2 Database Manager Configuration Parameters

Parameter	Explanation	Setting/Comment
NUM_POOLAGENTS	Number of agents in the agent pool kept active at all times	80
MAX_COORDAGENTS	Max. number coordinating agents	MAXAGENTS
INDEXREC	Index re-creation time	RESTART
MAX_QUERYDEGREE	Max. query degree of parallelism	1
INTRA_PARALLEL	Enable intra-partition parallelism	NO

DB2set Parameters

Use the `db2set` command to set the parameters (for example, `db2set DB2_RR_TO_RS = YES`) referenced in Table 21.

Table 21. db2set Parameters

Parameter	Explanation	Setting
DB2MEMDISCLAIM	For AIX only. When set to YES, DB2 agents explicitly request that the database server disassociate the reserved paging space from freed memory. Affects how DB2 frees shared memory.	YES
DB2MEMMAXFREE	For AIX only. Max. amount of unused memory in bytes retained by DB2 processes. It affects how DB2 frees shared memory and causes DB2 to release memory as soon as the size of the DB2 agent goes above the listed value.	3000000
DB2_HASH_JOIN	Turns off hash joins in optimizer.	NO
DB2_RR_TO_RS	Improves DB2 performance with Siebel eBusiness Applications. *Set to YES only in production environment servers.*	YES
DB2_MMAP_WRITE	Recommended setting only; you should evaluate this setting for your particular configuration and environment.	OFF
DB2_MMAP_READ	Recommended setting only; you should evaluate this setting for your particular configuration and environment.	OFF
DB2_CORRELATED_PREDICATES	When set to YES, the optimizer is able to determine whether predicates in a query are related, which permits DB2 to calculate the filter factor more accurately.	YES

Table 21. db2set Parameters

Parameter	Explanation	Setting
DB2_INDEX_2BYTEVARLEN	If you use DB2 *v7*, set this parameter to ON. Otherwise, you will not be able to create indexes with columns greater than 255 bytes. You do not need to set this parameter for DB2 *v8* because DB2 *v8* supports type-2 indexes.	ON
DB2_PIPELINED_PLANS	Tells the DB2 optimizer to favor pipeline execution plans—plans that are left deep and have no temporary result sets.	ON
DB2_INTERESTING_KEYS	Limits the number of execution plans generated by the DB2 optimizer.	ON
DB2_PARALLEL_IO	Useful when using RAID devices. For more information, see your DB2 vendor documentation.	ON
DB2_STRIPED_CONTAINERS	Useful when using RAID devices. For more information, see your DB2 vendor documentation.	ON
EXTSHM	This parameter only applies to AIX. Use this parameter only if you need to run 32-bit applications where more than 11 shared memory segments per process are required and you need shared memory of the shmat variety. Shmat is PowerPC hardware segment related, therefore memory is more efficiently managed and protected in all segments.For more information, see "EXTSHM" on page 207.	ON
DB2ENVLIST	When starting a DB2 UDB server and running EXTSHM, EXTSHM must be part of the DB2 environment. This parameter must be set when the database is created.	EXTSHM
DB2_NO_PKG_LOCK	To bind the Siebel package with siebbind, this package must be off.	OFF

EXTSHM

This parameter must be set when both the DB2 UDB and DB2 UDB EEE databases are created, and included in the script that starts them.

You should also include this parameter in the script that starts the DB2 client.

Additionally, this line must appear in the `sqllib/db2profile` for the DB2 UDB EEE server.

NOTE: After changing any of these settings, you must perform a `db2stop/db2start` to implement the changes in your DB2 database.

DB2 Database Configuration Parameters

The database configuration parameters can be set using the `update database configuration` command of the DB2 Command Line Processor or using the DB2 Control Center.

NOTE: See the IBM DB2 technical documentation for more information on modifying the database configuration parameters.

Table 22 describes DB2 database configuration parameters that differ from the default settings. However, these are guidelines only.

Set these parameters for *each* database within an instance on which you run your Siebel application. Use the configuration information below. For other parameters, accept the default settings.

Table 22. DB2 Database Configuration Parameters

Parameter	Explanation	Setting
`DFT_DEGREE`	Degree of parallelism (1 = turn query parallelism off)	`1`
`DFT_QUERYOPT`	Default query optimization class	`3`

Table 22. DB2 Database Configuration Parameters

Parameter	Explanation	Setting
DBHEAP	Database heap (4 KB)	7429(32bit) 10000(64bit)
CATALOGCACHE_SZ	Catalog cache size (4 KB)	5558(32bit) 8000(64bit)
LOGBUFSZ	Log buffer size (4 KB)	On AIX, 128 (32bit) 512(64bit)
UTIL_HEAP_SZ	Utilities heap size (4 KB)	5000(32bit) 10000(64bit)
LOCKLIST	Max. storage for lock list (4 KB)	25000 (The setting should never be smaller than this, but may be increased.)
APP_CTL_HEAP_SZ	Max. applications control heap size (4 KB). Controls the number of users that can be included within one connection to the database.	900 For customers using Siebel connection pooling feature, for best scalability, increment the parameter by 1200 for each 10 users per connection.
SORTHEAP	Sort list heap (4 KB) Lower values should be used for development environments; higher values for production. However, increasing this value can lead to insufficient memory on the DB server. Also this parameter may need to be set below the recommended range if you have a high number of Siebel users. Therefore, you need to always monitor DB server memory and performance to find the best setting for your environment.	1000-5000
STMTHEAP	SQL statement heap (4 KB)	8192

Table 22. DB2 Database Configuration Parameters

Parameter	Explanation	Setting
STAT_HEAP_SZ	Statistics heap size (4 KB)	14000(32bit) 16000(64bit)
MAXLOCKS	Percentage of lock lists per application	20(32bit) 30(64bit)
LOCKTIMEOUT	Lock timeout (sec.)	300
CHNGPGS_THRESH	Changed pages threshold	30
NUM_IOCLEANERS	Number of asynchronous page cleaners	Number of CPUs
INDEXSORT	Index sort flag	YES
SEQDETECT	Sequential detect flag	YES
DFT_PREFETCH_SZ	Default prefetch size (4 KB)	32
LOGRETAIN	Sequential or circular log files.	RECOVERY Set this parameter to RECOVERY in a *production environment.* Otherwise, you will lose data should your database crash. When LOGRETAIN is set to RECOVERY, you must also activate USEREXIT or implement another method to manage the archived logs, so that LOGPATH does not fill up.
MAXAPPLS	Maximum number of active applications.	Based on twice the number of users.
AVG_APPLS	Average number of active applications.	Depends on the environment.
MAXFILOP	Maximum DB files open per application.	500
LOGFILSIZ	Log file size (4 KB).	20000

Table 22. DB2 Database Configuration Parameters

Parameter	Explanation	Setting
LOGPRIMARY	Number of primary log files.	25-50 The value of LOGPRIMARY and LOGSECOND together may not exceed 128.
LOGSECOND	Number of secondary log files.	Up to 103 The value of LOGPRIMARY and LOGSECOND together may not exceed 128.
ESTORE_SEG_SZ	Deployments with servers with more than 4 GB of RAM can take advantage of this extended storage parameter. Use of this parameter also improves application sorting. It is recommended that you attach 4 KB and 16 KB buffer pools.	Initially 16000 but can be up to 65536
NUM_ESTORE_SEGS	See explanation of ESTORE_SEG_SIZ.	Initially 16
SOFTMAX	Percent log file reclaimed before soft checkpoint.	80
APPLHEAPSZ	Default application heap (4 KB).	2500
PCKCACHESZ	Package cache size (4 KB).	40000
NUM_IOSERVERS	Number of disks on which the database resides.	Number of disks

Creating the Database

To help you automate database instance creation, Siebel Systems provides a sample script, located in Appendix C, "Sample Database Creation Scripts," that you can edit to reflect your deployment's requirements to create the database objects.

It is recommended that you use a small, non-production environment for testing purposes.

After you install the Siebel Database Server files on the Siebel Server machine (described in Chapter 9, "Installing the Siebel Database Server for DB2 UDB"), you may modify the database table and index creation scripts to specify the file group names you created for Siebel tables and indexes. For more information, see "Overriding Default Storage Parameters" on page 219.

Capacity Planning

One of the most important factors to determine about your database is its overall size. In your planning, you will need to allocate space for system storage, temporary tablespace, log files, and other system files required by DB2, and space for Siebel data and indexes. If you allocate too little space for your system, performance will be affected and, in extreme cases, the system itself may be halted. If you allocate too much, you waste space.

The space needed by DB2 will vary primarily based on the total number and types of users supported. It is recommended that you consult the IBM DB2 technical documentation for more information on these requirements.

The space required for Siebel data and indexes will vary depending on what Siebel functionality you implement and the amount and nature of data supported. At a minimum, Siebel 7 requires that you size your DB2 database to between 1 and 1.5 GB.

The process for making accurate database size calculations is a complex one involving many variables. The following guidelines will assist you in the process:

- Determine the total number, and types, of users of Siebel eBusiness Applications (for example, 500 sales representatives and 75 sales managers).
- Determine the Siebel functionality that you will implement and the entities required to support them. Typically, the largest entities are as follows:
  - Accounts
  - Activities
  - Contacts
  - Forecasts
  - Opportunities

    - Service Requests

- Estimate the average number of entities per user (for example, 100 accounts per sales representative) and calculate an estimated total number of records per entity for your total user base.
- Determine the estimated data sizes for the largest entities by using standard sizing procedures for your specific database, and *Siebel Data Model Reference*. Calculate the average record size per entity and multiply by the total number of records. Typically, these entities span multiple physical tables, all of which must be included in the row size calculation.
- Add additional space for the storage of other Siebel data. A rough guideline for this additional amount would be one-half the storage required for these key entities.

  NOTE: Indexes typically require approximately the same amount of space as data.

- Allow for a margin of error in your total size calculation.
- Factor growth rates into your total size calculation.
- Create separate additional tablespaces and containers, preferably on separate disk devices, to better manage large or contentious tables and indexes.

Physical Device Layout

To make sure that your database performs well, create at least one container for each available logical or physical disk device. Data and log devices should reside on different disk spindles to reduce contention between random and serial I/O. All DB2 devices should reside on different disk spindles to minimize I/O contention. When this approach is not possible, spread devices containing database objects that are often used together across different spindles. These objects include tables, their indexes, and commonly joined tables.

NOTE: If you are using a high performance disk subsystem, you might choose a different physical device layout. Consult your DBA and the disk subsystem vendor for the optimal setup.

Allocating Sufficient DB2 Database Log Space

You must create database transaction logs large enough to support various large transactions used by the Siebel software. On DB2, three parameters affect the amount of log space reserved:

LOGFILSIZ. The size of the log file.

LOGPRIMARY. The number of log files to preallocate and use.

LOGSECOND. Extra log files that are allocated only if they are needed for a large transaction.

To run on a large system, create approximately 1 GB of total log space. It is recommended that you create 25-50 primary log files of 32 MB each. This is accomplished by setting the `LOGFILSIZ` database configuration parameter to 20000 and the `LOGPRIMARY` parameter to 25-50. In addition, to support very large transactions, set the `LOGSECOND` parameter to 128 minus the value of `LOGPRIMARY`.

Smaller systems may use less log space.

Log File Archiving

The database parameter `LOGRETAIN` is not enabled by default; this parameter may be important to you. When `LOGRETAIN` is set to `OFF`, the log files are reused in a circular fashion. This means that roll-forward recovery cannot be used. When `LOGRETAIN` is set to `RECOVERY`, all log files are kept on the system for the administrator to archive and delete.

If `LOGRETAIN` is set to `NO`, you can do only backup (restore) recovery and cannot do roll-forward recovery. This may have implications for your disaster recovery process related to your production Siebel Database Servers.

It is recommended that your database administrator (DBA) review the setting for this parameter.

Activating Bufferpools

A bufferpool is an area of main system memory that is used for holding pages of data that have been fetched from the tablespace. In DB2, each tablespace is associated with a bufferpool. Adding more space to a bufferpool will enhance the performance of the database.

You must have at least three bufferpools for the Siebel tablespaces. You can use the default bufferpool (called `IBMDEFAULTBP`) to buffer data pages from all the Siebel 4 KB tablespaces.

You must also create additional bufferpools with 16 KB and 32 KB page sizes for sorting and other SQL processing. A sample configuration is shown in Table 23.

Table 23. Sample Bufferpool Configuration

Bufferpool	Suggested Bufferpool Size	Page Size
`IBMDEFAULTBP`	50% of available memory	4 KB
`BUF32K`	32 MB	32 KB
`BUF16K`	25% of available memory	16 KB

Different operating systems support different maximum amounts of DB2 addressable memory. Depending on the memory configuration of a given server, the suggested pool sizes for `IBMDEFAULTBP` and `BUF16K` bufferpools may exceed these maximums, requiring you to allocate a smaller percentage. To determine optimal bufferpool sizes, use DB2 monitoring features.

Creating Tablespaces

The Siebel Database Server installation process specifies the tablespaces in which to store your Siebel tables and indexes.

A Siebel DB2 database consists of at least four tablespaces using database-managed space (DMS). Each tablespace can have one or more tablespace containers to store the data.

It is recommended that you use a small, non-production environment for testing purposes. You should create a *minimum* of four DB2 tablespaces to hold your tables and indexes—a 4 KB, a 16 KB, and a 32 KB tablespace, for your various sized tables, and a tablespace to hold your indexes. The tablespaces must be created as database-managed space.

To create the tablespaces

1 Create at least four DB2 tablespaces for tables of various sizes as shown in Table 24.

Table 24. DB2 Tablespace Values for Both Non-Unicode and Unicode-Enabled Databases

DB2 Tablespace Name	Bufferpool Name	Recommended Value	Description
Non-Unicode-Enabled Database			
SIEBEL_4K	IBMDEFAULTBP	2 GB	Tablespace name for tables with row sizes of at most 4005 bytes.
SIEBEL_16K	BUF16K	300 MB	Tablespace name for tables with row sizes from 4006 bytes through 16,293 bytes.
SIEBEL_32K	BUF32K	100 MB	Tablespace name for tables with row sizes greater than 16,293 bytes.
Unicode-Enabled Database			
SIEBEL_4K	IBMDEFAULTBP	3 GB	Tablespace name for tables with row sizes of at most 4005 bytes.
SIEBEL_16K	BUF16K	700 MB	Tablespace name for tables with row sizes from 4006 bytes through 16,293 bytes.
SIEBEL_32K	BUF32K	100 MB	Tablespace name for tables with row sizes greater than 16,293 bytes.

NOTE: It is recommended that you use the default tablespace names.

2 Create any additional tablespaces that may be used for storing individual tables, such as S_DOCK_TXN_LOG. If you expect to have large, heavily used tables, put these in their own tablespace.

3 Create at least a 4 KB, 16 KB, and 32 KB temporary tablespace to use for sorting and other SQL processing as described in the following sections. If you do not create them, your database will experience serious performance and stability problems. It is recommended that you use system-managed space (SMS) for all temporary tablespaces. These temporary tablespaces should also be expandable to 2 GB for storage purposes.

NOTE: Good practice dictates that you have many tablespaces that contain tables and indexes so that not all indexes reside in one tablespace. Otherwise, you may run out of pages.

4 Create at least one container per tablespace.

5 Record the tablespace names on the Appendix A, "Deployment Planning Worksheets."

NOTE: If you intend to use the DB2 Load utility to populate EIM tables, be aware that it makes the tablespace in which the EIM table resides unavailable for the duration of the load. Placing the EIM tables in one or more separate tablespaces allows concurrent activity on the database while the load utility is running.

Creating and Setting the Language Characteristics of Your Database

NOTE: As part of database creation, you must create and set the language characteristics of your database, even if you deploy in only one language. To do this, you must know which of the Siebel-supported languages your database will run, the codeset your database uses, the territory (also called the locale) for your language (such as Canadian French), and the collating sequence your users prefer. For production DB2 database servers, you can use any collating sequences, but for development only IDENTITY collating sequence is supported.

Setting the language characteristics of the database is part of the sample script in Appendix C, "Sample Database Creation Scripts."

CAUTION: When creating a Unicode-enabled database, make sure you set the parameter `DB2_INDEX2BYTEVARLEN` to `ON` or your database creation will fail.

To look up the Siebel language code, territory, and codeset for your database, see *System Requirements and Supported Platforms*.

Codeset

DB2 distinguishes between a code page (also known as a character set) and a codeset. A *codeset* is defined as a textual string that describes the character encoding standard used for the database, whereas a *code page* is a numeric representation of the same standard.

Territory

The territory, or region, is a combination of the language and the locale; for example, French would be a language example, while Canada or France would be locales in which French is used with regional differences.

Sort Order

The sort order is specified during the initial installation of a database and defines the way in which the database will sort character data. Sort order support depends on both the code page of the database and whether it will be used in a development or a production environment. For more information on supported sort orders, see *System Requirements and Supported Platforms* available on SupportWeb.

Development Environment Databases

Repository object names in your development database must sort in the same order that they would under UTF-16 binary sort order, because Siebel Tools uses this sort order internally. Otherwise, repository merges during future upgrades of the Siebel Database will fail. This is because in UTF-16 binary sort order codepoints U + E000 to U + FFFF sort after codepoints U + 10000 to U + 10FFFF, whereas in Unicode codepoint order they sort before. For information on production environment database restrictions, see *System Requirements and Supported Platforms* available on SupportWeb.

NOTE: You must make sure your data is exported and imported correctly.

To create your database

1. See *System Requirements and Supported Platforms* for the values that apply to your language.
2. Locate the primary(base) language your database will use, the territory for your language, and the applicable codeset.
3. Using the DB2 UDB Command Line Processor, enter the following command:

```
db2 create database dbname using codeset territory collate using
identity
```

where:

dbname is the alias for your database.

codeset is the textual representation of your code page.

NOTE: If you are installing a Unicode database, You must enter `UTF-8` as the codeset and retain the hyphen. UTF-8 is the parameter used for Unicode implementation on DB2 although the actual processing will use UCS-2. This is because when you specify UTF-8 as the encoding for the VARCHAR type, the encoding for the VARGRAPHIC type is automatically set to UCS-2, even though the UCS-2 is not specified as the parameter.

---

territory is the territory for the language your database runs in under that codeset.

Overriding Default Storage Parameters

Siebel Systems provides the option of overriding default storage parameters, such as the tablespaces you created using the instructions under "Creating Tablespaces" on page 214, in which specific tables or indexes are created. To override these defaults, edit the `ddl.ctl` file located in the `dbsrvr\DBSRVR_PLATFORM` directory.

NOTE: The `ddl.ctl` file should be modified only by a qualified DBA.

For each Siebel table, you can specify a tablespace by using the `Table Space` parameter. In the following example, the tablespace for the table `S_APP_VIEW` is set to `DATA1.`

As provided by Siebel Systems, the `.ctl` file does not set storage parameters for the objects it creates, so they will default to the parameters of the tablespaces in which they are created. However, the `Table Space` parameter will only work under the following conditions:

- The table does not yet exist (for example, when you are performing a new database installation).
- The table needs to be rebuilt, in other words, there are schema changes made to the table such that an `ALTER TABLE` command is not sufficient to implement the schema changes, requiring that the Siebel application drop and recreate the table.

As shown in the following example, you can use the `Table Space` parameter to set storage parameters for specific tables.

```
[Object 219]
Type = Table
Name = S_APP_VIEW
Column 1 = ROW_IDVARCHAR(15)NOTNULL
Column 2 = CREATEDTIMESTAMPNOTNULL DEFAULT %NOW%
Column 3 = CREATED_BYVARCHAR(15)NOTNULL
Column 4 = LAST UPDTIMESTAMP NOTNULL DEFAULT %NOW%
Column 5 = LAST_UPD_BYVARCHAR(15)NOTNULL
Column 6 = DCKING_NUMNUMERIC(22,7)DEFAULT 0
Column 7 = MODIFICATION_NUMNUMERIC(10,0)NOTNULL DEFAULT 0
Column 8 = CONFLICT_IDVARCHAR(15)NOTNULL DEFAULT '0'
Column 9 = NAMEVARCHAR(50)NOTNULL
Column10 = DESC_TEXTVARCHAR(255)
Column11 = LOCAL_ACCESS_FLGCHAR(1)
Table Space = data1
```

The following example illustrates how to override the defaults for specific tables and indexes.

```
[Object 7135]
Type = Table
Name = S_EVT_ACT
Group = Activity-1
Append Mode = Yes
Column 1 = ROW_ID WVARCHAR(15) NOTNULL
Column 2 = CREATED TIMESTAMP NOTNULL
DEFAULT %NOW%
Column 3 = CREATED_BY WVARCHAR(15) NOTNULL
Column 4 = LAST_UPD TIMESTAMP NOTNULL
DEFAULT %NOW%
Column 5 = LAST_UPD_BY WVARCHAR(15) NOTNULL
Column 6 = DCKING_NUM NUMERIC(22,7) DEFAULT 0
Column 7 = MODIFICATION_NUM NUMERIC(10,0) NOTNULL
DEFAULT 0
Column 8 = CONFLICT_ID WVARCHAR(15) NOTNULL
```

```
DEFAULT '0'
Column 9 = ACTIVITY_UID WVARCHAR(30) NOTNULL
DEFAULT 'x'
...
Column 166 = TODO_CD WVARCHAR(30)
Column 167 = USER_MSG_ID WVARCHAR(15)
Column 168 = WC_START_VIEW WVARCHAR(250)
Column 169 = WC_TYPE_CD WVARCHAR(30)

[Object 7136]
Type = Index
Name = S_EVT_ACT_F1
Table = S_EVT_ACT
Column 1 = CON_PRDINT_ID ASC
Index Space = S_EVT_ACT_TBS_IDX

[Object 7137]
Type = Index
Name = S_EVT_ACT_F10
Table = S_EVT_ACT
Allow Reverse Scans = Yes
Column 1 = TARGET_OU_ID ASC
Column 2 = APPT_START_DT DESC
Column 3 = ROW_ID ASC
Table Space = S_EVT_ACT_TBS

[Object 7138]
Type = Index
Name = S_EVT_ACT_F11
Table = S_EVT_ACT
Column 1 = PAR_EVT_ID ASC
Index Space = S_EVT_ACT_TBS_IDX
```

Installing the Siebel Database Server for DB2 UDB 9

The installation and configuration of the Siebel Database Server consists of several tasks. Table 25 on page 223 illustrates the sequence of steps.

Table 25. Siebel Database Server Installation and Configuration Tasks

Who Performs It?	Task
System Administrator	**1** Fill out your copy of Appendix A, "Deployment Planning Worksheets," with all RDBMS-specific information. **2** If you intend to implement clustering on this Siebel Database Server, review IBM documentation on how to do this.
Database Administrator	**3** Create the DB2 Database instance. See Chapter 9, "Installing the Siebel Database Server for DB2 UDB."
System Administrator	**4** Install the database software. See "Installing the Database Server Software for DB2" on page 227. **5** Review the software installation. See "Reviewing the Software Installation of Database Server for DB2" on page 231. **6** If you have a multilingual deployment, review and, if needed, reset the default for Universal Time Zone on your OS. See "Setting Up Your Environment to Support Global Time Zone" on page 233.
Database Administrator	**7** Create tableowner and administrator accounts. See "Creating Tableowner and Administrator Accounts for Database Server on DB2" on page 234.

Table 25. Siebel Database Server Installation and Configuration Tasks

Who Performs It?	Task
Siebel Administrator	**8** Install stored procedures and UDFs. See "Installing Stored Procedures and User-Defined Functions on DB2" on page 236. **9** Install seed data, tables, and indexes. See "Installing Database Server Components for DB2" on page 238. **10** Review the database installation log files for errors. See "Reviewing the Log Files for Database Server Installation for DB2" on page 243. **11** Import the Siebel Repository. See "Importing the Siebel Repository on Database Server for DB2" on page 244.
Siebel System Administrator	**12** Review the repository import log files for errors. See "Reviewing the Log Files for Repository Import on Database Server for DB2" on page 248. **13** Conduct troubleshooting to fix any errors and rerun the script, if necessary. See "Troubleshooting Siebel Repository Import for Database Server on DB2" on page 249. **14** Review system preferences for your code page. See "Verifying System Preferences for Database Server Installation on DB2" on page 250. **15** Install multilingual seed data (optional). See "Installing Multilingual Seed Data on Database Server for DB2" on page 251. **16** Import an additional language to your repository (optional). See "Importing a New Language to Your Repository on Database Server on DB2" on page 251.
Database Administrator	**17** Populate the Siebel File System. See "Installing Multilingual Seed Data on Database Server for DB2" on page 251.

About the Database Server

The Siebel Database Server stores the data used by Siebel eBusiness Applications. Siebel Dedicated Web Clients (Siebel Mobile Web Clients in connected mode), Siebel Tools Clients, and Siebel Server components connect directly to the Database Server and make changes in real time. Dedicated Mobile Web Clients download a subset of the server data to use locally, periodically synchronizing with the Database Server through the Siebel Server to update both.

Installation and configuration of the Siebel Database Server software configures the Siebel Database automatically.

Pre-Installation Tasks for Database Server Installation for DB2

Before installing the Siebel Database Server, complete the following tasks:

- Obtain the services of a qualified database administrator who will assist you during your installation.
- Make sure that DB2 is properly configured, as documented in Chapter 8, "Creating the DB2 Universal Database for Windows and UNIX."
- Allocate and configure disk space appropriate to your installation requirements and DB2, as documented in Chapter 8, "Creating the DB2 Universal Database for Windows and UNIX."
- Complete all the steps in Chapter 5, "Installing the Siebel Gateway" and Chapter 6, "Installing the Siebel Server" to install at least one Siebel Server.
- If this Enterprise will be multilingual, make sure that you install all the languages that you want the Siebel Database to support onto the associated Siebel Server.
- If you have not already done so, copy the Deployment Planning Worksheet, located in Appendix A, "Deployment Planning Worksheets," and fill out the appropriate page with the following:

- **DB2 database alias.** This is the DB2 database alias that you created when installing the DB2 software.
- **Tableowner (database owner) account user name and password.** DB2 requires that you assign a user name and password to each database you create. Prior to installing the Siebel Database Server tablespaces and indexes, you will edit the `grantusr.sql` script and enter this information. `SIEBEL` is the default tableowner account user name and password for Siebel applications.
- **Siebel 4-KB tablespace.** Tablespace on the DB2 server where the 4 KB Siebel data tables are stored.
- **Siebel 16-KB tablespace.** The name of the tablespace on the DB2 server where tables reside whose row length is equal to or greater than 4005 bytes, but less than 16384 bytes.
- **Siebel 32-KB tablespace.** The name of the tablespace on the DB2 server where tables reside whose row length is 32768 bytes or greater.
- **Siebel Index tablespace.** The name of the space on the DB2 server where the Siebel indexes are stored.

Database Server Software Installation for DB2

Installation of the Siebel Database Server software provides files with which to install database components and to import the Siebel Repository.

Installation of the Siebel Database Server software consists of the following tasks:

- "Installing the Database Server Software for DB2" on page 227
- "Reviewing the Software Installation of Database Server for DB2" on page 231
- "Setting Up Your Environment to Support Global Time Zone" on page 233
- "Installing Stored Procedures and User-Defined Functions on DB2" on page 236

Installing the Database Server Software for DB2

Follow the steps below to complete installation on each computer you intend to use as a Siebel Database Server. You can have only one database per Siebel Enterprise Server.

To install the Siebel Database Server software

1. Install the *UNIX_OS Server Programs, Siebel Enterprise Server Base* CD-ROM onto the network

   where:

   UNIX_OS = your UNIX operating system, such as Solaris, HP-UX, or AIX.

   NOTE: The volume label for the CD is `sea`*`UNIX_OS`*`sesbase` or `sea`*`UNIX_OS`*`siabase`, as appropriate to the Siebel applications you are installing; it may not be required, depending on how you access the CD-ROM.

   As a convenience, you may also want at this time to install the `sea`*`UNIX_OS`*`ses`*`language`* or `sea`*`UNIX_OS`*`sia`*`language`* CD ROM or CD-ROMs, as applicable, into the drive of the machine on which you want to install the Siebel Database Server.

2. Verify the directories and permissions to those directories into which you will install the product. You must have write and execute permission.

3. Navigate to the `/ses` directory on the CD-ROM and open a new shell.

4. Unset any Siebel-specific environment variables. To view current environment variable settings, enter `env` in the shell window.

5. To start the Siebel Database Server file installation, enter the following command, appending any flags you may also want to use, as described in "Installing in Console Mode" on page 104.

   `./setup`*`UNIX_OS`*

   The Installer Welcome screen appears.

6 Click Next.

If you have installed other Siebel components on the same machine, the installer displays the message that an existing installation has been found.

7 Depending on whether you are installing your Siebel Database Server files for the first time or adding a new language to an existing instance, take the appropriate action, then click Next:

- To install the server software in a new instance, select None as the default and click Next. Proceed to Step 8.
- To install a new language in an existing instance, select the displayed instance and click Next. Proceed to Step 12.

  See also "Installing Multiple Siebel Language Packs on the Siebel Server" on page 149 for important additional information on this topic.

The Installer Path screen appears.

8 Enter the fully qualified path to the installation directory and click Next.

The Installer Product Selection screen appears.

9 Choose to install the Siebel Database Server and click next.

The Installer Setup Type screen appears.

10 Choose the type of installation you want to perform and click Next.

- **Typical.** Installs Siebel Database Server components for all supported RDBMS.
- **Compact.** Compact installation is not a supported option.

- **Custom.** Lets you customize your installation by choosing the specific components you want to install.

  NOTE: Use this option to install IBM DB2 UDB for UNIX and Windows.

  CAUTION: If you select Custom installation, make sure that you also select Sample Database the first time you install the software. When the Sample Database is installed, additional files are copied to the Siebel File System directory after configuration. These files are required to read attachments. For more information, see "Populating the Siebel File System for Database Server on DB2" on page 253.

11 If you selected Custom, you are prompted to select installable components. Select both IBM DB2 UDB for UNIX and Windows and the Siebel Sample Database.

The Installer Language Selection screen appears.

12 Choose the language or languages to be installed and click Next.

All servers are installed with at least one (base) language. Additional languages can be installed at a later date, if desired. For more information, see *Global Deployment Guide*.

When installing languages at a later date, you must also reinstall any patches that have been run on the directory.

NOTE: In a Unicode-enabled database environment, you can install any of the available Siebel language packs. In a non-Unicode database environment, you must consider the correlation of the language packs you want to install and the characters supported by your database code page. For example, in a Western European code page database, you can only install Western European language packs such as English, French, Spanish, or German language packs. And in a Japanese code page database, you can only install Japanese or English language packs.

For a list of supported code pages and encoding strategies, see *System Requirements and Supported Platforms*.

13 A confirmation screen appears displaying the installation parameters you have selected. Click Next.

The installer begins to copy all of the files to the location you selected. After the files have been copied to the installation location, a warning screen appears with the following message:

`Setup did not find the Siebel Language Code language pack on the current media. Please insert the CD containing the Siebel Language Code and select setupUNIX_OS from the Siebel Language Code folder.`

14 Locate `seaUNIX_OSses language` or `siaUNIX_OSses language`, as appropriate, on the target machine (where *language* stands for the Language Pack you are installing) browse to `setupUNIX_OS`, and click OK.

- If installing Siebel Enterprise Applications, proceed to the information concerning Step 16.

- If you are installing Siebel Industry Solutions, you may also be prompted to install an additional CD, depending on the language you are installing. In this case, proceed to Step 15.

  CAUTION: Siebel Industry Solutions customers only: If the language you are installing requires multiple language CD-ROMs, your OS platform is Solaris, and you have auto-mount enabled, you must specify `/cdrom/cdrom0` as the mount point for the first language CD, not `/cdrom/siasolses`*`language`*`1`.

15. If prompted to insert a second language CD, remove the first CD-ROM and insert the second, then click OK.

    When installation of all the language files has been completed, the installer prompts you for the Base CD-ROM again:

    ```
    Please re-insert the base CD and browse to the setupUNIX_OS file
    to enable setup to continue.
    ```

16. Navigate again to the base CD mount point on the network, locate `ses/setup`*`UNIX_OS`*`,` and click OK.

17. Click Finish.

Reviewing the Software Installation of Database Server for DB2

Review the directory structure created by the Siebel Database Server installation. The installation creates a `/dbsrvr/db2udb` subdirectory under the Siebel Server installation directory.

The directory structure should be as follows:

```
db2udb
  siebproc
  upgrade
  sqlproc
```

db2udb. Scripts specific to DB2 UDB, including upgrade scripts for previous versions of Siebel eBusiness Applications.

siebproc

aix. User Defined Functions (UDFs) and stored procedures for DB2 AIX systems.

hpux. UDFs and stored procedures for HP-UX systems.

solaris. UDFs and stored procedures for DB2 Solaris systems.

win32. UDFs and stored procedures for Windows 2000 systems.

upgrade. Directories containing files to enable upgrade from specific versions of Siebel eBusiness Applications supported for upgrade to the current release.

sqlproc. Contains the SAR (stored procedure archive) files for all supported OS platforms installed on the server.

language. Contains language- and database-specific files for the ancestor repository and supporting files. For example, enu would contain language-specific U.S. English files, or deu would contain German-language-specific files. Additional subdirectories will exist under this level, based on the Language Packs that you install.

Setting Up Your Environment to Support Global Time Zone

Global deployments typically span multiple time zones, making it difficult to manage time-sensitive information that must be exchanged among customers and employees working around the world. Siebel Systems' Global Time Zone feature helps your organization meet contractual response times and commitments in spite of time zone differences.

The Global Time Zone feature converts and stores date and time data, using the Universal Time Zone (UTC) standard, which is equivalent to Greenwich Mean Time, but without daylight savings time.

If you intend to operate your deployment with the Global Time Zone feature enabled, you must also set the operating system of your database servers to UTC time, or its equivalent. It is recommended that you change the time zone for the hosted application and not for the entire server.

CAUTION: The language locale can affect how time is displayed. This is especially critical on Solaris, which displays time by default in 12-hour formats without A.M. or P.M. For more information, refer to the *Global Deployment Guide*.

To change the operating system time, consult the vendor documentation for your operating system. For more information on administering Siebel's Global Time Zone feature, see *Global Deployment Guide*.

Although enabling this feature is optional in Siebel 7, it is strongly recommended that you operate your production environment with Global Time Zone enabled.

NOTE: The Global Time Zone parameter (Universal Time Coordinated system preference) is enabled (set to `TRUE`) in Siebel 7 by default. If you do not want to enable Global Time Zone feature, you must reset this parameter to `FALSE` through Server Manager by navigating to Application Administration > System Preferences.

Creating Tableowner and Administrator Accounts for Database Server on DB2

When operating the DB2 UDB Database, the database administrator must manually create the tableowner account (default: *SIEBEL*), the Siebel Administrator account (default: *SADMIN*), and the *sse_role* group at the operating system level. You must then add the two accounts to the *sse_role* group.

NOTE: On Solaris, the *sse_role* group cannot be created using the *admintool* due to the use of an underscore in the name. Instead, use the command *groupadd sse_role* to create the *sse_role* group and ignore the `UX: groupadd: sse_role name should be all lower case or numeric` warning.

CAUTION: You can add users to the installation group *sse_role* group and permit them to use administrative commands to start, stop or otherwise administer the Siebel Server or components. However, you must change the permissions on the directory to enable write access. Use `chmod -R 775` on $*SIEBEL_ROOT*.

Execute the `grantusr.sql` script against your Siebel Database Server to grant the appropriate privileges to these users. The `grantusr.sql` script must be run before you configure the Siebel Database Server.

This script is located in the $*DBSRVR_PLTFRM_ROOT* subdirectory of your $*DBSRVR* directory. Your database administrator should review and run this script, which performs the following functions:

- Grants the appropriate permissions to the Siebel tableowner account that will *own* all the database objects for your Siebel deployment.

- Creates a role (*sse_role*) with create session privileges.

NOTE: You cannot create the LDAPUSER account by running grantusr.sql. This account must belong to the sse_role group and be created by the database administrator or the UNIX network administrator, as appropriate. For more information about LDAP, see *Security Guide for Siebel eBusiness Applications*.

CAUTION: Do not change the name of the Siebel Administrator Account, SADMIN. This account must be created for you to log on to Siebel as the Siebel Administrator.

Tableowner and Administrator Account for Siebel Marketing

The tableowner or the database User ID used for Siebel Marketing requires additional rights at the database level within the OLTP schema. You must grant drop table, drop index, create table, and create index rights to this user. For more details, see *Siebel Marketing Guide*.

To run the grantusr.sql script

1. Run the grantusr.sql script, using an account with DBA privileges.

   The usual DB2 System Administration account will be called db2inst1 on UNIX.

2. Enter the following commands:

   ```
   db2 connect to DB2database Alias user Instance Owner Username
   using password
   ```

```
db2 -vf /SIEBEL_ROOT/db2udb/grantusr.sql
```

where:

DB2database Alias is the DB2 alias you use.

Instance Owner Username is the login ID of the instance owner.

password is the password for the database instance (length and allowable characters depend on the rules of your underlying RDBMS platform).

SIEBEL_ROOT is your Siebel root directory.

NOTE: You must specify the full path to the $*SIEBEL_ROOT* directory.

The script prompts you for the default tablespace in which your Siebel objects are to be created.

3 Enter the tablespace name you recorded in the copy you made of Appendix A, "Deployment Planning Worksheets."

Installing Stored Procedures and User-Defined Functions on DB2

To install the stored procedures and user-defined functions on your Siebel Database Server, you must first transfer them to the Siebel Database Server, and you must have installed the Siebel Database Server components. (For information on installing Siebel Database Server components, see "Installing the Database Server Software for DB2" on page 227.)

The user-defined functions (UDFs) and stored procedures must be transferred to and installed on the Siebel Database Server to support the Siebel product. Any method that transfers the necessary files to the correct location on the Siebel Database Server is acceptable.

Copying and Installing Stored Procedure Code on DB2

To copy and install the stored procedure code, follow the procedure below appropriate to your Siebel Database Server's operating system.

For information on how to perform basic DB2 tasks, see IBM's *Quick Beginnings* Guide on IBM's online *Browse V7 Bookshelf*.

To copy the stored procedure file

1 Log on to the Siebel Server source installation machine, and navigate to the source installation subdirectory that contains the Siebel Database installation objects.

NOTE: If you are deploying with DB2 v8.1 64bit on AIX, Solaris, or HP-UX, then you need to copy the siebproc64 library file to the sqllib/function directory and rename it from `siebproc64` to `siebproc`.

`$`*`DBSRVR_ROOT`* `/db2udb/siebproc/`*`DBSRVR_OS`*`.`

where:

`DBSRVR_OS` is the operating system your Siebel Database Server runs on; for example, `AIX`.

NOTE: Permissions for `siebproc` should be `-rw-r----` (read-write for the owner, read for the group, and neither read nor write for all others). The owner of the file should be the instance owner, and the group should be the group to which the instance owner belongs.

2 Put the file `siebproc` into the `function` subdirectory within the DB2 UDB instance directory (where DB2 UDB is installed) on the Siebel Database Server.

For example, on AIX, this location might be `$`*`INST_HOME/sqllib/function.`*

Configuring the Database Server for DB2

Configuring the Siebel Database Server for installation consists of the following tasks:

- "Installing Database Server Components for DB2" on page 238
- "Importing the Siebel Repository on Database Server for DB2" on page 244

You will perform these tasks using the Siebel Database Server Configuration Wizard.

Installing Database Server Components for DB2

When you choose `Install a new Siebel Database` from the Siebel Database Server Options menu on the Siebel Database Server Configuration Wizard, the utility performs the following tasks:

- Creates Siebel tables and indexes
- Imports Siebel seed data
- Sets system preferences

To install Siebel database server components for DB2

1. Navigate to `$`*`SIEBEL_HOME`* and source environment variables, using one of the following commands, depending on the type of shell you use:

   Korn or Bourne shell

   ```
   . ./siebenv.sh
   ```

   TIP: Make sure there is a space between the initial period and `./siebenv.sh`.

   C shell

   ```
   source siebenv.csh
   ```

   where:

   `$`*`SIEBEL_HOME`* is the location of the Siebel Server root directory.

2. Verify whether the values `$`*`SIEBEL_ROOT`* and *`LANGUAGE`* are correctly set or are empty by entering:

   ```
   env
   ```

   If the variables are incorrect or missing, reset them using one of the following commands, as appropriate to the shell you use:

   Korn or Bourne shell

   ```
   SIEBEL_ROOT=New Value ; export SIEBEL_ROOT
   ```

```
LANGUAGE=New Value; export LANGUAGE
```

C shell

```
setenv SIEBEL_ROOT New Value

setenv LANGUAGE New Value
```

3 Navigate to $*SIEBEL_ROOT*/bin and run the following script:

```
dbsrvr_config.ksh
```

This launches the Siebel Database Server Configuration Wizard.

The script begins by displaying the current settings for the *SIEBEL_ROOT* and *LANGUAGE* variables and prompts you as to whether these settings are correct.

4 Confirm whether or not the settings are correct by entering either Y or N.

NOTE: If either the *SIEBEL_ROOT* or *LANGUAGE* value is not set or is incorrect, you must correct them before proceeding.

The Configuration Wizard validates the existence of the $*SIEBEL_ROOT* directory.

5 Specify the path of your Siebel Server root directory, or press ENTER to accept the current setting.

The Configuration Wizard then prompts you for the path for the Siebel Database Server root directory.

6 Specify the path of your Siebel Database Server root directory, or press ENTER to accept the current setting.

The Configuration Wizard proceeds to display the list of supported database platforms:

```
Select the RDBMS Platform:

1- IBM DB2 UDB for UNIX and Windows
2- Oracle Database Enterprise Edition
```

7 Enter `1` to select `IBM DB2 UDB for UNIX`.

The script displays the Siebel Database Operation menu, as follows:

```
Select the Siebel Database Operation

1- Install Database
2- Upgrade Database
3- Import/Export Repository
4- Migrate Repository
5- Run Database Utilities
```

8 Enter `1` to select `Install Database`.

The Siebel Database Server Configuration Wizard prompts you as to whether you ran `grantusr.sql` to set up your tableowner and administrator accounts.

9 Enter `Y` to confirm or `N` to exit the Configuration Wizard to run this script.

NOTE: These accounts must be in place or you will not be able to complete installation of your seed data, tables, and indexes.

If you elected to proceed, the script displays the Installation Options menu:

```
Select one of the following options:

1- Install Siebel Database
2- Add a language to an existing Siebel Database
```

10 Enter `1` to install the Siebel Database components for this database.

11 Verify the type of code page for your database, then enter the number that corresponds to the database encoding value for your database:

```
1- Unicode
2- Non-Unicode
```

CAUTION: Carefully choose the correct option for your database to prevent installation of the wrong datatypes. The database will not be able to create Unicode datatypes on a non-Unicode page setting, so verify this setting carefully before choosing the option.

The program then displays the list of currently installed languages.

12 Enter the number corresponding with the language in which you want to run your database.

NOTE: This is referred to as the *primary(base) language* for your database.

13 Specify the ODBC data source name; for example, `siebsrvr_siebel`.

14 Enter the user name for the Siebel administrator for your database; for example, `SADMIN`.

15 Enter the password for the specified database administrator account.

16 Enter the DB2 database tableowner name; for example, `siebel`.

17 Enter the database tableowner password; for example, `db2`.

The Database Server OS screen appears.

18 Enter the number that corresponds to your Siebel Database Server operating system:

```
1- Windows

2- Solaris

3- AIX

4- HP-UX
```

19 Enter the name of your index tablespace.

20 Enter the name of your 4 KB tablespace.

21 Enter the name of the 16 KB tablespace.

22 Enter the name of the 32 KB tablespace.

After you have completed your database specifications, the Configuration Wizard displays the list of configured values and prompts you as to whether you want to launch the Siebel Upgrade Wizard (`srvrupgwiz`).

23 Enter `Y` to confirm your specifications and launch the Upgrade Wizard or `N` to reject the values and exit the Configuration Wizard.

- If you need to change the values you previously entered, rerun the Configuration Wizard by running `dbsrvr_config.ksh`. This will allow you to reconfigure with different values.
- If a program or system error occurs and you need to rerun the Siebel Upgrade Wizard, starting at the point at which the wizard failed, by navigating to `$`*`SIEBEL_ROOT`*`/bin` and entering the following command:
  `srvrupgwiz -m master_install.ucf`

If the upgrade was successful, the Siebel Upgrade Wizard displays a success message when installation is complete.

Reviewing the Log Files for Database Server Installation for DB2

The Siebel Database Server component installation creates a number of log files, such as `srvrupgwiz.log` and `srvrupgwiz1.log` (which increments to additional logs) within the `$`*`SIEBEL_ROOT`*`/log` subdirectory, which you must review for any errors.

When you install seed data, tables, and indexes for DB2 UDB, it generates the following log files.

```
ddl_ctl.log
dataimp_prim.log
dataimp_prim_lang.log
siebproc.log
seeddb2.log
seedver.log
seedssa.log
ddlview.log
loadstats.log
grantstat.log
updatestats.log
db2ddl.log
set_unicode.log
set_utc_on.log
```

When you install your primary(base) language Pack, it creates a log file with the name `dataimp_prim_lang.log`.

Acceptable Errors for Database Server Installation for DB2

The log files may include errors that are expected and benign. Compare any error messages found in the log files to the sample error messages in the `errors.txt` file, which is located in the installation subdirectory for your database platform; for example, `db2udb`. (If a log file is not listed in the `errors.txt` file, then there are no acceptable error messages for that log file.) No further action is required if the log files contain errors listed in the `errors.txt` file.

NOTE: Only one of each type of error occurring in a particular log file appears in the `errors.txt` file.

If you find errors not listed in the `errors.txt` file, correct the condition that caused the errors, and rerun the Upgrade Wizard. The wizard will restart from the point where it left off.

Do not review error numbers alone, since these may have changed following installation of a new driver version. Instead, compare the actual error descriptions to find out which are acceptable errors for this platform.

CAUTION: Although other errors are rarely encountered, this review is critical. Certain errors, such as a failure to create indexes, may result in performance problems or anomalous behavior in Siebel eBusiness Applications.

Importing the Siebel Repository on Database Server for DB2

As a final step, you must import the Siebel Repository. This populates all the repository tables in the Siebel Database Server with the new Siebel eBusiness Applications, version 7 application objects.

NOTE: Regardless of how many Siebel eBusiness Applications you are using (for example, Siebel Sales, Siebel Service, and Siebel Marketing), you will load the repository tables only once.

To import the repository

1. Navigate to `$`*`SIEBEL_HOME`*`/bin` and source environment variables, using the instructions provided in "Installing Database Server Components for DB2" on page 238.
2. Verify whether the values `SIEBEL_ROOT` and `LANGUAGE` are correctly set or are empty, again, according to the previous instructions.
3. Navigate to `$`*`SIEBEL_ROOT`* `/bin` and run the following script:

```
dbsrvr_config.ksh
```

This launches the Siebel Database Server Configuration Wizard.

NOTE: You must have read, write, and execute permission to run this script successfully.

The script begins by displaying the current settings for the `SIEBEL_ROOT` and `LANGUAGE` variables and prompts you as to whether these settings are correct.

4. Confirm whether the settings are correct by entering either `Y` or `N`.

NOTE: If either the `SIEBEL_ROOT` or `LANGUAGE` value is not set or is incorrect, you must correct them before proceeding.

---

5. Specify the path of your Siebel Server root directory, or accept the default by pressing `ENTER`.
6. Specify the path of your Siebel Database Server root directory, or accept the default by pressing `ENTER`.

   The script displays the RDBMS Platform screen.

```
Select the RDBMS Platform:

1- IBM DB2 UDB for UNIX and Windows

2- Oracle Database Enterprise Edition
```

7. Type `1` and press `ENTER` to select `IBM DB2 UDB for UNIX and Windows`.

   The script displays the Siebel Database Operation menu, as follows:

```
Select the Siebel Database Operation

1- Install Database
2- Upgrade Database
3- Import/Export Repository
4- Migrate Repository
5- Run Database Utilities
```

8 Type `3` and press `ENTER` to select `Import/Export Repository`.

The script displays the Repository Operations menu:

```
Select one of the following options:

1- Import Repository
2- Add language to an existing Repository
3- Export Repository
```

9 Type `1` and press `ENTER` to select `Import Repository`.

The script displays the Import Repository options menu:

```
Specify your import repository option:

1- Import Siebel Repository
2- Import Custom Repository
```

10 Specify the type of Repository you want to import.

To import the Siebel Repository, type `1` and press `Enter`.

The script displays the list of available Language Packs.

11 Enter the number that corresponds to the Language Pack you want to install.

NOTE: The Language Pack you select must match the primary(base) language you selected during installation of the Siebel database schema.

NOTE: In a Unicode-enabled database environment, you can install any of the available Siebel language packs. In a non-Unicode database environment, you must consider the correlation of the language packs you want to install and the characters supported by your database code page. For example, in a Western European code page database, you can only install Western European language packs such as English, French, Spanish, or German language packs. And in a Japanese code page database, you can only install Japanese or English language packs.

For a list of supported code pages and encoding strategies, see *System Requirements and Supported Platforms*.

12 Enter the ODBC data source name; for example, `SiebSrvr_siebel`.

NOTE: The Siebel Server installation process automatically creates the data source, using the format `SiebSrvr_`*`enterprise_server_name`*.

13 Enter the user name for the Siebel administrator for your database; for example, `SADMIN`.

14 Enter the password for the specified database administrator account; for example, `DB2SADMIN`.

15 Enter the DB2 database tableowner name; for example, `siebel`.

16 Enter the database tableowner password; for example, `db2`.

17 Enter the name of your repository or accept the default; for example, `Siebel Repository`.

18 Enter the name of your repository file name or accept the default; for example, `mstrep.dat`.

After you have completed your import Repository specifications, the Configuration Wizard displays the list of configured values and prompts you as to whether you want to launch the Siebel Upgrade Wizard (`srvrupgwiz`).

19 Indicate whether or not you want to run the Upgrade Wizard:

- To confirm your specifications and launch the Upgrade Wizard, enter `Y`.
- To reject the values and exit the Configuration Wizard, enter `N`.

If you need to change the values you previously entered, rerun the Configuration Wizard by running the `dbsrvr_config.ksh`. This will allow you to reconfigure with different values.

If a program or system error occurs and you need to rerun the Siebel Upgrade Wizard, you can do so, starting at the point at which the wizard failed, by navigating to `$`*`SIEBEL_ROOT`*`/bin` and entering the following command:
`srvrupgwiz -m master_imprep.ucf`

If the upgrade was successful, the Siebel Upgrade Wizard displays a success message when installation is complete.

Reviewing the Log Files for Repository Import on Database Server for DB2

The repository import process creates a number of log files, such as `srvrupgwiz.log` and `srvrupgwiz1.log` (which increments to additional logs) within the `$`*`SIEBEL_ROOT`*`/log` subdirectory, which you must review for any errors. Further log files are created when the upgrade wizard encounters a problem and the user attempts a retry.

When you import a repository with a new language, it creates the following special log files:

```
imprep_prim.log
gen_updatestats_imprep.log
updatestats_imprep.log
```

Acceptable Errors for Repository Import for Database Server Installation onDB2

The log files may include errors that are expected and benign. Compare any error messages found in the log files to the sample error messages in the `errors.txt` file, which is located in the Siebel Database Server platform subdirectory; for example, `db2udb`. (If a log file is not listed in the `errors.txt` file, then there are no acceptable error messages for that log file.) No further action is required if the log files contain errors listed in the `errors.txt` file.

NOTE: Only one of each type of error occurring in a particular log file appears in the `errors.txt` file.

If you find errors not listed in the `errors.txt` file, correct the condition that caused the errors, and rerun the Upgrade Wizard.

Do not review error numbers alone, since these may have changed following installation of a new driver version. Instead, compare the actual error descriptions to find out which are acceptable errors for this platform.

CAUTION: Although other errors are rarely encountered, this review is critical. Certain errors, such as a failure to create indexes, may result in performance problems or anomalous behavior in Siebel eBusiness Applications.

Troubleshooting Siebel Repository Import for Database Server on DB2

Typical problems that may occur at this stage consist of the following:

- Importing a repository with the same name as an existing repository.
- Inability to allocate pages.
- DB2 errors regarding the settings for DB2 configuration parameters such as `APP_CTL_HEAP_SZ`. These must be reset, in most cases, to higher values, since Siebel Systems guidelines suggest only minimum values.

The above errors should appear in the log files produced by the repository import process.

Post-Installation Tasks for Database Server Installation on DB2

Perform the following tasks after you complete your installation of the Siebel Database Server:

- "Verifying System Preferences for Database Server Installation on DB2" on page 250
- "Installing Multilingual Seed Data on Database Server for DB2" on page 251
- "Importing a New Language to Your Repository on Database Server on DB2" on page 251
- "Populating the Siebel File System for Database Server on DB2" on page 253

Verifying System Preferences for Database Server Installation on DB2

After you complete installation and configuration of your Siebel Database Server, you must verify system preferences for the Siebel application in Siebel Tools. For installation instructions for Siebel Tools, see *Siebel Tools Reference*.

To verify system preferences

1. Launch Siebel Tools and navigate to Screens > System Administration > System Preferences.
2. Look for `System Preference Name = Enterprise DB Server Code Page` and verify that the value has been set correctly, based on the value that you selected during installation of the database server components ("Installing Database Server Components for DB2" on page 238). For a list of the appropriate values, see Table 26 on page 250.

NOTE: The Code Page value must be in lowercase, for example, `utf-16`.

Table 26. Acceptable Values for Enterprise DB Server Code Page

Value	Language
`utf-16`* (Unicode)	All
`cp932` (or equivalent)	Japanese
`cp1252` (or equivalent)	Western European

*Also known as UCS-2; although the value entered must be `utf-16`.

3. If your database is Unicode-enabled, verify that column `UNICD_DATATYPS_FLG` in table `S_APP_VER` has the Unicode flag set correctly, as illustrated below:
   - Codepage (non-Unicode) = `N`
   - Unicode DB2 Server = `Y`

CAUTION: The data type flag must be uppercase!

Installing Multilingual Seed Data on Database Server for DB2

If your organization requires data to be in multiple languages, you must install multilingual seed data (for example, lists of views, responsibilities, or system preferences). To do this, you add new Language Packs to your database after you have installed the primary(base) language for your Siebel Database Server. This populates the List of Values (LOV) with seed data in the new language.

Only after you successfully install seed data in your primary(base) language can you add seed data in other languages to your database.

CAUTION: You must have already installed those languages you want the Siebel Database for the Enterprise to support on the Siebel Server associated with it before you add them to the database.

To install multilingual seed data

1. Insert or mount the *Solaris|AIX Server Programs Base* CD-ROM and follow the instructions under "Installing the Database Server Software for DB2" on page 227 until you get to Step 7, select `Add a new language to an existing instance.`
2. Follow the rest of the prompts, inserting the required number of Language Pack CDs for your Siebel product.
3. When language installation is complete, follow the procedure for "Installing Database Server Components for DB2" on page 238 up to Step 10, but enter `2` to select `Add a language to an existing Siebel Database`.
4. Answer the remaining prompts as you did when you installed your primary(base) language seed data.
5. Enable the multilingual list of values (MLOV) capability within Siebel eBusiness Applications. For information, see *Siebel Tools Reference*.

Importing a New Language to Your Repository on Database Server on DB2

After you successfully import your Siebel Repository in its primary(base) language, you may add additional languages to it.

By adding a new language to your repository, you populate rows of localizable information, which allows Siebel eBusiness Applications to operate better in the new language.

Regardless of how many Siebel eBusiness Applications you are using (such as Siebel Sales, Siebel Service, and Siebel Marketing), you perform this step only once for each language you want to install.

To import a new language to your repository

1. Follow the procedure for "Importing the Siebel Repository on Database Server for DB2" on page 244 up to Step 6 on page 245, but choose option `2`, `Add Language to an Existing Repository.`
2. Answer the remaining prompts as you did when you imported your primary(base) language repository.

NOTE: If the repository import fails, or you receive a system error while importing a new language to the repository, you must navigate to `$`*`SIEBEL_ROOT`*`/bin` and enter:
`srvupgwiz /m master_imprep_`*`LANG`*`.ucf`

Populating the Siebel File System for Database Server on DB2

Specific files needed to run the Siebel File System, such as correspondence templates and Siebel Marketing files, are provided with the Siebel Database Server software. A subdirectory called `files` is created when you install the Siebel Database Server.

Your DBA must populate the File System directory with these file attachments after installing the Siebel Database Server, and before running the Siebel Web Client.

To populate the Siebel File System directory

1. Copy the appropriate files from the `/files` subdirectory of the Siebel Database Server software to the `/att` subdirectory of the Siebel File System.
2. Copy the `KB.kb` file from the `/files` subdirectory of the Siebel Database Server software to the `/cms` directory within the Siebel File System.
3. Verify that the files are appropriately located.

Creating the Oracle Database 10

This chapter provides an overview of Siebel Database configuration and sizing recommendations for Oracle. The chapter also describes how to create the Oracle Database for use with Siebel eBusiness Applications.

The optimization and creation of the Siebel Database consists of several tasks, which are illustrated in Table 27.

Table 27. Database Configuration Tasks

Who Performs It?	Task
Database Administrator	**1** Review the database layout guidelines, and lay out your database accordingly. See "Oracle Database Layout Guidelines" on page 256. **2** Review the list of Oracle parameter settings that have an impact on the performance of Siebel eBusiness Applications, and reset them according to the guidelines in this chapter. See "Oracle Database Configuration Guidelines" on page 260. **3** Create your database objects. See "Creating the Database" on page 264. **4** Review ongoing database administration tasks. See "Ongoing Oracle Database Administration" on page 273.

Oracle Database Layout Guidelines

As with most client-server applications, the overall performance of Siebel eBusiness Applications is largely dependent on the I/O performance of the Database Server.

To assure optimal I/O performance, you must arrange tables and indexes across available disk devices so that the I/O load is evenly distributed. Put indexes for a given table on a different disk from the table data whenever possible.

Using a Redundant Disk Array With Oracle

A redundant array of independent disks, or RAID, can provide large amounts of I/O throughput and capacity, while appearing to the operating system and RDBMS as a single large disk (or multiple disks, as desired, for manageability). The use of RAIDs can greatly simplify the database layout process by providing an abstraction layer above the physical disks, while ensuring high performance.

Planning the Distribution of Your Database Objects

Regardless of the RDBMS you implement, and your chosen disk arrangement, be certain that you properly distribute the following types of database objects:

- Database log or archive files
- Rollback segments
- Temporary work space used by the database
- Tables and indexes

In most implementations, the Siebel tables listed in Table 28 and their corresponding indexes tend to be either the most commonly used, or they have the potential to be large in some, or in all, deployments. For example, the tables S_EVT_ACT, S_CONTACT, and S_ORG_EXT are large in all sizeable deployments of Siebel eBusiness Applications.

Table 28. Most Frequently Used and Largest Siebel Tables

Table Names	
S_ACCNT_CHRCTR	S_INVOICE
S_ACCNT_CO_MSTR	S_INVOICE_ITEM
S_ACCNT_POSTN	S_INV_LGR_ENTRY
S_ADDR_ORG	S_OPTY_POSTN
S_ADDR_PER	S_OPTY_PROD
S_ASSET	S_OPTY_TERR
S_CALL_LST_CON	S_OPTY_POSTN
S_CON_CHRCTR	S_ORG_EXT
S_CON_TERR	S_ORG_TERR
S_ACCNT_CHRCTR	S_PARTY
S_CRSE_TSTRUN	S_PARTY_PER
S_CRSE_TSTRUN_A	S_PARTY_REL
S_CS_RUN	S_PARTY_RPT_REL
S_CS_RUN_ANSWR	S_POSTN_CON
S_CTLGCAT_PATH	S_INVC_ITM_DTL
S_CYC_CNT_ASSET	S_INVLOC_ROLLUP
S_DNB_CON_MRC	S_POST_CON
S_DNB_ORG	S_PROC_REQ
S_DNB_ORG_SIC	S_PROD_BASELINE
S_DNB_UPDATE	S_PROD_CONSUME

Table 28. Most Frequently Used and Largest Siebel Tables

Table Names	
S_DOCK_INIT_ITEM	S_PROD_SHIPMENT
S_DOCK_TXN_LOG	S_PROD_TARGET
S_DOCK_TXN_LOGT	S_QUOTE_ITEM
S_DOCK_TXN_SET	S_SRM_REPLY
S_DOCK_TXN_SETT	S_SRM_REQUEST
S_ESCL_ACTN_REQ	S_SRM_REQ_PARAM
S_ESCL_LOG	S_SRV_REQ
S_ESCL_REQ	
S_EVT_ACT	
S_EXP_ITEM	
S_EXP_RPT	
S_EXP_RPT_APPR	
S_IC_CALC	
S_IC_CALC_IT	
S_IC_CMPNT_EARN	
S_IC_TXN	
S_IC_TXN_IT	
S_IC_TXN_POSTN	

These tables and indexes should be separated across devices. As a general rule, indexes should be in a different tablespace and, if possible, on different physical devices from the tables on which they are created.

Planning Database Distribution if a RAID Disk Array Is Not Used

If a RAID device is not in use, even if space is at a premium, you must separate the indexes whose names end with `_P1` from the tables on which they are created. These tables are heavily used in join operations.

If you will make frequent use of Siebel Enterprise Integration Manager (EIM), you may want to put the interface tables and indexes (names starting with `EIM_`) on different devices from the Siebel base tables. Both tables are accessed simultaneously during EIM operations.

Logical Device Layout

You can use tablespaces to place objects on data files, which create tablespaces to span one or more data files. Tablespaces can be used to place objects on multiple physical data files to promote parallel I/O. Spreading the data and index information across several data files (physical devices) can improve the performance of queries.

Mirroring Important Oracle Files

Many companies today use RAID storage systems that make Oracle online redo log mirroring unnecessary.

If your organization does not use RAID storage systems, you should, at a minimum, mirror the redo log, as this is essential when a database goes through crash-recovery.

Also, when redo logs are mirrored at the RAID storage system level (usually RAID1 or RAID0 + 1), there is usually no need to mirror them at the Oracle level, since the RAID controller assures that these volumes can always be recovered. Mirroring at the RAID level usually improves database performance (especially beneficial for read operation).

If you have the resources, the Oracle control files should be mirrored as well. Otherwise, you can put the Oracle control files into a RAID-5 device as it is not heavily accessed and disk performance is not a concern. The information it records, though, is very critical for the Oracle database. Any updates to the control file—for example, the current System Change Number (SCN) or transaction tables—ripple across all members of the control file specification.

NOTE: For data that is accessed heavily, disk subsystem mirroring (hardware mirroring) generally provides better performance compared to RAID5.

Oracle Database Configuration Guidelines

This section contains guidelines for obtaining optimum performance from an Oracle database. Refer to your Oracle technical documentation for additional information.

The `init.ora` file contains parameters that have a major impact on the performance of Siebel applications.

NOTE: Use the following settings only as guidelines for your initial configuration. Your final settings will vary based on the server hardware configuration, the number of users, and the type of workload.

In the `init.ora` file, Oracle provides default parameter values for small, medium, and large database configurations. Unless the configuration parameters are specified in the following settings, set them to the large database values. Refer to your Oracle documentation for detailed descriptions of each of the parameters and their effects on database performance and system resource utilization.

Brief descriptions of these parameters follow:

OPTIMIZER_MODE. Select the rule-based optimizer by setting `OPTIMIZER_MODE` to `RULE`.

NOTE: Siebel optimizes and certifies Siebel applications on a standard Oracle installation using Rule-Based Optimizer (RBO). Using advanced features like Cost-Based Optimizer (CBO) and table partitioning are not supported and could have a detrimental effect on query performance.

If there is a reason to believe that the issues are caused by CBO, table partitioning, or other database features that are not currently supported, Siebel Support will request that you reproduce issues against a standard installation using RBO.

DB_BLOCK_BUFFERS. The minimum recommended value is 10,000 blocks (assuming a block size of 8 KB). This yields 80 MB of block buffers. If significant I/O activity occurs, you can increase this value, provided that enough RAM is available.

In a production system, it is recommended that you assign this parameter a minimum value of 256 MB. Also, your system should have a minimum of 512 MB RAM.

SHARED_POOL_SIZE. Start with a minimum value of 100 MB in your production environment. A DBA should adjust this value upward based on the available physical memory of the hardware and performance, whether connections are dedicated, or run Multi-Threaded Server (MTS) and the application type.

Siebel eBusiness Applications make heavy demands on the dictionary cache for columns. In Oracle, you cannot explicitly set the size of the column cache. Instead, column cache is set as a fixed percentage of the shared pool size. By setting a large shared pool size, you set a large column cache size.

The number of repositories active in your Siebel schema also adds to dictionary overhead since Siebel eBusiness Applications maintains a record for each column in each table for each repository. As a result, if you have six active repositories, the Siebel dictionary will be six times larger than it needs to be.

DB_FILE_MULTIBLOCK_READ_COUNT. The database buffer cache parameter dictates the number of data blocks read in a single Oracle I/O operation during a table scan.

For most implementations, this value should be set between 16 and 32 blocks and adjusted as necessary. You may want to set an initial value of 32. To reduce I/O overhead, this parameter should ideally be between 64 and 256 KB, depending on the tables undergoing scanning, the number of disk drives/devices, the tablespace structure, and other variables.

To optimize performance during upgrades, this value should be set higher than for installation or daily operation and the parameter `ARCHIVE_LOGGING` should be switched off.

SORT_AREA_SIZE. This value is specified in bytes, and may be adjusted according to the number of users, the amount of RAM available, and the size of sorted queries. You should start with an initial value of 2,000,000 (2 MB).

SORT_AREA_RETAINED_SIZE. When a sort operation is complete, Oracle releases the memory it used in `SORT_AREA_SIZE` and retains only the memory defined in this parameter. This value is specified in bytes, and determines how much sort area is retained for each user process.

Start by setting this parameter equal to `SORT_AREA_SIZE`. If the Siebel Database Server is running low on memory, deallocate all the sort memory after the sort by setting it to zero.

If users regularly execute implicit sort operations, such as order by, this memory does not need to be deallocated. Therefore, if the Siebel Database Server is not using virtual memory, set `SORT_AREA_RETAINED_SIZE` the same as `SORT_AREA_SIZE.`

On the other hand, if the Siebel Database Server is running short on memory, set `SORT_AREA_RETAINED_SIZE = 0`. This completely deallocates all sort memory after sort operations.

Should the sort exceed the value of `SORT_AREA_SIZE,` it will spill over onto the disk. For this reason, you must consider the TEMP tablespace default storage size. Allocate uniform and equal extents (set default `PCTINCREAE` to `ZERO`) in the `TEMP` tablespace that are the same size as `SORT_AREA_SIZE`, and assign the default `MINEXTENTS 2.` These parameter settings are recommended because if a sort operation spills over to disk, it will then use more than the `SORT_AREA_SIZE` in temporary space. Since Oracle will then need to allocate more extents to contain the sort operation, and Oracle performs this serially using enqueues, an already suboptimal system performance will be magnified several-fold.

CURSOR_SHARING. This parameter is set to `EXACT` by default and you should not change it unless directed by Siebel Technical Support.

OPEN_CURSORS. This parameter controls the amount of spaces that should be reserved for the maximum number of cursors (a cursor being the same as an open query). The minimum open cursor requirement for Oracle support is 1000 and the maximum is 2000. This parameter may be adjusted according to observed usage patterns.

NOTE: Setting this number higher than 2000 commits more memory for the database server, thereby affecting performance. Setting it lower than 1000 can cause an error that prevents you from continuing.

DB_BLOCK_SIZE. Small block size leads to high levels of row chaining and large numbers of levels in B*tree indexes, creating serious performance problems. It is recommended that you set the block size to a minimum of 8 KB to prevent excessive row chaining and performance degradation with EIM.

NLS_SORT. The collating sequence, also called the sort order, is specified during the initial installation of your database and defines the way in which the database will sort character data.

For detailed information on Siebel sort order recommendations, see "Sort Order" on page 269.

You should specify the same sort order at the database client level, so that output there does not need to be resorted.

NOTE: Customers are responsible for ensuring that their data is exported and imported correctly.

NLS_DATE_FORMAT. Set the `NLS_DATE_FORMAT` parameter as needed. (The default setting is `DD-MON-YY`.)

For information about the formats supported, consult your Oracle documentation.

Creating the Database

To help you automate database instance creation, Siebel Systems provides a sample script, located in Appendix C, "Sample Database Creation Scripts." Edit this script to reflect your deployment's requirements to create the database objects.

It is recommended that you use a small, non-production environment for testing purposes.

After you install the Siebel Database Server files on the Siebel Server machine (described in Chapter 11, "Installing the Siebel Database Server for Oracle"), you may modify the database table and index creation scripts to specify the file group names you created for Siebel tables and indexes. For more information, see "Overriding Default Storage Parameters" on page 272.

Capacity Planning

One of the most important factors to determine about your database is its overall size. In your planning, you will need to allocate space for system storage, rollback or temporary storage space, log files, and other system files required by Oracle, as well as space for Siebel data and indexes. If you allocate too little space for your system, performance will be affected and, in extreme cases, the system itself may be halted. If you allocate too much, you will waste space.

The space needed by Oracle will vary primarily based on the total number and types of users supported, as well as the transaction mix and rate. Consult the Oracle documentation for more information on these requirements.

The space required for Siebel data and indexes will vary depending on what Siebel eBusiness Applications functionality you will implement and the amount and nature of data supporting that functionality.

The process for making accurate database size calculations is a complex one involving many variables. The following guidelines will assist you in the process:

- Be certain to factor growth rates into your total size calculation.
- Determine the total number and types of users of Siebel eBusiness Applications (for example, 500 sales representatives and 75 sales managers).

- Determine the Siebel eBusiness Applications functionality that you will implement and the entities required to support them. Typically, the largest entities are as follows:
  - Accounts
  - Activities
  - Contacts
  - Forecasts
  - Opportunities
  - Service Requests
- Estimate the average number of entities per user (for example, 100 accounts per sales representative) and calculate an estimated total number of records per entity for your total user base.
- Using standard sizing procedures for your specific database, and *Siebel Data Model Reference*, calculate the average record size per entity and multiply by the total number of records. Typically, these entities span multiple physical tables, all of which must be included in the row size calculation. This will determine the estimated data size for the largest entities.
- You must add additional space for the storage of other Siebel data. A rough guideline for this additional amount would be one-half the storage required for these key entities.
- Indexes typically require approximately the same amount of space as data.
- Allow for a margin of error in your total size calculation.

If you require additional help in planning capacity and the number of machines required for your implementations, contact Siebel Technical Support.

Sizing Redo Logs

If redo logs are too small, frequent log switches occur, creating resource-intensive Oracle check-pointing in which all dirty buffers are flushed. Although a range of 10 to 15 minutes or longer for log switching is preferable under a normal OLTP (Online Transaction Processing) load, during periods of heavy DML (Data Manipulation Language) activity (for example, during large EIM loads or upgrades), the logs may switch more frequently than every two minutes. However, when this occurs, overall database performance will suffer as a result.

You can check the frequency of this operation either in the alert log or by querying `v$loghist`. It is best to use verification when there is the greatest activity and the heaviest load on the database.

If this activity occurs too frequently, drop and recreate individual redo log groups with larger sizes.

To achieve optimum performance, placing subsequent log file groups on alternative devices is critical. This prevents the archiver process (ARCH) and the log writer process (LGWR) from competing for I/Os on the same device, since ARCH reads from the previous group, while LGWR is writing to the current group. This process causes the read-write head of the device to move back and forth, contributing to inefficient I/O. When log file groups are located on separate devices, the speed of both processes improves as they do not contend for the same hardware resource.

Creating Tablespaces

An Oracle Database running Siebel 7.5 requires that the DBA allocate a minimum of 3 GB of space. This space can be allocated as follows:

- Data—1 GB
- Index—2 GB

Allocate a minimum of 500 MB for rollback segment. Be aware that these can grow to as much as 1 GB in size.

This allocation suffices for a fresh installation of Oracle 8*i* (non-Unicode-enabled) or Oracle 9*i* (Unicode- or non-Unicode-enabled).

The following additional guidelines should help you in creating tablespaces:

- To improve performance on your production system, create at least two tablespaces for Siebel implementation—one for indexes and one for data.
- Distribute objects that you anticipate to be large or points of contention by creating additional separate tablespaces (preferably on separate disk devices).
- Be sure that you or whoever is responsible for setting up permissions grants the Siebel tableowner account the privilege and sufficient quota to create tables and indexes in these tablespaces.

NOTE: Besides the tableowner, the database User ID used for Siebel Marketing also requires additional rights at the database level within the OLTP schema. You must grant drop table, drop index, create table, and create index rights to this user. For more details, see *Siebel Marketing Guide*.

- Set storage parameters for your data and index tablespaces. The Siebel installation procedure does not set storage parameters for the objects it creates. The storage configuration for each objects will follow the default storage parameters of its tablespace.

NOTE: In development or test environment, multiple Siebel eBusiness Application installations can co-exist on one Oracle instance. Each Siebel installation can be installed under one tableowner; for example, more than one test environment can share one Oracle instance.

To promote suitable initial sizing and successful installation

1. Set the initial extent to a very small size (the minimum is one database block), so that empty tables and indexes do not consume large amounts of space. For example, start with either two or four blocks (in other words, 16 KB or 32 KB with an 8 KB block size). This promotes less fragmentation.

   NOTE: Even if you have 10,000 objects, this uses only 312 MB, which is far less space required than for some standard office software packages.

2. Set the default next extent for your data and index tablespaces to a minimum of 100 KB.

3 Monitor object growth and fragmentation carefully.

NOTE: The Siebel software will automatically alter the storage parameters for certain objects as shown in the example below:

```
alter table S_PROC_INST_LOG
STORAGE (NEXT 10M PCTINCREASE 0) PCTUSED 90 PCTFREE 5
```

Creating Temporary Tablespaces

All user temporary tablespace definitions should be modified from the default of `SYSTEM` to the name of the temporary tablespace; for example, `TEMP` or `TEMP_TS`. Otherwise, `SORT` operations interfere with Oracle dictionary management.

To find out which users are assigned to which temporary tablespaces, query the `TEMPORARY_TABLESPACE` column of `DBA_USERS`, and if any users are assigned to a tablespace other than the one allocated for temporary sort-type operations, correct the situation.

Creating the Language Characteristics of Your Database

When creating your database, you must specify the character set at the database level. You will specify other language characteristics at the database client level. For information about setting database client language parameters, see Chapter 11, "Installing the Siebel Database Server for Oracle."

You specify the character set of your Oracle database with the following command:

```
CREATE DATABASE INSTANCE_NAME CHARACTER SET CHARACTER_SET_NAME
```

where:

INSTANCE_NAME is the name of your Oracle instance.

CHARACTER_SET_NAME is the textual name of the character set you want to run; for example, WE8MSWIN1252.

NOTE: National character does not concern Siebel installation because Siebel does not use the three datatypes, which can store data in the national character set (NCHAR, NVARCHAR2, NCLOB.) You should choose your own national character set.

Sort Order

The sort order is specified during the initial installation of a database and defines the way in which the database will sort character data. Sort order support depends on both the code page of the database and whether it will be used in a development or a production environment.

Development Environment Databases

Repository object names in your development database must sort using binary sort order. Siebel Tools uses this sort order internally. Otherwise, repository merges during future upgrades of the Siebel Database will fail. For more information on supported sort orders, see *System Requirements and Supported Platforms*, available on SupportWeb.

Production Environment Databases

For performance reasons, it is strongly recommended that you use binary sort order in production databases. For information on production environment database restrictions, see *System Requirements and Supported Platforms*, available on SupportWeb.

For information about setting the order in which your database sorts data, see `NLS_SORT` under "Oracle Database Configuration Guidelines" on page 260. For information about setting the NLS date format, see `NLS_DATE_FORMAT` within the same section.

Defining Rollback Segments

Rollback segments (RBS) are used when a process is performing inserts, updates, or deletions (DML).

Oracle assigns each transaction to a rollback segment. As a rule of thumb, the total number of rollback segments required should be based on four concurrent transactions per rollback segment. However, database administrators should monitor their database and configure rollback segments based on the requirements of the Siebel applications running.

To make sure you have sufficient rollback segments for larger implementations

1. Create multiple rollback segments, each with multiple extents, at least, initially.
2. Calculate 5-10 active transactions (user activity consisting of an insert, update, or deletion) per extent, and from two to six extents per rollback segment.

To make sure you have sufficient rollback segments for smaller implementations

1. Create a single, much larger rollback segment for Siebel Server components, such as Enterprise Integration Manager (EIM). Siebel Server components can point directly to this rollback segment when performing long-running queries.
2. To promote optimal system performance, create your rollback segments in a dedicated tablespace on a dedicated disk. Rollback segments typically support high I/O rates, so this action will improve system performance measurably.

Partitioning

Siebel eBusiness Applications do not currently support Oracle partitioning. While partitioning may, at first, appear to work with Siebel eBusiness Applications, the following results will most likely be observed:

- No performance benefit because Siebel eBusiness Applications uses Rule-Based Optimizer mode.

- Siebel 6 and Siebel 7 development-to-production migration and version upgrade processes do not recognize partitioning and, therefore, do not propagate existing partitioning definitions to the new environment.

NOTE: Siebel optimizes and certifies Siebel applications on a standard Oracle installation using Rule-Based Optimizer (RBO). Using advanced features like Cost-Based Optimizer (CBO) and table partitioning are not supported and could have a detrimental effect on query performance.

If there is a reason to believe that the issues are caused by CBO, table partitioning, or other database features that are currently not supported, Siebel Support will request that you reproduce issues against a standard installation using RBO.

Overriding Default Storage Parameters

Siebel Systems provides the option of overriding the default storage parameters, such as the tablespaces in which specific tables or indexes are created. To override these parameters, appropriately edit the `ddl.ctl` file located in the `dbsrvr\`*`DBSRVR_PLATFORM`* directory.

NOTE: The `ddl.ctl` file should be modified only by a qualified DBA.

For each Siebel object (table or index), you can specify a tablespace by using the `Table Space` parameter. In the following example, the tablespace for the table `S_APP_VIEW` is set to `DATA1`. As provided by Siebel, the `.ctl` file does not set storage parameters for the objects it creates, so they will default to the parameters of the tablespaces in which they are created. However, the `Table Space` parameter will only work under the following conditions:

- The table does not yet exist (for example, when you are performing a new database installation).
- The table needs to be rebuilt, in other words, there are schema changes made to the table such that an `ALTER TABLE` command is not sufficient to implement the schema changes, requiring that the Siebel application drop and recreate the table.

The example below illustrates the use of the `Table Space` parameter to set storage values for specific tables.

```
[Object 219]
Type = Table
Name = S_APP_VIEW
Column 1 = ROW_IDVARCHAR(15)NOTNULL
Column 2 = CREATEDTIMESTAMPNOTNULL DEFAULT %NOW%
Column 3 = CREATED_BYVARCHAR(15)NOTNULL
Column 4 = LAST UPDTIMESTAMP NOTNULL DEFAULT %NOW%
Column 5 = LAST_UPD_BYVARCHAR(15)NOTNULL
Column 6 = DCKING_NUMNUMERIC(22,7)DEFAULT 0
Column 7 = MODIFICATION_NUMNUMERIC(10,0)NOTNULL DEFAULT 0
Column 8 = CONFLICT_IDVARCHAR(15)NOTNULL DEFAULT '0'
Column 9 = NAMEVARCHAR(50)NOTNULL
Column10 = DESC_TEXTVARCHAR(255)
Column11 = LOCAL_ACCESS_FLGCHAR(1)
Table Space = data1
```

If you use locally managed tablespaces and want to change the storage parameters, see your Oracle technical documentation.

Ongoing Oracle Database Administration

After your Siebel eBusiness Applications installation is up and running, monitor the following areas on a regular basis:

- **Insertion rates on tables.** You will probably want to set the `INI_TRANS` value for tables with high insertion rates to a value higher than 1; a typical setting is 4.

  This parameter determines how many simultaneous inserts can occur on the database blocks that store data for those tables and, therefore, can affect performance in an intensive data-entry environment.

  It is recommended that you use multiple freelists for the table `S_DOCK_TXN_LOG`, since this table receives numerous inserts.

- **SGA cache hits.** Determine whether SGA parameters need to be adjusted for your system.

- **The extents used by each object.** A large number of extents on a table or index creates response time degradation for transactions that access the table or index.
- **Siebel tables that are subject to frequent INSERT and DELETE operations.** This transaction mixture can cause some databases to become fragmented over time.

  You should monitor the space utilization and fragmentation of these tables and perform regular database maintenance procedures as recommended by your database vendor. The following list contains the names of the tables you should monitor.

  ```
  S_DOCK_TXN_LOG
  S_DOCK_TXN_LOGT
  S_DOCK_TXN_SET
  S_DOCK_TXN_SETT
  S_DOCK_INST
  S_DOCK_INIT_ITEM
  ```

- **Rollback segments.** Make sure that you have enough segments available and that they are the optimum size for the most common operations.

Installing the Siebel Database Server for Oracle 11

This chapter is written for system administrators who will install the Siebel Database Server and for database administrators who will assist in this process.

The installation and configuration of the Siebel Database Server consists of several tasks. Table 29 on page 275 illustrates the sequence of steps.

Table 29. Database Server Installation and Configuration Tasks

Who Performs It?	Task
System Administrator	**1** Fill out your copy of Appendix A, "Deployment Planning Worksheets" with all RDBMS-specific information.
Database Administrator	**2** Configure Oracle database parameters for Siebel eBusiness Applications. See Chapter 10, "Creating the Oracle Database." **3** Allocate and configure disk space appropriate to your installation requirements. See Chapter 10, "Creating the Oracle Database."
System Administrator	**4** Install the database software. See "Installing the Siebel Database Server Software on Oracle" on page 278. **5** Review the software installation. See "Reviewing the Software Installation of Siebel DB Server for Oracle" on page 284. **6** If you have a multilingual deployment, review and, if needed, reset the default for Universal Time Zone on your OS. See "Setting Up Your Environment to Support Global Time Zone" on page 285.
Database Administrator	**7** Create tableowner and administrator accounts. See "Creating Tableowner and Administrator Accounts for DB Server on Oracle" on page 286.

Table 29. Database Server Installation and Configuration Tasks

Who Performs It?	Task
Siebel System Administrator	**8** Install the database server components. See "Installing Siebel Database Server Components on Oracle" on page 287. **9** Review the database installation log files for errors. See "Reviewing the Log Files for Siebel DB Server Installation on Oracle" on page 291. **10** Conduct troubleshooting to fix any errors and retry installing seed data, tables, and indexes, if necessary. See "Troubleshooting Siebel DB Server Installation on Oracle" on page 292.
Database Administrator	**11** Provide a rollback segment. See "Providing a Rollback Segment on Oracle" on page 292.
Siebel System Administrator	**12** Import the Siebel repository. See "Importing the Siebel Repository on Siebel DB Server for Oracle" on page 294. **13** Review the repository import log files for errors. See "Reviewing the Log Files for Repository Import on Oracle" on page 298. **14** Conduct troubleshooting to fix any errors and rerun the script, if necessary. See "Troubleshooting Repository Import on Siebel DB Server on Oracle" on page 298. **15** Review your database code page system preferences. See "Verifying System Preferences After Siebel DB Server Installation on Oracle" on page 299. **16** Install multilingual seed data (optional). See "Verifying System Preferences After Siebel DB Server Installation on Oracle" on page 299. **17** Import an additional language to your repository (optional). See "Importing a New Language to Your Repository on Oracle" on page 301.
Database Administrator	**18** Populate the Siebel File System. See "Populating the Siebel File System for Siebel DB Server on Oracle" on page 303.

About the Siebel Database Server

The Siebel Database Server stores the data used by Siebel eBusiness Applications. Siebel Dedicated Web Clients (Siebel Mobile Web Clients in connected mode), Siebel Tools Clients, and Siebel Server components connect directly to the Database Server and make changes in real time. Dedicated Mobile Web Clients download a subset of the server data to use locally, periodically synchronizing with the Database Server through the Siebel Server to update both.

Installation and configuration of the Siebel Database Server software configures the Siebel Database automatically.

Pre-Installation Tasks for Siebel DB Server for Oracle

Before installing the Siebel Database Server, you must complete the following tasks:

- Obtain the services of a qualified database administrator to assist you during your installation.
- Make sure that Oracle is properly configured, as documented in Chapter 10, "Creating the Oracle Database." Complete the appropriate RDBMS-specific information in a photocopy you make of Appendix A, "Deployment Planning Worksheets."
  - **The Oracle Net8 (or Net9, as appropriate to your database) connect string.** You will need this to connect to your Oracle database.
  - **The tableowner account user name and password.** Oracle requires that you assign a user name and password to any database tables you create. Prior to installing the Siebel Database Server, you will edit the `grantusr.sql` script and enter this information. Siebel is the default Tableowner Account user name and password for Siebel applications.
  - **The Siebel data tablespace.** The name of the tablespace on the Oracle server where the Siebel data tables are stored.
  - **The Siebel index tablespace.** The name of the tablespace on the Oracle server where the Siebel indexes are stored.
- Install Oracle database client software onto the machine you intend to use as your Siebel Database Server. Make sure that you have set the *`ORACLE_HOME`* variable appropriately before installing the Siebel application.
- Complete all the steps in the appropriate sections of Chapter 5, "Installing the Siebel Gateway" and Chapter 6, "Installing the Siebel Server," to install at least one Siebel Server.
- If this Enterprise will be multilingual, make sure that you install all the languages that you want the Siebel Database to support onto the associated Siebel Server.

Database Server Installation on Oracle

Installation of the database scripts consists of the following tasks:

Installing the Siebel Database Server Software on Oracle

Perform the steps below to complete the Siebel Database Server installation scripts on one computer. You must have a Siebel Server already installed on this computer. You can use the same procedure to complete installation on each computer you intend to use as a Siebel Database Server.

NOTE: You can have only one database per Siebel Enterprise Server.

To install the Siebel Database Server software

1 Install the *UNIX_OS Server Programs, Siebel Enterprise Server Base* CD-ROM onto the network

where:

UNIX_OS = your UNIX operating system, such as Solaris, HP-UX, or AIX.

NOTE: The volume label for the CD is sea*UNIX_OS*sesbase or sea*UNIX_OS*siabase, as appropriate to the Siebel applications you are installing; it may not be required, depending on how you access the CD-ROM. If you are installing Siebel Industry Applications, use the CD with volume label sea*UNIX_OS*siabase.

As a convenience, you may also want at this time to install the sea*UNIX_OS*ses*language* or sea*UNIX_OS*sia*language* CD-ROM or CD-ROMs, as applicable, into the drive of the machine on which you want to install the Siebel Database Server.

NOTE: If you are installing Siebel Industry Applications, install the sea*UNIX_OS*sia*language* CD-ROM.

---

2 Verify the directories and permissions to those directories into which you will install the product. You must have write and execute permission.

3 Navigate to the /ses directory on the CD-ROM and open a new shell.

4 Unset any Siebel-specific environment variables. To view current environment variable settings, enter env in the shell window.

5 To start the Siebel Database Server file installation, enter the following command, appending any flags you may also want to use, as described in "Installing in Console Mode" on page 104.

```
./setupUNIX_OS
```

The Installer Welcome screen appears.

6 Click Next.

If you have installed other Siebel components on the same machine, the installer displays the message that an existing installation has been found.

7 Depending on whether you are installing your Siebel Database Server files for the first time or adding a new language to an existing instance, take the appropriate action, then click Next:

- To install the server software in a new instance, select None as the default and click Next. Proceed to Step 8.
- To install a new language in an existing instance, select the displayed instance and click Next. Proceed to Step 12.

  See also "Installing Multiple Siebel Language Packs on the Siebel Server" on page 149 for important additional information on this topic.

The Installer Path screen appears.

8 Enter the fully qualified path to the installation directory and click Next.

The Installer Product Selection screen appears.

9 Choose to install the Siebel Database Server and click next.

The Installer Setup Type screen appears.

10 Choose the type of installation you want to perform and click Next.

- **Typical.** Installs Siebel Database Server components for all supported RDBMS.
- **Compact.** Compact installation is not a supported option.

- **Custom.** Lets you customize your installation by choosing the specific components you want to install.

  NOTE: Use this option to install the Oracle Database Enterprise Edition.

  CAUTION: If you select Custom installation, make sure that you also select Sample Database the first time you install the software. When the Sample Database is installed, additional files are copied to the Siebel File System directory after configuration. These files are required to read attachments. For more information, see "Populating the Siebel File System for Siebel DB Server on Oracle" on page 303.

11 If you selected Custom, you are prompted to select installable components. Select both Oracle Database Enterprise Edition and the Siebel Sample Database.

NOTE: If you selected Typical, you are not prompted to select components.

The Installer Language Selection screen appears.

12 Choose the language or languages to be installed and click Next.

All servers are installed with at least one (base) language. Additional languages can be installed at a later date, if desired. For more information, see *Global Deployment Guide*.

When installing languages at a later date, you must also reinstall any patches that have been run on the directory.

NOTE: In a Unicode-enabled database environment, you can install any of the available Siebel language packs. In a non-Unicode database environment, you must consider the correlation of the language packs you want to install and the characters supported by your database code page. For example, in a Western European code page database, you can only install Western European language packs such as English, French, Spanish, or German language packs. And in a Japanese code page database, you can only install Japanese or English language packs.

For a list of supported code pages and encoding strategies, see *System Requirements and Supported Platforms*.

13 A confirmation screen appears displaying the installation parameters you have selected. Click Next.

The installer begins to copy all of the files to the location you selected. After the files have been copied to the installation location, a warning screen appears with the following message:

```
Setup did not find the Siebel Language Code language pack on
the current media. Please insert the CD containing the Siebel
Language Code and select setupUNIX_OS from the Siebel Language
Code folder.
```

14 Locate `sea`*`UNIX_OS`*`ses` *`language`* or `sia`*`UNIX_OS`*`ses` *`language`*`,` as appropriate, on the target machine (where *`language`* stands for the Language Pack you are installing) browse to `setup`*`UNIX_OS`*`,` and click OK.

- If installing Siebel Enterprise Applications, proceed to the information concerning Step 16.

- If you are installing Siebel Industry Solutions, you may also be prompted to install an additional CD, depending on the language you are installing. In this case, proceed to Step 15.

CAUTION: Siebel Industry Solutions customers only: If the language you are installing requires multiple language CD-ROMs, your OS platform is Solaris, and you have auto-mount enabled, you must specify `/cdrom/cdrom0` as the mount point for the first language CD, not `/cdrom/siasolses`*`language`*`1`.

15 If prompted to insert a second language CD, remove the first CD-ROM and insert the second, then click OK.

When installation of all the language files has been completed, the installer prompts you for the Base CD-ROM again:

```
Please re-insert the base CD and browse to the setup_UNIX_OS
file to enable setup to continue.
```

16 Navigate again to the base CD mount point on the network, locate `ses/setup`*`UNIX_OS`*`,` and click OK.

17 Click Finish.

Reviewing the Software Installation of Siebel DB Server for Oracle

Review the directory structure created by the Siebel Database Server installation. The installation creates a `/dbsrvr/oracle` subdirectory under the Siebel Server root installation directory.

The directory structure should be as follows:

```
dbsrvr
/oracle
/upgrade
/language
/files
```

oracle. Scripts specific to Oracle, including upgrade scripts for previous versions of Siebel eBusiness Applications.

upgrade. Directories containing files to enable upgrade from specific versions of Siebel eBusiness Applications supported for upgrade to the current release.

language. Contains language- and database-specific files for the ancestor repository and supporting files. For example, `enu` would contain language-specific U.S. English files, or `deu` would contain German-language-specific files. Additional subdirectories will exist under this level, based on the Language Packs that you install.

files. Contains sample file attachments. They should be copied to the Siebel File System. See "Populating the Siebel File System for Siebel DB Server on Oracle" on page 303.

Setting Up Your Environment to Support Global Time Zone

Global deployments typically span multiple time zones, making it difficult to manage time-sensitive information that must be exchanged among customers and employees working around the world. Siebel Systems' Global Time Zone feature helps your organization meet contractual response times and commitments in spite of time zone differences.

The Global Time Zone feature converts and stores date and time data, using the Universal Time Zone (UTC) standard, which is equivalent to Greenwich Mean Time, but without daylight savings time.

CAUTION: The language locale can affect how time is displayed. This is especially critical on Solaris, which displays time by default in 12-hour formats without A.M. or P.M. For more information, refer to the *Global Deployment Guide*.

If you intend to operate your deployment with the Global Time Zone feature enabled, you must also set the operating system of your database servers to UTC time, or its equivalent. For more information on enabling Global Time Zone, see *Global Deployment Guide*.

Although enabling this feature is optional in Siebel 7, it is strongly recommended that you operate your production environment with Global Time Zone enabled.

NOTE: The Global Time Zone parameter (Universal Time Coordinated system preference) is enabled (set to `TRUE`) in Siebel 7 by default. If you do not want to enable Global Time Zone feature, you must reset this parameter to `FALSE` through Server Manager by navigating to Application Administration > System Preferences.

Creating Tableowner and Administrator Accounts for DB Server on Oracle

The Oracle database administrator must manually create the tableowner account (default: *siebel*), the Siebel Administrator account (default: *sadmin*), and the *sse_role* group. You must then add the two accounts to the *sse_role* group.

NOTE: On Solaris, the *sse_role* group cannot be created using the *admintool* due to the use of an underscore in the name. Instead, use the command *groupadd sse_role* to create the *sse_role* group and ignore the `UX: groupadd: sse_role name should be all lower case or numeric` warning.

Execute the `grantusr.sql` script against your Siebel Database Server to grant the appropriate privileges to these users. The `grantusr.sql` script must be run before you run the Database Server Configuration Wizard to create the Siebel database schema.

This script is located in the *$DBSRVR_PLTFRM_ROOT* subdirectory. Your database administrator should review and run this script, which performs the following functions:

- Grants the appropriate permissions to the Siebel tableowner account that will "own" all the database objects for your Siebel deployment.
- Creates a role (*sse_role*) with create session privileges for `SADMIN, SIEBEL,` and `LDAPUSER`.

CAUTION: Do not change the name of the Siebel Administrator Account, `SADMIN`. This account must be created for you to log on to Siebel as the Siebel Administrator.

The default user name and password for the logon are listed in the `grantusr.sql` script. If you want another logon, edit the `grantusr.sql` script and change all the references to your preferred name. However, keep in mind that the length and allowable characters for the login ID and password depend on the rules of your underlying RDBMS platform. See your Oracle documentation for instructions.

NOTE: You should not use any numeric login IDs; otherwise, you will not be able to change password with Oracle database authentication.

Tableowner and Administrator Account for Siebel Marketing

The tableowner or the database User ID used for Siebel Marketing requires additional rights at the database level within the OLTP schema. You must grant drop table, drop index, create table, and create index rights to this user. For more details, see *Siebel Marketing Guide*.

To run the grantusr.sql script

1 Run the `grantusr.sql` script from SQL*Plus, using an account with DBA privileges, and using the following command:

```
@SIEBEL_ROOT/dbsrvr/oracle/grantusr.sql
```

NOTE: You must specify the full path to the *SIEBEL_ROOT* directory.

The script prompts you for the default tablespace in which your Siebel objects are to be created.

2 Type the tablespace name you listed in Appendix A, "Deployment Planning Worksheets."

Configuring the Siebel Database Server on Oracle

Configuring the Siebel Database Server for installation consists of the following tasks:

- "Installing Siebel Database Server Components on Oracle" on page 287
- "Importing the Siebel Repository on Siebel DB Server for Oracle" on page 294

You will perform these tasks using the Siebel Database Server Configuration Wizard.

Installing Siebel Database Server Components on Oracle

When you choose `Install a new Siebel Database` from the Siebel Database Server Options menu of the Siebel Database Server Configuration Wizard, the utility performs the following tasks:

- Creates Siebel tables and indexes
- Imports Siebel seed data
- Sets system preferences

To install Siebel Database Server components

1 Navigate to $*SIEBEL_HOME*/bin and source environment variables, using one of the following commands, depending on the type of shell you use:

Korn or Bourne shell

```
. ./siebenv.sh
```

TIP: Make sure there is a space between the initial period and `./siebenv.sh`.

C shell

```
source siebenv.csh
```

where:

$*SIEBEL_HOME* is the location of the Siebel Server root directory

2 Verify whether the values `SIEBEL_ROOT` and `LANGUAGE` are correctly set or are empty by entering:

```
env
```

If the variables are incorrect or missing, reset them using one of the following commands, as appropriate to the shell you use:

Korn or Bourne shell

```
SIEBEL_ROOT=New Value ; export SIEBEL_ROOT
LANGUAGE=New Value; export LANGUAGE
```

C shell

```
setenv SIEBEL_ROOT New Value
setenv LANGUAGE New Value
```

3 Navigate to $*SIEBEL_ROOT* /bin and run the following script:

```
dbsrvr_config.ksh
```

This launches the Siebel Database Server Configuration Wizard.

The script begins by displaying the current settings for the SIEBEL_ROOT and LANGUAGE variables and prompts you as to whether these settings are correct.

4 Confirm whether or not the settings are correct by entering either Y or N.

NOTE: If either the SIEBEL_ROOT or LANGUAGE value is not set or is incorrect, you must correct them before proceeding.

The Configuration Wizard validates the existence of the *SIEBEL_ROOT* directory.

The Configuration Wizard then prompts you for the path for the Siebel Database Server root directory.

5 Specify the path of your Siebel Database Server root directory, or press ENTER to accept the current setting.

The Configuration Wizard proceeds to display the list of supported database platforms:

```
Select the RDBMS Platform:

1- IBM DB2 UDB for UNIX and Windows
2- Oracle Database Enterprise Edition
```

6 Enter 2 to select Oracle.

The script displays the Siebel Database Operation menu, as follows:

```
Select the Siebel Database Operation

1- Install Database
2- Upgrade Database
3- Import/Export Repository
4- Migrate Repository
5- Run Database Utilities
```

7 Enter `1` to select `Install Database`.

The Siebel Database Server Configuration Wizard prompts you as to whether you ran `grantusr.sql` to set up your tableowner and administrator accounts.

8 Enter `Y` to confirm or `N` to exit the Configuration Wizard to run this script.

NOTE: These accounts must be in place or you will not be able to complete installation of your seed data, tables, and indexes.

If you elected to proceed, the script displays the Installation Options menu:

```
Select one of the following options:

1- Install Siebel Database
2- Add a language to an existing Siebel Database
```

9 Enter `1` to install the Siebel Database components for this database.

10 Verify the type of code page for your database, then enter the number that corresponds to the database encoding value for your database:

```
1- Unicode
2- Non-Unicode
```

CAUTION: Carefully choose the correct option for your database to prevent installation of the wrong datatypes. The database will not be able to create Unicode datatypes on a non-Unicode page setting, so check this setting carefully before choosing the option.

The script displays the list of currently installed languages.

11 Enter the number corresponding with the language in which you want to run your database.

NOTE: This is referred to as the primary(base) language for your database.

12 Specify the ODBC data source name; for example `Ora04206`.

13 Enter the user name for the Siebel administrator for your database; for example, `SADMIN`.

14 Enter the password for the specified Siebel database administrator account, for example, `ORASADMIN`.

15 Enter the database tableowner name; for example, `siebel`.

16 Enter the database tableowner password; for example, `orasadmin`.

17 Enter the name of your index tablespace; for example, `INDEX01`.

18 Enter the name of your tablespace; for example `DATA01`.

After you have completed your database specifications, the Configuration Wizard displays the list of configured values and prompts you as to whether you want to launch the Siebel Upgrade Wizard (`srvrupgwiz`).

19 Enter `Y` to confirm your specifications and launch the Upgrade Wizard or `N` to reject the values and exit the Configuration Wizard.

- If you need to change the values you previously entered, rerun the Configuration Wizard by running the `dbsrvr_config.ksh`. This allows you to reconfigure with different values.
- If a program or system error occurs and you need to rerun the Siebel Upgrade Wizard, you can do so, starting at the point at which the wizard failed, by navigating to `$`*`SIEBEL_ROOT`*`/bin` and entering the following command:
  `srvrupgwiz -m master_install.ucf`

If the upgrade was successful, the Siebel Upgrade Wizard displays a success message when installation is complete.

Reviewing the Log Files for Siebel DB Server Installation on Oracle

The Siebel Database Server component installation creates a number of log files, such as `srvrupgwiz.log` and `srvrupgwiz1.log` (which increments to additional logs) within the `$`*`SIEBEL_ROOT`*`/log` subdirectory, which you must review for any errors.

When you install seed data, tables, and indexes for Oracle, it generates a number of log files.

When you install your primary(base) Language Pack, it creates a special log file with the name `dataimp_prim_lang.log`.

Acceptable Errors for Siebel DB Server Installation on Oracle

The log files may include errors that are expected and benign. Compare any error messages found in the log files to the sample error messages in the `errors.txt` file, which is located in the installation subdirectory for your database platform; for example, `oracle`. (If a log file is not listed in the `errors.txt` file, then there are no acceptable error messages for that log file.) No further action is required if the log files contain errors listed in the `errors.txt` file.

NOTE: Only one of each type of error occurring in a particular log file appears in the `errors.txt` file.

If you find errors not listed in the `errors.txt` file, correct the condition that caused the errors, and rerun the Upgrade Wizard. The wizard will restart from the point where it left off.

Do not review error numbers alone, since these may have changed following installation of a new driver version. Instead, compare the actual error descriptions to find out which are acceptable errors for this platform.

CAUTION: Although other errors are rarely encountered, this review is critical. Certain errors, such as a failure to create indexes, may result in performance problems or anomalous behavior in Siebel eBusiness Applications.

Troubleshooting Siebel DB Server Installation on Oracle

Typically, problems during database installation result from insufficient storage space having been allocated, or from the installer having improper user privileges.

Providing a Rollback Segment on Oracle

To avoid certain types of errors after importing the repository, make sure that your database administrator provides only one large rollback segment online in your Oracle database.

Importing the Repository to a Target Database Host on Oracle

Some organizations download tarfiles onto one machine and, for convenience, install seed data and import the repository from this source machine to another target server where the database resides. If your organization does this, and your platform is Solaris, you must set the following UNIX environment variables for Oracle on the source machine or your repository import will fail:

NLS_LANGUAGE_NLS_TERRITORY.NLS_CHARACTERSET

where:

NLS_LANGUAGE is the language in which your Oracle database runs; for example, FRENCH CANADIAN.

NLS_TERRITORY is the territory or region that applies to your language; for example, CANADA .

NLS_CHARACTERSET is the character set (also called a code page) that applies to your platform and locale; for example, WE8MSWIN1252 (Western European on Sun Solaris).

To obtain the correct values for these variables, do one of the following:

- Query the *v$nlsparameters* table.
- Ask your Oracle administrator.

CAUTION: The source node from which you install and execute must house a Siebel Server.

Importing the Siebel Repository on Siebel DB Server for Oracle

As a final step, you must import the Siebel Repository. This populates all the repository tables in the Siebel Database Server with the new Siebel eBusiness Applications, version 7 application objects.

NOTE: Regardless of how many Siebel eBusiness Applications you are using (for example, Siebel Sales, Siebel Service), you will load the repository tables only once.

To import the repository

1. Navigate to `$SIEBEL_HOME/bin` and source environment variables, using one of the following commands, depending on the type of shell you use:

   Korn or Bourne shell

   ```
   . ./siebenv.sh
   ```

   TIP: Make sure there is a space between the initial period and `./siebenv.sh`.

   C shell

   ```
   source siebenv.csh
   ```

   where:

   `$SIEBEL_HOME` is the location of the Siebel Server root directory.

2. Verify whether the values `SIEBEL_ROOT` and `LANGUAGE` are correctly set or are empty by entering:

   ```
   env
   ```

   If the variables are incorrect or missing, reset them using one of the following commands, as appropriate to the shell you use:

   Bourne or Korn shell

   ```
   SIEBEL_ROOT=New Value ; export SIEBEL_ROOT
   ```

```
LANGUAGE=New Value; export LANGUAGE
```

C shell

```
setenv SIEBEL_ROOT New Value
setenv LANGUAGE New Value
```

3 Navigate to $*SIEBEL_ROOT*/bin and run the following script:

```
dbsrvr_config.ksh
```

This launches the Siebel Database Server Configuration Wizard.

NOTE: You must have read, write, and execute permission to run this script successfully.

The script begins by displaying the current settings for the SIEBEL_ROOT and LANGUAGE variables and prompts you as to whether these settings are correct.

4 Confirm whether or not the settings are correct by entering either Y or N.

NOTE: If either the SIEBEL_ROOT or LANGUAGE value is not set or is incorrect, you must correct them before proceeding.

---

5 Specify the path of your Siebel Server root directory, or accept the default by pressing ENTER.

6 Specify the path of your Siebel Database Server root directory, or accept the default by pressing ENTER.

The script displays the RDBMS Platform screen.

```
Select the RDBMS Platform:
1- IBM DB2 UDB for UNIX and Windows
2- Oracle Database Enterprise Edition
```

7 Type 2 and press ENTER to select Oracle Database Enterprise Edition.

The script displays the Siebel Database Operation menu, as follows:

```
Select the Siebel Database Operation

1- Install Database
2- Upgrade Database
3- Import/Export Repository
4- Migrate Repository
5- Run Database Utilities
```

8 Type `3` and press `ENTER` to select `Import/Export Repository`.

The script displays the Repository Operations menu:

```
Select one of the following options:

1- Import Repository
2- Add language to an existing Repository
3- Export Repository
```

9 Type `1` and press `ENTER` to select Import Repository.

The script displays the Import Repository options menu:

```
Specify your import repository option:

1- Import Siebel Repository
2- Import Custom Repository
```

10 Specify the type of Repository you want to import.

The script displays the list of available Language Packs.

11 Enter the number that corresponds to the Language Pack you want to install.

NOTE: In a Unicode-enabled database environment, you can install any of the available Siebel language packs. In a non-Unicode database environment, you must consider the correlation of the language packs you want to install and the characters supported by your database code page. For example, in a Western European code page database, you can only install Western European language packs such as English, French, Spanish, or German language packs. And in a Japanese code page database, you can only install Japanese or English language packs.

For a list of supported code pages and encoding strategies, see *System Requirements and Supported Platforms*.

12 Enter the ODBC data source name; for example, `siebsrvr_ent_srvr1`.

NOTE: The Siebel Server installation process automatically creates the data source, using the format `siebsrvr_`*`enterprise_server_name`*.

13 Enter the user name for the Siebel administrator for your database; for example, `SADMIN`.

14 Enter the password for the specified database administrator account; for example, `ORASADMIN`.

15 Enter the Oracle database tableowner name; for example, `siebel`.

16 Enter the database tableowner password; for example, `orasadmin`.

17 Enter the name of your repository or accept the default; for example, `Siebel Repository`.

18 Enter the name of your repository file name or accept the default; for example, `mstrep.dat`.

After you have completed your import Repository specifications, the Configuration Wizard displays the list of configured values and prompts you as to whether you want to launch the Siebel Upgrade Wizard (`srvrupgwiz`).

19 Enter `Y` to confirm your specifications and launch the Upgrade Wizard or `N` to reject the values and exit the Configuration Wizard.

- If you need to change the values you previously entered, rerun the Configuration Wizard by running the `dbsrvr_config.ksh`. This allows you to reconfigure with different values.
- If a program or system error occurs and you need to rerun the Siebel Upgrade Wizard, you can do so, starting at the point at which the wizard failed, by navigating to `$`*`SIEBEL_ROOT`*`/bin` and entering the following command: `srvrupgwiz /m master_install.ucf`

If the upgrade was successful, the Siebel Upgrade Wizard displays a success message when installation is complete.

Reviewing the Log Files for Repository Import on Oracle

The repository import process creates a number of log files, such as `srvrupgwiz.log` and `srvrupgwiz1.log` (which increments to additional logs) within the `$SIEBEL_ROOT/log` subdirectory, which you must review for any errors.

When you import a repository with a new language, it creates the following special log files:

```
imprep_prim.log
gen_updatestats_imprep.log
updatestats_imprep.log
```

Acceptable Errors for Repository Import on Oracle

The log files may include errors that are expected and benign. Compare any error messages found in the log files to the sample error messages in the `errors.txt` file, which is located in the Siebel Database Server platform subdirectory; for example, `db2udb`. (If a log file is not listed in the `errors.txt` file, then there are no acceptable error messages for that log file.) No further action is required if the log files contain errors listed in the `errors.txt` file.

NOTE: Only one of each type of error occurring in a particular log file appears in the `errors.txt` file.

If you find errors not listed in the `errors.txt` file, correct the condition that caused the errors, and rerun the Upgrade Wizard.

Do not review error numbers alone, since these may have changed following installation of a new driver version. Instead, compare the actual error descriptions to find out which are acceptable errors for this platform.

CAUTION: Although other errors are rarely encountered, this review is critical. Certain errors, such as a failure to create indexes, may result in performance problems or anomalous behavior in Siebel eBusiness Applications.

Troubleshooting Repository Import on Siebel DB Server on Oracle

Typical problems that may occur at this stage consist of the following:

- Importing a repository with the same name as an existing repository.
- Inability to allocate pages.

The preceding errors should appear in the log files produced by the repository import process.

Post-Installation Tasks for Siebel DB Server Installation on Oracle

Perform the following tasks after you complete your installation of the Siebel Database Server:

- "Verifying System Preferences After Siebel DB Server Installation on Oracle" on page 299
- "Importing a New Language to Your Repository on Oracle" on page 301
- "Populating the Siebel File System for Siebel DB Server on Oracle" on page 303

Verifying System Preferences After Siebel DB Server Installation on Oracle

After you complete installation and configuration of your Siebel Database Server, you must verify system preferences for the Siebel application in Siebel Tools. For installation instructions for Siebel Tools, see *Siebel Tools Reference*.

To verify system preferences

1 Launch Siebel Tools and navigate to Screens > System Administration > System Preferences.

2 Look for `System Preference Name = Enterprise DB Server Code Page` and verify that the value has been set correctly, based on the value that you selected during installation of the database server components ("Installing Siebel Database Server Components on Oracle" on page 287). For a list of the appropriate values, see Table 30.

NOTE: The Code Page value must be in lowercase, for example, utf-8.

Table 30. Acceptable Values for Enterprise DB Server Code Page

Value	Language	Database
utf-8 (Unicode)	All	Oracle9*i*
cp932 (or equivalent)	Japanese	Oracle 8*i*
cp1252 (or equivalent)	Western European	Oracle 8*i*

3 If your database is Unicode-enabled, verify that column `UNICD_DATATYPS_FLG` in table S_APP_VER has the Unicode flag set correctly, as illustrated below:

- Codepage = `N`
- Unicode Oracle = `8`

NOTE: The data type flag must be uppercase.

Installing Multilingual Seed Data on Your Siebel DB Server on Oracle

If your organization deploys internationally and, therefore, requires data to be in multiple languages, you must install multilingual seed data (for example, lists of views, responsibilities, or system preferences). To do this, you add new Language Packs to your database after you have installed the primary(base) language for your Siebel Database Server. This populates the List of Values (LOV) with seed data in the new language.

Only after you successfully install seed data in your primary(base) language can you add seed data in other languages to your database.

CAUTION: You must have already installed those languages you want the Siebel Database for the Enterprise to support on the Siebel Server associated with it before you add them to the database.

To install multilingual seed data

1. Insert or mount the *Solaris|AIX Server Programs Base* CD-ROM and follow the instructions under "Installing the Siebel Database Server Software on Oracle" on page 278 until you get to Step 7, but select `2` to select `Add a new language to an existing instance`.
2. Follow the rest of the prompts, inserting the required number of Language Pack CDs for your Siebel product.
3. When language installation is complete, follow the procedure for "Installing Siebel Database Server Components on Oracle" on page 287 up to Step 9, but enter `2` to select `Add a language to an existing Siebel Database`.
4. Answer the remaining prompts as you did when you installed your primary(base) language seed data.
5. Enable the multilingual list of values (MLOV) capability within Siebel eBusiness Applications. For information, see *Siebel Tools Reference*.

Importing a New Language to Your Repository on Oracle

After you successfully import your Siebel Repository in its primary(base) language, you may add additional languages to it.

By adding a new language to your repository, you populate rows of localizable information, which allows Siebel eBusiness Applications to better operate in the new language.

Regardless of how many Siebel eBusiness applications you are using (such as Siebel Sales, Siebel Service, Siebel Marketing), you perform this step only once for each language you want to install.

To import a new language to your repository

1. Follow the procedure for "Importing the Siebel Repository on Siebel DB Server for Oracle" on page 294 up to Step 6 on page 295, but choose option `2`, `Add Language to an Existing Repository.`
2. Answer the remaining prompts as you did when you imported your primary(base) language repository.

NOTE: If the repository import fails, or you receive a system error while importing a new language to the repository, you must navigate to `$SIEBEL_ROOT/bin` and enter and enter:
`siebupgwiz /m master_imprep_`*`lang`*`.ucf`

Populating the Siebel File System for Siebel DB Server on Oracle

Specific files needed to run the Siebel File System, such as correspondence templates and Siebel Marketing files, are provided with the Siebel Database Server software. A subdirectory called `files` is created when you install the Siebel Database Server.

Your DBA must populate the File System directory with these file attachments after installing the Siebel Database Server, and before running the Siebel Web Client.

To populate the Siebel File System directory

1. Copy the appropriate files from the `/files` subdirectory of the Siebel Database Server software to the `/att` subdirectory of the Siebel File System.
2. Copy the `KB.kb` file from the `/files` subdirectory of the Siebel Database Server software to the `/cms` directory within the Siebel File System.
3. Verify that the files are where they need to be.

Installing Siebel Web Server Extension 12

This chapter is written for system administrators or Web masters who will install and configure the Siebel Web Server Extension (SWSE).

The tasks required to install and configure the Siebel Web Server Extension are found in Table 31.

Table 31. SWSE Installation and Configuration Tasks

Who Performs It?	Task
System Administrator	**1** Plan your deployment strategy. See "Planning Siebel Web Server Deployment" on page 307. **2** Verify that your Siebel Gateway and Siebel Servers are installed and started. See "Verifying the Siebel Gateway and Enterprise Server" on page 309. **3** Review the requirements for the Web server for your platform. See "Verifying Web Server Requirements" on page 309. **4** Review the requirements for using Siebel Language Packs on the Web Server. See "Web Server Language Pack Requirements" on page 310. **5** Install the Web server. See "Installing the Web Server" on page 310. **6** Install your load-balancing software, if any. ■ (Optional) Install Central Dispatch. Chapter 3, "Implementing Load-Balancing with Central Dispatch." ■ If you will be using a different product to load balance your Web servers, follow the vendor instructions for installation and configuration. **7** Install the Siebel Web Server Extension plug-in. See "Installing and Configuring the Siebel Web Server Extension" on page 312. **8** Review the installation directories. See "Reviewing Installation Directories for Siebel Web Server Extension" on page 320. **9** Enable HTTP compression. See "Enabling HTTP Compression for Siebel Web Applications" on page 323. **10** (Optional) Edit the `eapps.cfg` file if appropriate to your deployment. See Appendix D, "Structure of the eapps.cfg File." **11** If you use Sun ONE (iPlanet) Web server, make files available to it. See "Configuring Sun ONE (iPlanet) to Accept Siebel Web Server Extension" on page 329. **12** Start shell scripts. See "Daemon Processes You Must Restart" on page 331.

Planning Siebel Web Server Deployment

Before installing the Siebel Web Server Extension, you must have already installed the following components:

- A supported Web server
- Siebel Gateway
- Siebel Enterprise Server and one Siebel Server, with the Siebel Object Managers enabled through Server Manager for the Siebel eBusiness Applications you purchased. For information, see *Siebel Server Administration Guide*.

NOTE: Install any Siebel Servers additional to the initial Siebel Server *after* you have installed the Siebel Web Server Extension and, if applicable, the Mobile Web Client software. This allows you to verify that you have a working connection between the Web server and the initial Siebel Server.

Before beginning the installation process, decide how you will distribute the server components.

- **Single-node.** Installation of the Siebel Enterprise Server component and your Web server on a single machine or node (recommended only for Siebel MidMarket customers).
- **Distributed.** Distribution of the above-mentioned components across multiple Web servers connecting to multiple Siebel Object Managers whose load can be dynamically balanced across multiple Siebel Servers within a Siebel Enterprise Server.

NOTE: For the best performance and scalability, it is recommended that the Web server reside on a separate machine from the Siebel Enterprise Server.

Deployment Limitations When Using Reverse Proxy Servers

You can only deploy Siebel applications that support the standard interactivity client on a Web server instance that is placed behind a reverse proxy server. You cannot deploy Siebel Employee applications, such as Siebel Call Center, or other Siebel applications that support the high interactivity client, on a Web server instance placed behind a reverse proxy server.

Special Deployment Cases

In either a single-node or distributed configuration, the database server resides on a separate node; its installation is independent from the servers listed above.

If you install Central Dispatch on any of your Siebel Servers, you cannot also install it on your Web servers and configure it on the same VIP or Central Dispatch site as the Siebel Server. This is because the Central Dispatch software on the Web server cannot send requests to the same VIP on the Siebel Server from which it receives requests.

Recommended Siebel Web Server Topology

Each deployment choice involves trade-offs. However, in enterprise-size deployments, it is strongly recommended that you use a distributed node deployment for the following reasons:

- **Less resource contention.** Distributing the Web server and the Siebel Server (with Siebel Object Managers) on different machines eliminates contention for CPU and other server resources. However, to take advantage of the performance improvement, you must have a high-speed network connection between the two machines.
- **Load balancing.** A single Web server can distribute the load of multiple user requests among multiple Siebel Object Manager instances, using the connection brokering capabilities of Central Dispatch.
- **Higher fault tolerance.** Operating multiple instances of components on multiple machines reduces downtime and the impact of failure on any one machine.
- **Greater flexibility with firewalls.** Putting the Siebel Web Server Extension on a different machine from the Siebel Server and Siebel Object Managers lets you deploy your Web server outside the firewall while keeping the Siebel Enterprise Server components behind the firewall.

- **High availability.** A multi-node configuration is required for deployments that support large numbers of concurrent users, or where high availability is an operating requirement.

Verifying the Siebel Gateway and Enterprise Server

You must have installed and configured the Siebel Gateway and a Siebel Enterprise Server containing at least one Siebel Server before installing the Siebel Web Server Extension. Complete the steps in Chapter 6, "Installing the Siebel Server," to install and configure the Siebel Enterprise Server entities, following the configuration chosen in the previous step.

If you are installing the Siebel Server and Siebel Web Server Extension on the same machine, use separate installation directories to avoid file permission problems at installation time.

CAUTION: If you install the Siebel Gateway and the Web server on the same UNIX server, do not try to start the Web server using the same shell you used to start the Siebel Gateway. The environment variables used to start the Siebel Gateway are not compatible with the variables used to start the Web server, which may lead to unexpected results.

Verifying Web Server Requirements

Make sure that the machine that will support the Siebel Web Server Extension plug-in meets all the hardware and software platform requirements documented in *System Requirements and Supported Platforms*.

If you have more than one Web server, consider installing Central Dispatch on each to take advantage of its load-balancing capabilities.

The HTTP process that hosts the Siebel Web Server Extension can communicate with multiple Siebel Servers. You cannot, however, install multiple Siebel Web Server Extensions to a single Web server.

Web Server Language Pack Requirements

IBM's HTTP Server (IHS), Sun's Sun ONE (iPlanet) Web server, and the HP-Apache2 Web server can be installed with multiple language packs on one Web server.

NOTE: The Siebel Server and the Web server do not need to be operated in the same language. However, your Siebel Server, your Web server, and all other server components must use the same character set. For more information, see *Global Deployment Guide*.

Specifying the Domain Name

For Solaris or Sun ONE (iPlanet) installations, add the domain name to either `/etc/hosts` or `resolve.conf`.

Installing the Web Server

Before installing the Siebel Web Server Extension, install, configure, and start the supported Web server software on the designated machine. For the best performance and scalability, it is recommended that the Web server reside on a dedicated machine.

Follow the instructions from the vendor to complete these tasks.

NOTE: Make sure that the user running the Web server has read, write, and execute permission to the *`$SWEAPP_ROOT`* directory and its subdirectories.

Enabling HP-Apache2 Web Server to Find Siebel Libraries

You need to enable the HP-Apache2 Web server to find Siebel libraries. On the machine hosting the Web server, execute the command:

```
chatr +s enable $HPAPACHE_ROOT/bin/httpd
```

where:

$*HPAPACHE_ROOT* = the root location of the HP-Apache Web server.

You need to execute this command only once, after you install HP-Apache2 Web Server for the first time, or after upgrading the Web Server.

Editing the httpd.conf File on IHS and HP-Apache2

The IHS and HP-Apache2 servers may ship with the default character encoding setting `AddDefaultCharset ISO-8859-1` in the `httpd.conf` configuration file. For nonresident user interface languages, this setting makes some static content such as launch pop-ups, About boxes, and help pages display incorrectly. Follow the procedure below to reset this for non-Western languages.

To modify the httpd.conf file

1. If using IHS, navigate to the `httpd.conf` file, usually located under `/usr/IBMIHS/conf`. For HP-Apache2, the directory is `/opt/hpapache2/conf`.
2. Open `httpd.conf` with a text editor such as `vi`.
3. Locate the line `AddDefaultCharset ISO-8859-1` and comment it out by placing a pound sign "#" character at the beginning of the line.
4. Save the file.
5. Restart the server.

Installing and Configuring the Siebel Web Server Extension

The Siebel Web Server Extension (SWSE) files will be installed on the same machine as the Web server. The installation program sets up the Siebel directory structures, copies required files and components to the target disk, and configures the host environment.

NOTE: To prevent installation problems related to permissions, the user who installs the SWSE should be the same user or have the same permissions as the user who installed the Web server instance.

To install the Siebel Web Server Extension plug-in

NOTE: This procedure is for installing the base product. For patch installation instructions, refer to *Maintenance Release Guide* provided with the patch.

1. Insert the *UNIX_OS Server Programs, Web Server Extensions* CD-ROM into the CD-ROM drive of the server

   where:

   UNIX_OS = your UNIX operating system, such as Solaris, HP-UX, or AIX.

   NOTE: The volume label for the CD is `sea`*`UNIX_OS`*`eapplep1` or `sia`*`UNIX_OS`*`eapplep1`, as appropriate to the Siebel applications you are installing; it may not be required, depending on how you access the CD-ROM.

2. Open a new shell and unset any Siebel environment variables.
3. Verify the directories and permissions to those directories into which you will install the product. You must have write and execute permission.

4 Navigate to the `/eappweb` directory on the CD-ROM and open a new shell.

NOTE: To install the Siebel Web Server Extension, you must install using a user account that can modify the Web server files appropriate for your installation: Sun One, IBM HTTP, or HP-Apache 2 Web server files.

5 To start the Siebel Web Server Extension installation process, enter the following command, appending any desired flag described in "Additional Flags for Installation Commands" on page 106.

```
./setup UNIX_OS
```

The Installer Welcome screen appears.

6 Click Next.

If you have installed other Siebel components on the same machine, the installer displays the message that an existing installation has been found.

7 Depending on whether you are installing your SWSE files for the first time or adding a new language to an existing instance, take the appropriate action, and then click Next:

- To install the server software in a new instance, select None as the default and click Next. Proceed to Step 8.
- To install a new language in an existing instance, select the displayed instance and click Next. Proceed to Step 9.

  See also "Installing Multiple Siebel Language Packs on the Siebel Server" on page 149 for important additional information on this topic.

The Installer Path screen appears.

8 Enter the fully qualified path to the installation directory and click Next.

The Installer Language Selection screen appears.

9 Choose the language or languages to be installed and click Next.

All servers are installed with at least one (base) language. Additional languages can be installed at a later date, if desired. For more information, see *Global Deployment Guide*.

When installing languages at a later date, you must also reinstall any patches that have been run on the directory.

NOTE: In a Unicode-enabled database environment, you can install any of the available Siebel language packs. In a non-Unicode database environment, you must consider the correlation of the language packs you want to install and the characters supported by your database code page. For example, in a Western European code page database, you can only install Western European language packs such as English, French, Spanish, or German language packs. And in a Japanese code page database, you can only install Japanese or English language packs.

For a list of supported code pages and encoding strategies, see *System Requirements and Supported Platforms*.

The Installation Verification screen appears.

10 Click Next.

The Installation Progress screen appears, and the installer creates uninstallation information.

- If you are installing more than one language, the Primary Language screen appears. Proceed to Step 11.
- If you are installing only one language, the Web Server Root Directory screen appears. Proceed to Step 12.

11 Select the primary language for this installation and click Next.

The Web Server Root Directory screen appears.

12 Select the root directory for the SWSE on your Web server and click Next.

The Resonate screen appears.

13 Click to indicate whether or not Resonate load-balancing is installed anywhere in this Enterprise and click Next.

- If you selected Yes, proceed to Step 14.
- If you selected No, proceed to Step 15.

The Siebel Gateway VIP Address screen appears.

14 Enter the Siebel Gateway virtual IP Address and click Next.

The Siebel Gateway Address screen appears.

15 Enter the actual Gateway IP address and click Next.

The Siebel Gateway Port screen appears.

16 Accept the default Siebel Gateway port number (`2320`), or change it, and click Next.

The Enterprise Name screen appears.

17 Enter the Siebel Enterprise Server name and click Next.

The Siebel Server Name screen appears.

18 Enter the name of the Siebel Server and click Next.

NOTE: This should be the descriptive name for this Siebel Server, *not the machine name.*

The Compression Type screen appears.

19 Click on the compression type and click Next.

The Encryption screen appears.

20 Click on the encryption type and click Next.

The Logging Level screen appears.

21 Choose the logging level, as indicated below:

fatal. Only fatal operational errors are logged.

errors. Only non-fatal and fatal operational errors are logged.

warnings. Only warning messages are logged.

info. Only non-fatal operational errors are logged.

details. All operational statistics, information messages, warnings, and errors are logged.

NOTE: For the best performance, choose `errors`. Choose `details` only for debugging, as it negatively impacts performance.

Click Next.

The Web Server HTTP Port screen appears.

22 Accept the default HTTP port, or enter a new port number, and click Next.

- To accept the default port (`80`), press Next.
- If you are using a different port number for HTTP, enter it now and click Next.

The Installer Configuration Web Server HTTPS (Secure HTTP) Port screen appears.

23 Accept the default Web Server HTTPS port (`443`), or enter a new port number, and click Next.

The Web Update Protection Key screen appears.

24 Enter the Web Update Protection Key that your administrator will use for Web maintenance.

This key, or password, allows only your Siebel Administrator to refresh the application image files on your Web server by accessing any updated images your developers have placed on the Siebel Server, following customizations with Siebel Tools.

The Web server contacts the Siebel Server and refreshes these images each time the administrator restarts it. However, administrators will find entering this password in a command line a much more efficient way to perform the image file refresh, particularly when multiple Web servers are deployed.

NOTE: Although this password is set during SWSE configuration, you may change the password later on, if desired, by editing it in the `eapps.cfg` file, located in the `/bin` subdirectory of your $*SWEAPP_ROOT* directory.

The Anonymous Login Employee Name screen appears.

25 Enter the anonymous employee login ID and click Next.

NOTE: This should be a login ID that any employee may use to access the Login view. The login ID should be a valid client login with privileges to navigate to Login views.

The Anonymous Login Employee Password screen appears.

This parameter is for employees who may browse applications without logging in.

NOTE: If you do not want to enable this feature for some employees, you can bypass this screen without entering anything by just clicking Next.

---

26 If you use this parameter, enter the anonymous login password, confirm it, and click Next.

The Anonymous Login Contact Name screen appears.

27 Enter the anonymous login contact name and click Next.

The Anonymous Contact Password screen appears.

28 Enter the anonymous login password, reconfirm it, and click Next.

The Restart screen appears.

29 Indicate whether or not you want to restart the Web server now to complete the changes and click Next.

The Installer Verification screen appears.

30 Verify the settings:

- To apply the settings, click Next.
- If you want to change any, use the Back button to go back and update any parameters. You can use the Next button to return to this screen and confirm your new values.

The Configuration Wizard displays the message that the Siebel Web Server Extension has been successfully installed.

31 Click Finish.

NOTE: If you did not choose to restart your Web server earlier during configuration, your changes will not take effect until you do so.

Installing Multiple Instances of SWSE

It is not supported to install multiple instances of SWSE on a single Web server to support different versions of Siebel eBusiness Applications in a production environment. As an alternative, for development and test environments, you can install separate Web server instances on a single box, with each listening to a different port. Each of these Web server instances can have its own SWSE. For more details on installing multiple instances of SWSE in your development and test environment, refer to Technical Note 456 on Siebel SupportWeb. You also need to modify the following two lines in the httpd.conf file:

```
Listen (IP Address of Web Server m/c):port#; for example,
172.20.167.154:16131
```

```
SeverName (m/c name):port; for example,
sdch70a012.siebel.com:16131
```

Post-Installation Tasks for Siebel Web Server Extension

Perform the following post-installation tasks only if your environment requires changes to the default settings, resulting from installation of the Siebel Web Server Extension, using the `eappweb` installer:

- "Reviewing Installation Directories for Siebel Web Server Extension" on page 320
- "Reviewing the Log Files for SWSE Plug-in Installation" on page 323
- "Enabling HTTP Compression for Siebel Web Applications" on page 323
- "Editing the Web Server Extension Configuration File (eapps.cfg)" on page 325
- "Granting User Permissions on the Web Server" on page 326
- "Configuring Sun ONE (iPlanet) to Accept Siebel Web Server Extension" on page 329

Reviewing Installation Directories for Siebel Web Server Extension

Review the physical and virtual directories created during installation of the Siebel Web Server Extension on the Web server host to familiarize yourself with the locations of files, such as the configuration file (`eapps.cfg`).

Physical Directories on Web Server

The following list shows physical Siebel directories installed on the Web server:

```
$SWEAPP_ROOT/
_uninst
bin/
languages/
eapps_fins.cfg
eapps.cfg
install_script
locale/
log/
public/
help/
eappweb_base.txt
languages/
demo/
issrun/
upgrade.log
```

bin. Contains the SWSE configuration file (`eapps.cfg`) that is largely responsible for SWSE functionality and that allows the SWSE to communicate with the Siebel Server.

locale. Contains resource files with information about any run-time errors.

log. Reports any communication errors between the SWSE and the Siebel Object Managers in the Siebel Servers.

public. Contains the default HTML file (`default.htm`) used to redirect the browser to the SWSE and subdirectories of the Siebel Server.

_uninst. Contains the uninstall program for Siebel eApps.

Virtual Directories on Web Server

Virtual directories are installed on the Web server for each installed Siebel eBusiness Web application. For example, there is an `eservice` directory for the eService product. The following section describes the virtual directory structure for each UNIX Web server.

IBM (IHS) and HP-UX (HP-Apache2) HTTP Web Servers

To verify your virtual directory, open the Web server configuration file `httpd.conf`. When using IHS, this file is located under `$`*`IHS_ROOT`*`/conf`. If you are using HP-Apache2, the default directory is `/opt/hpapache2/conf`.

The following example partially illustrates a virtual directory structure visible for Siebel eBusiness Applications on IHS or HP-UX.

```
Alias /ecustomer_enu /vol1/siebel/eappweb/public/enu
Alias /erm_enu /vol1/siebel/eappweb/public/enu
Alias /emarketing_enu /vol1/siebel/eappweb/public/enu
Alias /callcenter_enu /vol1/siebel/eappweb/public/enu
Alias /marketing_enu /vol1/siebel/eappweb/public/enu
```

Sun ONE (iPlanet) Web Server

To verify the virtual directory, open the Web server configuration file `obj.conf`, located under `$`*`iplanetserver/webserverinstance/`*`config/`.

The following example partially illustrates the virtual directory structure for Siebel eBusiness Applications on the Sun ONE (iPlanet) Web Server.

```
NameTrans fn="pfx2dir" from="/partnerfinder_enu" dir="/export/
home/siebel/public/enu"

NameTrans fn="pfx2dir" from="/ecustomer_enu" dir="/export/home/
siebel/public/enu"

NameTrans fn="pfx2dir" from="/emarketing_enu" dir="/export/home/
siebel/public/enu"

NameTrans fn="pfx2dir" from="/etraining_enu" dir="/export/home/
siebel/public/enu"

NameTrans fn="pfx2dir" from="/echannel_enu" dir="/export/home/
siebel/public/enu"

NameTrans fn="pfx2dir" from="/esales_enu" dir="/export/home/
siebel/public/enu"
```

```
NameTrans fn="pfx2dir" from="/sales_enu" dir="/export/home/
siebel/public/enu"...
```

Adding a New Virtual Directory on Web Server

Virtual directories are created automatically when you install the SWSE.

However, you may in some cases want to create your own virtual directory, for example, to be able to test features such as Web site single sign-on, so that you can point to an already existing Siebel Object Manager.

To do this, you would add the new virtual directory to either `obj.conf` (Sun ONE [iPlanet]) or `httpd.conf` (IHS and HP-Apache2), as appropriate, and as described below.

Following this, you must add the name of the new virtual directory to the appropriate connect string in the `eapps.cfg` file under `$`*`SWEAPP_ROOT`*`/bin`.

To add a new virtual directory for Sun ONE (iPlanet)

- Open the `obj.conf` file to view the existing virtual directories and add a line as shown below.

  ```
  NameTrans fn="pfx2dir" from="/myvirdir_lang" dir="/export/
  home/siebel/public/lang"
  ```

  where:

  `myvirdir_lang` = the name of the language-specific virtual directory.

  `lang` = the Siebel code for the language.

To add a new virtual directory for IHS

- Open the `httpd.conf` file to view the existing virtual directories and add a line as shown below.

  ```
  Alias /myvirdir_lang /export/home/swe/public/lang
  ```

To add a new virtual directory for HP-Apache2

- Open the `httpd.conf` file to view the existing virtual directories and add lines like those shown below.

```
<VirtualHost *>
ServerName www.domain.tld
DocumentRoot /www/domain
</VirtualHost>
```

where:

www.domain.tld = the new top level domain.

/www/domain = the directory path to the virtual domain's root.

Reviewing the Log Files for SWSE Plug-in Installation

The Siebel Web Server Extension plug-in generates one or more log files as a result of connection attempts with the Siebel Server. These log files reside in a subdirectory created by the Siebel Web Server Extension installer under `$SWEAPP_ROOT/log`.

Depending on the logging level you choose, these files record errors, warnings, and general information. Events such as Web server failures or invalid configuration of the Siebel Web Server Extension are captured in these logs. Analyzing the log files can provide clues for troubleshooting problems with the SWSE.

Enabling HTTP Compression for Siebel Web Applications

The use of HTTP compression between the browser and the Web server can improve the performance of Siebel eBusiness Applications over a wide-area network (WAN). Typically, you should consider enabling HTTP compression if a significant number of users access applications over a WAN for which network bandwidth may be a constraint.

The benefit of compression is even greater for users who access applications using standard interactivity, rather than high interactivity, because the latter is already optimized for network use.

However, if your users access applications mostly over a local-area network (LAN), turning on HTTP compression does not improve performance. Instead, it might create performance overhead related to the extra processing needed on both the client and the server sides to compress and decompress data.

HTTP compression is available for all supported Web server platforms without any additional installation. HTTP compression functionality is built into the Siebel Web Server Extension plug-in.

To make HTTP compression active, you must enable HTTP compression by setting the *DoCompression* parameter in the eapps.cfg file. The following section describes the steps involved for this procedure.

You can enable or disable HTTP compression as default functionality for all applications or selectively for individual applications. By default, HTTP compression is enabled for all applications.

To enable HTTP compression

1. Open the eapps.cfg file, located in the $*SIEBEL_ROOT*/*SWEAPP_ROOT*/bin, in a text editor. Do one or both of the following:
   - To enable HTTP compression as default functionality, set the *DoCompression* parameter to TRUE in the [defaults] section. If the DoCompression parameter is not present, add it.
   - To enable HTTP compression for an individual application, set the *DoCompression* parameter to TRUE in the section for that application. For example, in [/callcenter] set DoCompression = TRUE. If the *DoCompression* parameter is not present, add it.

   NOTE: Setting a parameter for an individual application overrides the default setting that may appear in the [defaults] section. If a parameter is set as a default, then its value applies to all applications for which it is not overridden at the individual application level.

2. Save and close the eapps.cfg file.
3. Restart the Web server.

   NOTE: Changes to the eapps.cfg file are not active until you restart the Web server.

To disable HTTP compression as a default or for an individual application, set *DoCompression* to FALSE in the appropriate section of the eapps.cfg file.

Editing the Web Server Extension Configuration File (eapps.cfg)

The eappweb installer installs a single configuration file, eapps.cfg, for all the selected Siebel eBusiness Applications.

The default location for this file is the $*SIEBEL_ROOT*/*SWEAPP_ROOT*/bin subdirectory of the installation on your Web server host. The eapps.cfg file contains configuration information that you entered during the installation of the Siebel Web Server Extension on the Web server, including identity and connectivity information for the Siebel Object Managers, and login and security settings.

The file is divided into sections that can be used to configure a selection of Siebel eBusiness Applications from a global standpoint or at the application level. These are explained in the following pages. A number of parameters can also be manually input to control security, the ports used for Web server communications, and other operations.

NOTE: IHS and HP-Apache2 users must have read privileges to access the eapps.cfg file. Also, if you selected any port other than the default for the Siebel Web Server Extension listening port, make sure that all users have read privileges for the eapps.cfg file.

To edit the eapps.cfg file

1. Use any text editing tool, such as vi.
2. Make any necessary changes as required.
3. Save the eapps.cfg file and restart the Web server.
4. In order for your changes to take effect, stop and restart any running processes, as described in "Daemon Processes You Must Restart" on page 331.

There are parameters that you may be required to set that enable specific applications or functionality at the Siebel Object Manager level on the Siebel Server. For information, see the appropriate section of *Siebel Server Administration Guide*.

NOTE: You may need to configure secure connections to your Siebel applications. For more information, see *Security Guide for Siebel eBusiness Applications*.

Structure of the eapps.cfg File

The `eapps.cfg` file is divided into sections that can be used to configure a selection of Siebel eBusiness Applications from a global standpoint or at the application level. A number of parameters can also be manually input to control security, the ports used for Web server communications, and other operations. For more information about the `eapps.cfg` file, see Appendix D, "Structure of the eapps.cfg File."

Granting User Permissions on the Web Server

After installing the Siebel Web Server Extension on a Web server running UNIX, take the following steps.

To modify permissions on all platforms

- Verify that the Web server administrator has read and execute permission on all Siebel Web Server Extension directories and files.
- Verify that the directories containing the files for the Web image publishing and file caching features have read and write permission to the SWSE plug-in process owner.

To modify permissions on Sun ONE (iPlanet) Web Server

1. Verify that you have already installed Sun ONE (iPlanet) Web Server (IWS) Version6 Sp2. This version and patch is required to use Siebel Web plug-in 7.5.2 on Solaris.
2. Once the correct version of the Sun ONE (iPlanet) Web server is installed, use the Sun ONE (iPlanet) Web server administration console to create a Web server instance. You can find the administration console at:

IWS_install/https-admservh

where:

IWS_install = the root directory of the Sun ONE (iPlanet) Web server.

3 In that directory, run ./start to open the administration console.

4 Open an instance of Internet Explorer browser and enter the following URL:

http://*machineName*:*portNumber*/https-admserv

where:

machineName = the name of the local machine on which the Web server resides.

portNumber = the port number of the HTTP Web server.

The Sun ONE (iPlanet) Web server administration console is displayed in the browser window.

5 In the Web server administration console, choose Add Server. Enter the following values required to define the new instance of the Web server:

- Server Name: This can be any name, but is usually the host computer's name, as in *machine_name.domainname.com*.
- Server Port: The port number on which you want to run this Web server.
- Server Identifier: This can be any name, but is usually identified as *machine_name-port_number*.

CAUTION: If you use port 1 to 1024, you must have root privileges to start the Web server. If you do not have or need root privileges, use a port number greater than 1024. Verify that your port is available using the command:

```
netstat -a | grep port number
```

- Server User: Usually either *root* or the system user based on which port you choose.
- MTA Host: Accept the default.

6 Install the Siebel Web Server Extension. Run `install_eappweb` under a user account that can modify Sun ONE (iPlanet) Web server configuration files.

NOTE: If you installed Sun ONE (iPlanet) using root privileges, you must have root privileges to install the Siebel Web Server Extensions.

---

7 When the installer asks you for the root directory for Sun ONE (iPlanet), enter the root directory of the IWS instance you previously defined, for example,

`$IWS_HOME/$IWS_INSTANCE`

where:

IWS_HOME = the root directory of the Sun ONE (iPlanet) Web server.

IWS_INSTANCE = the directory of the instance you created.

8 Verify that the account the Sun ONE (iPlanet) `httpd daemon` uses has the following privileges:

a Write permissions for the `$SWEAPP_ROOT/log` directory. Typically this means that you must change the permissions for the appropriate directory.

b Recursive read and write permissions to all files in the `$SWEAPP_ROOT/public` and `$SWEAPP_ROOT/public/enu` directory.

To modify Permissions on IBM HTTP Server (IHS) and HP-Apache2

Make sure that the login running the Web server has the following permissions for the scripts installed with the Siebel Web Server Extension:

- Read, write and execute privilege for starting and stopping the Web server.
- Write permission for the log file path.

- Read-write permissions to files in $*SWEAPP_ROOT*/public.

CAUTION: If you use port 1 to 1024, you must have root privileges to start the Web server. If you do not have or need root privileges, use a port number greater than 1024. Verify that your port is available using the command:

```
netstat -a | grep port number
```

1. Install the Siebel Web Server Extension. Run install_eappweb under a user account that can modify IBM HTTP or HP-Apache 2 Web server configuration files.

   NOTE: If you installed your Web server using root privileges, you must have root privileges to install the Siebel Web Server Extensions.

2. Verify that the account the IBM HTTP or HP-Apache 2 httpd daemon uses has the following privileges:

   a. Write permissions for the $*SWEAPP_ROOT*/log directory. Typically this means that you must change the permissions for the appropriate directory.

   b. Recursive read and write permissions to all files in the $*SWEAPP_ROOT*/public and $*SWEAPP_ROOT*/public/enu directory.

Configuring Sun ONE (iPlanet) to Accept Siebel Web Server Extension

If your Web server runs under the Solaris operating system, it is crucial that you configure the Sun ONE (iPlanet) Web server to accept the changes that the Siebel Web Server Extension (eappweb) installer makes to the Sun ONE (iPlanet) server configuration files after you install Siebel Web Server Extension. Otherwise, changes that you may make in the future to the Sun ONE (iPlanet) Web server configuration will overwrite the changes made by the Siebel installation script.

To make sure that the Sun ONE (iPlanet) Web server accepts changes made by Siebel Web Server Extension

1. Navigate to the Sun ONE (iPlanet) Web Server Administration page. (For instructions, see the Sun ONE (iPlanet) documentation.)

2 Click the button that shows the server instance on which the Siebel Web Server Extension was installed.

   This takes you to the Server Preferences page for the instance.

3 On the upper-right side of the Server Preferences page, click Apply.

   This displays another page with a warning message:

```
WARNING: The configuration files have been edited by hand. Use
this button to load the latest configuration files.
```

4 Click the Load Configuration Files button.

   This displays the message:

```
Success! The most recent config files have been loaded.
```

   This message indicates that the Sun ONE (iPlanet) Web server has accepted the changes made to it by the installer.

Sun ONE (iPlanet) Web Server References to the eapps.cfg File

The Siebel installer adds a reference to the Sun ONE (iPlanet) server configuration file `magnus.conf`, located within the Sun ONE (iPlanet) configuration directory during installation.

A typical line the installer would add to `magnus.conf` might resemble the following example:

```
Init fn="swe-init"config-file="/SWEAPP_ROOT/bin/eapps.cfg"
siebel-home="/eappweb"
```

To locate magnus.comf

- Navigate to the following path:

  Sun_ONE_Web_Server_Root/https-*your server instance name*/config

NOTE: It may be directly under the `config` directory or within a subdirectory of `config`.

Daemon Processes You Must Restart

You must stop and restart the following daemon processes after making changes to any of the following types of configuration files:

- Sun ONE (iPlanet), IHS, or HP-Apache2 Web server
- Siebel Server

You must stop and restart the following daemon processes in the order shown, so that the Siebel Web Server Extension plug-in reads the new information from the modified configuration file:

1. Stop the Web server.
2. Stop the Siebel Server.
3. Stop the Siebel Gateway.
4. Start the Siebel Gateway.
5. Start the Siebel Server.
6. Start the Web server.

Configuring IHS and HP-Apache2 for Siebel Applications

The `httpd.conf` file is the main Web server configuration file. It contains the configuration directives that give the server its instructions. When using IHS, this file is located under `$IHS_ROOT/conf`. If you are using HP-Apache2, the default directory is `/opt/hpapache2/conf`.

You should use the following guidelines for setting parameters in the `httpd.conf` file when using IHS or HP-Apache2 with Siebel applications.

- **Required.** Make sure your section `<worker.c>` looks like the following:

```
<IfModule worker.c>
ThreadLimit N
StartServers 1
ServerLimit 1
MaxClients N
MinSpareThreads 1
MaxSpareThreads N
ThreadsPerChild N
MaxRequestsPerChild 0
</IfModule>
```

  where *N* is three times the average number of concurrent users, or

  N = (3**average_number_of_concurrent_users*).

Customer and partner applications that use the standard interactivity client open, at most, two connections per browser. Applications that use the high interactivity client may open between two and ten connections, depending on whether the application uses Server XML and depending on the browser cache state.

NOTE: For some highly active applications, you may need to set *N* to a larger value. You should also verify that the kernel parameter `MAX_THREAD_PROC` is always greater than `ThreadLimit`.

On IHS only, to increase or decrease the maximum number of concurrent requests, replace all occurrences of the value `1024` within the section with your new value. Other values must be identical to the ones given in the example.

- **Required.** The `User` and `Group` values should correspond to an existing user who has appropriate permissions. Most importantly, the user should have appropriate permissions for various Siebel Web Server Extension directories.
- **Recommended.** Set `UseCanonicalName` to `OFF`. You are required to set `UseCanonicalName` to `OFF` if you load-balance Web servers.
- **Recommended.** Set `KeepAliveTimeout` to `15` seconds.
- **Recommended.** Set `MaxKeepAliveRequests` to a minimum value of the maximum number of concurrent requests that IHS and HP-Apache2 is configured to handle.
- **Optional.** You can comment out the line that loads the CGI module if you are not using the CGI functionality of IHS or HP-Apache2. This makes tracking IHS or HP-Apache2 processes simpler because there is always one child process.

  In IHS, the line is:

  ```
  LoadModule cgid_module modules/mod_cgid.so
  ```

  In HP-Apache2, the line is:

  ```
  LoadModule cgi_module modules/mod_cgi.so
  ```

Detailed information about the directives in `httpd.conf` is available on http://www.apache.org.

Configuring HP-Apache2 for Optimal Performance

Siebel eBusiness Applications will run slowly on HP-Apache2 Web servers unless you make the following changes to the `httpd.conf` configuration file.

1. Edit the `/etc/privgroup` file. If it does not exist, create it. Add the following entry to the file:

   `apache_group_name` `RTPRIO`

   where:

   `apache_group_name` = the group name containing the username that owns the Apache server. Save the file and exit.

2 In the shell, execute the following command:

```
setprivgrp –f /etc/privgroup
```

3 Add the following to the file $*APACHE_ROOT*/bin/startapa, at the beginning of the file:

```
rtprio  127 –$$
```

Save the file and exit.

Deploying a Reverse Proxy Server with IHS and HP-Apache2

To implement Siebel eBusiness Applications on a Web server that is placed behind a proxy server, you can deploy only Siebel applications that support the standard interactivity client on a Web server instance that is placed behind a reverse proxy server. You cannot deploy Siebel employee applications, such as Siebel Call Center, or other Siebel applications that support the high interactivity client.

Troubleshooting Siebel Web Server Extension Installation

This section provides suggestions for troubleshooting problems you may encounter when installing the Siebel Web Server Extension.

Problem: After installation, when launching the zero-footprint client, a message appears, stating:

```
Page Cannot be displayed
```

Cause: Virtual directories were not installed or configured properly.

Solution:

1 Refresh the connection between your browser and the Web site.

2 Make sure that the Local Path for the virtual directories is correct. This should be the following.

$*SWEAPP_ROOT*/public/language

3 If you are trying to test a self-created virtual directory, make sure that you added the `sweiis.dll` parameter to your virtual directory, since this parameter allows communication with the Siebel Server. For information, see "Adding a New Virtual Directory on Web Server" on page 322.

4 Make sure that the `AnonUser` specified in the `eapps.cfg` file is also specified in the database with the correct responsibilities. Otherwise, you cannot access the home page.

5 Make sure that the connect string for the Siebel eBusiness Application is correct. Otherwise, a message appears:

   Example:

   ```
   ConnectString = siebel.TCPIP.none.NONE://server name:2320
   /siebel/ProductNameObjMgr/server name
   ```

Problem: Your Siebel eBusiness Application hangs or times out.

Cause: Appropriate parameters not available within the [default] section of the `eapps.cfg` file for the Siebel eBusiness Application.

Solution: Make sure that the defaults section of the `eapps.cfg` file contains the Employee Login value (for example, `sadmin/DatabaseName`).

Problem: Inability to access the Web client. The browser status bar may display errors such as `SWESubmitOnEnter is undefined` and the login page may appear to hang.

Solution: Make sure that the user running the Web server has read and write permission to the `$SWEAPP_ROOT` directory.

Problem: After installation, when launching the zero-footprint client, the login page does not display properly. For example, images may be missing.

Cause: The user does not have proper permissions to the `$SWEAPP_ROOT/public/lang` directory.

Solution: Grant read, write, and execute to permissions to all users. In addition, grant read, write, and execute permissions to the anonuser specified in the `eapps.cfg` file.

13 Installing eAI Connector Software

This chapter describes the steps involved in installing Siebel eAI Connector support files under UNIX.

For instructions on how to configure Siebel eAI Connector software, refer to Siebel documentation on the appropriate connector:

- *Siebel Connector for Oracle Applications*
- *Siebel Connector for Siebel eBusiness Applications*

The installation of Siebel eAI Connector support files consists of the following tasks. Table 32 illustrates the sequence of steps.

Table 32. Siebel eAI Connector Software Installation Tasks

Who Performs It?	Task
System Administrator	**1** Review pre-installation considerations. See "Pre-Installation Considerations for eAI Connectors" on page 338. **2** Install eAI Connector software. See "Installing the Siebel eAI Connector Support Files" on page 338. **3** Configure eAI Connector software. See the appropriate documentation on the *Siebel Bookshelf*.

Pre-Installation Considerations for eAI Connectors

Additional configuration is required if you plan to use Siebel Connector for Oracle Applications against multiple instances of its back-office application. Please contact Siebel Technical Support for configuration instructions.

NOTE: Siebel Connector for Oracle Applications and Siebel Connector for PeopleSoft support all Siebel 7 operating systems.

For list of supported platforms, see *System Requirements and Supported Platforms*.

Installing the Siebel eAI Connector Support Files

Complete the following steps to install the Siebel eAI Connector support files on each UNIX server, using the information you recorded in your copy of Appendix A, "Deployment Planning Worksheets."

If you are installing using a staging point, you will notice that some steps you perform differ from those documented in this procedure; for example, you will not need to swap CDs, as described in Step 11 to Step 14. For more information about staging point, see Chapter 2, "Preparing for the Installation."

To install the Siebel eAI Connector support files

1 Install the *UNIX_OS Server Programs, Siebel Enterprise Server Base* CD-ROM onto the network

where:

UNIX_OS is your UNIX operating system, such as Solaris, HP-UX, or AIX.

NOTE: The volume label for the CD is `sea`*`UNIX_OS`*`sesbase` or `sea`*`UNIX_OS`*`siabase`, as appropriate to the Siebel applications you are installing; it may not be required, depending on how you access the CD-ROM.

As a convenience, you may also want at this time to install the `sea`*`UNIX_OS`*`ses`*`language`* or `sea`*`UNIX_OS`*`sia`*`language`* CD ROM, as applicable, into the drive of the machine on which you want to install the Siebel eAI Connector support files.

2 Navigate to the `/ses` directory from the CD mount point and open a new shell.

3 Unset any Siebel related environment variables such as $*SIEBEL_ROOT*.

4 Enter the following command, appending any additional flags that you may want to use, as described in "Installing in Console Mode" on page 104.

```
./setup<UNIX_OS>
```

The Installer Welcome screen appears.

5 Click Next.

If you have installed other Siebel components on the same machine, the installer displays the message that an existing installation has been found.

6 Depending on whether you are installing your eAI files for the first time or adding a new language to an existing instance, take the appropriate action, then click Next:

- To install the server software in a new instance, select None as the default and click Next. Proceed to Step 7.

- To install a new language in an existing instance, select the displayed instance and click Next. Proceed to Step 9.

  See also "Installing Multiple Siebel Language Packs on the Siebel Server" on page 149 for important additional information on this topic.

The Installer Path screen appears.

7 Enter the fully qualified path to the `$SIEBEL_ROOT` directory and click Next.

The Component Selection screen appears.

8 Select the components that you want to install.

- Install all the components at once for which your organization has a license by clicking Select All.
- Select just Siebel eBusiness Application Integration at this time for installation and configuration. (You will install and configure the other server components individually later.)

NOTE: If you install all licensed components at once, the SES Installer and the Siebel Software Configuration Wizard prompt you for the installation parameters of each component individually and in the sequence required.

---

9 Choose the type of installation to execute from the following options; then click Next to continue:

- **Typical.** This setup option will install all components.
- **Compact.** This setup option will install only those components necessary, but no additional components or help.
- **Custom.** This setup option lets you customize your installation by choosing the specific components you want to install.

The Language Selection screen appears.

10 Select the languages for this server and click Next.

All servers are installed with at least one language, the primary(base) language. Additional languages can be installed at a later date, if desired. When installing languages at a later date, you must also reinstall any patches that have been run on the directory. For more information, see *Global Deployment Guide*.

NOTE: In a Unicode-enabled database environment, you can install any of the available Siebel language packs. In a non-Unicode database environment, you must consider the correlation of the language packs you want to install and the characters supported by your database code page. For example, in a Western European code page database, you can only install Western European language packs such as English, French, Spanish, or German language packs. And in a Japanese code page database, you can only install Japanese or English language packs.

For a list of supported code pages and encoding strategies, see *System Requirements and Supported Platforms*.

The Installation Verification screen appears.

11 To copy the files for the selected product into the installation location, click Next.

The Installer Progress screen appears.

After the files have been copied to the installation location, a warning screen appears with the following message:

```
Setup did not find the Siebel Language Code language pack on
the current media. Please insert the CD containing the Siebel
Language Code and select setupUNIX_OS from the Siebel Language
Code folder.
```

NOTE: You will not receive this prompt if you are installing from a staging point.

---

12 Insert the appropriate language CD-ROM and navigate to the location of the selected language (`ses/`*`language`*`/`)

where:

language is the Siebel code for language you are installing.

NOTE: Clear the filter dialog box, if needed, to be sure you can see the appropriate files.

---

13 Select `setup`*`UNIX_OS`* and click OK.

The Installer Language Pack Progress screen appears.

When installation of all the language files has been completed, the installer prompts you to reinsert the base CD-ROM:

```
Please re-insert the base CD and browse to the setupUNIX_OS
file to enable setup to continue.
```

14 Reinsert the base CD and navigate to `ses/setup`*`UNIX_OS`* and click OK.

15 Click Finish.

For Siebel eAI product configuration tasks, refer to the appropriate Siebel eAI Connector documentation on the *Siebel Bookshelf*.

Installing CORBA Object Manager 14

This chapter describes the steps involved in installing and configuring the Siebel CORBA Object Manager.

The installation and configuration of the CORBA Object Manager consists of several tasks. Table 33 illustrates the sequence of steps.

Table 33. CORBA OM Installation and Configuration Tasks

Who Performs It?	Task
System Administrator	**1** Review the prerequisites to installing Siebel CORBA Object Manager. See "Verifying Installation Prerequisites for Siebel CORBA Object Manager" on page 344. **2** Review database connectivity information and configure connectivity to the Siebel Database. See "Configuring Database Connectivity Software for CORBA Object Manager" on page 345. **3** Verify your connection to the network. See "Verifying Network Connectivity for Siebel CORBA Object Manager" on page 346. **4** Install Object Request Broker software. See "Installing Object Request Broker Software" on page 347. **5** Install Siebel CORBA Object Manager software. See "Installing the CORBA Object Manager" on page 347. **6** Review the software installation directories. See "Post-Installation Tasks for Siebel CORBA Object Manager" on page 351. **7** Configuration and Run the Siebel CORBA Object Manager. See "Final Configuration of the Siebel CORBA Object Manager" on page 353. **8** (Optional) Register multiple CORBA Object Managers, as appropriate. See "Registering Multiple Object Managers for Better Performance" on page 364.

About Siebel CORBA Object Manager

The Siebel CORBA Object Manager is an alternative object manager; it allows you to access the Siebel Business Objects through a supported, industry-standard CORBA object request broker (ORB). The standard Application Object Manager is installed when you install your Siebel Servers.

Because the CORBA Object Manager is not installed as part of the standard Siebel Server installation, if you plan to use the CORBA interfaces, you must install the CORBA Object Manager on each server on which you plan to operate it.

The CORBA Object Manager does not require the creation of a Siebel Enterprise Server, or installation of a Siebel Gateway or Siebel Server. Rather, the CORBA Object Manager operates outside the Siebel Server infrastructure. Task instantiation and management, load-balancing, and other capabilities that are usually provided by the Siebel Enterprise Server infrastructure are instead provided by the CORBA environment.

Connectivity between client applications and CORBA Object Manager is provided by third-party CORBA software. For information on the specific CORBA products and versions supported by Siebel eBusiness Applications, see *System Requirements and Supported Platforms*. The CORBA Object Manager installation provides support for all supported third-party CORBA products.

Verifying Installation Prerequisites for Siebel CORBA Object Manager

- Be sure that all servers onto which the Siebel CORBA Object Manager will be installed meet the hardware and software requirements described in *System Requirements and Supported Platforms*.
- The CORBA Object Manager may be installed on a server that also supports the Siebel Enterprise Server components, although for best performance you must install the CORBA Object Manager onto a dedicated server.

- The CORBA Object Manager installation program uses `/siebel` as the default installation directory. Whether you are installing CORBA Object Manager into a pre-existing installation directory or performing a fresh installation, make sure that you do not install CORBA into the same directory as the Siebel Server. To install the CORBA Object Manager in a separate directory, make sure that the environment variable `$SIEBEL_ROOT` either is not set or is set to the new directory.

  NOTE: It is recommended that you use a directory naming convention that identifies the component and version being installed.

- If you will be installing the VisiBroker third-party CORBA software, you must make sure that an appropriate Java run-time environment has been installed. For more information on VisiBroker Java run-time environment requirements, see the VisiBroker documentation.

Configuring Database Connectivity Software for CORBA Object Manager

You must configure your database connectivity software to allow the Siebel CORBA Object Manager to connect to the Siebel Enterprise database:

- **Oracle.** Verify that the Oracle Net8 or Net9 database connectivity software, as appropriate to your database, is installed on each server, according to the Oracle documentation. See *System Requirements and Supported Platforms* for database connectivity software requirements.

  Prior to installing the Siebel Server and Siebel Enterprise Server, you must use the Oracle Net8, (or Net9, as appropriate to your database), Easy Configuration utility to define a database alias with the proper connection information for your Siebel Database Server, if you have not done so already. Record the connect string in Appendix A, "Deployment Planning Worksheets." You will specify this connect string when installing the Siebel Server.

- **DB2 UDB for Windows and UNIX.** Define a database alias with the proper connection information for your database. This alias will be the connect string used when installing the Siebel Server.

  Use either the DB2 Client Configuration Assistant or the Command Line Processor to define your database alias. For more information, see *DB2 Universal Database* Quick Beginnings manual or *IBM DB2 Universal Database Command Reference*.

Verifying Network Connectivity for Siebel CORBA Object Manager

You must verify network connectivity between the server and the Siebel Database Server.

To verify network connectivity

1. Use the test utility for your network type to verify that the Siebel Servers can access the database servers. For TCP/IP networks, you should use the `ping` utility.
2. Verify connectivity to the Database Server:
   - **Oracle.** Use the `tnsping` utility and Net8 or Net9 database alias from a Command Prompt window to make sure that you can connect to the database, using the network connect string that you defined in the previous step.
   - **DB2 UDB.**Open a new shell and make sure that you can connect to your database.

   a. Type the following command:

`DB2 connect to` *`Database Alias`* `user` *`user_ID`* `using` *`password`*

where:

`database_alias` is a valid database alias on DB2.

`user_ID` is a valid user name on DB2.

`password` is the appropriate password for that user name.

If your connection is valid, you should see a message that looks like the following:

```
The connection test is successful

Database Server      = DB2/AIX|Solaris x.x.x
SQL authorization ID = SADMIN
Database alias        = NAME
```

If your connection is not valid, verify your configuration.

b To close the connection, type `db2 terminate`.

Installing Object Request Broker Software

You must have a working Orbix or VisiBroker environment prior to installing the Siebel CORBA Object Manager. If necessary, you must install either the Orbix or VisiBroker third-party CORBA software. For more information, see the following:

- If you are installing Orbix third-party CORBA software, see "Getting Started" on the HTML page that appears after installing the Orbix software.
- If you are installing VisiBroker third-party CORBA software, see Visibroker's hard copy documentation.

After installation, verify the third-party CORBA software is installed and functioning correctly.

Installing the CORBA Object Manager

Complete the following steps to install the CORBA Object Manager on each UNIX server.

To install the CORBA Object Manager

NOTE: The following procedure is for installing the base product. For patch installation instructions, refer to *Maintenance Release Guide* provided with the patch.

1. Insert the *UNIX_OS CORBA Object Manager* Language *Extension Pack 1* CD-ROM into the CD-ROM drive of the server

   where:

   UNIX_OS is your UNIX operating system, such as Solaris, HP-UX, or AIX.

   Language is the language to be installed.

   NOTE: The volume label for the CD is `sea`*UNIX_OS*`corbalep1` or `sia`*UNIX_OS*`corbalep1`, as applicable to the Siebel applications you are installing; it may not be required, depending on how you access the CD-ROM.

2. Navigate to the `/corbaom` directory on the CD-ROM:

3. Start the Siebel CORBA Object Manager installation process by entering the following command. Append any desired flag described in "Installing in Console Mode" on page 104:

   ```
   ./setupUNIX_OS
   ```

   The Installer Welcome screen appears.

4. Click Next.

   If you have installed other Siebel components on the same machine, the installer displays the message that an existing installation has been found.

5. Depending on whether you are installing your Siebel CORBA Object Manager files for the first time or adding a new language to an existing instance, take the appropriate action, then click Next:

   - To install the server software in a new instance, select None as the default and click Next. Proceed to Step 6.

- To install a new language in an existing instance, select the displayed instance and click Next. Proceed to Step 9.

  See also "Installing Multiple Siebel Language Packs on the Siebel Server" on page 149 for important additional information on this topic.

The Installer Path screen appears.

6 Enter the fully qualified path to the installation directory and click Next.

7 The Installer Setup Type screen appears.

8 Choose the type of CORBA Object Manager installation to execute from the following options; then click Next to continue:

- **Typical.** This setup option installs all Siebel CORBA Object Manager components except those displayed. Proceed to Step 9.
- **Compact.** This setup option installs only those components necessary to run the Siebel CORBA Object Manager, but no additional components, help, or CORBA sample codes. Proceed to Step 9.
- **Custom.** This setup option lets you customize your installation by choosing the specific components you want to install. Proceed to Step 9.

  If you selected Custom, the Custom Installation Setup screen appears.

  Select the components that you want to install; in other words, decide whether or not you want to install the Sample Clients and IDL (Interface Definition Language) and click Next.

  Siebel Systems IDL defines the interfaces it provides through the CORBA Object Manager.

The language selection screen appears.

9 Choose the language or languages you intend to install for CORBA Object Manager on the server; then click Next.

All servers are installed with at least one language, the primary(base) language. Additional languages can be installed at a later date, if desired. When installing languages at a later date, you must also re-install any patches that have been run on the directory. For more information, see *Global Deployment Guide*.

NOTE: In a Unicode-enabled database environment, you can install any of the available Siebel language packs. In a non-Unicode database environment, you must consider the correlation of the language packs you want to install and the characters supported by your database code page. For example, in a Western European code page database, you can only install Western European language packs such as English, French, Spanish, or German language packs. And in a Japanese code page database, you can only install Japanese or English language packs.

For a list of supported code pages and encoding strategies, see *System Requirements and Supported Platforms*.

The Installation Verification screen appears.

10 Verify the settings and click Next. Which screen appears next depends on whether you are installing one or multiple languages.

- If you are installing more than one language, the Primary Language screen appears. Proceed to Step 11.
- If you are installing only one language, the Database Selection screen appears. Proceed to Step 12.

11 Choose the primary(base) language and click Next.

NOTE: This is the primary(base) language for your Enterprise. It is the language in which you want your Siebel Server to run and which you normally want to read messages.

The Database Selection screen appears.

12 Choose the appropriate database and click Next.

The Database Alias or Connection String screen appears.

13 Enter the database alias or connection string, as described below, and click Next.

DB2 UDB. Enter the database alias for your Siebel Database, for example, `db2345`.

Oracle. Enter the valid Oracle connection string for your database.

The Database Table Owner screen appears.

14 Enter the database table owner for the Siebel tables and click Next.

The Installer Verification screen appears.

15 Verify the settings:

- To apply the settings, click Next.
- To make any changes, use the Back button to go back and update any parameters. You can use the Next button to return to this screen and confirm your new values; then click Next.

The Settings Progress screen appears as the Configuration Wizard configures the software.

The Configuration Wizard displays the message that the Siebel CORBA Object Manager has been successfully installed.

16 Click Finish.

Post-Installation Tasks for Siebel CORBA Object Manager

Before starting the CORBA Object Manager, perform the following tasks:

- "Review the Software Installation for CORBA Object Manager" on page 352.

- Copy the latest version of your customized Siebel repository file (the `.srf` file) to the `/objects/`*`language`* subdirectory of each CORBA Object Manager installation.
- "Final Configuration of the Siebel CORBA Object Manager" on page 353.

Review the Software Installation for CORBA Object Manager

Review the directory structure created by CORBA Object Manager installation. The directory structure is located under the directory specified during the installation.

The directory structure should match the one shown below.

```
SIEBEL_ROOT
bin/
language/
lib/
language/
locale/
log/
msgtempl/
objects/
sampleclient/
temp/
upgrade/
ORBsetup.log
ORBsetup.reg
```

bin. Contains executables.

language. Contains locale-specific configuration files.

lib. Contains shared libraries.

language. Contains language-specific shared libraries.

locale. Language-specific message files.

log. Log and trace files.

objects. Contains language-specific directories with language-specific repository (`.srf`).

sampleclient. Contains C++ source code for building a sample client.

temp. Contains temporary files used during execution.

upgrade. Files and scripts related to version upgrades by installer.

ORBsetup.log. ORB setup log.

ORBsetup.reg. ORB registry entries.

Final Configuration of the Siebel CORBA Object Manager

After copying the latest version of your customized Siebel repository file (the `.srf` file) to the `/objects/`*`language`* subdirectory of each CORBA Object Manager installation, you may have to take additional steps to configure the Siebel CORBA OM.

These steps may be required or optional depending on which third-party CORBA software you are using and conventions of other CORBA software used in your organization. The additional steps relate to how the Siebel CORBA Object Manager will be started so that it is available for requests from client programs, and whether or not the Siebel CORBA Object Manager will publish the reference to its SiebelAppFactory object in the CORBA naming service.

NOTE: This section assumes you have a detailed understanding of CORBA, the tools, and the utilities provided by your ORB vendor.

Before performing the final configuration, you must make a decision about the following:

- Whether you want a persistent server or an automatic server. If you use persistent server you need to start and stop the Siebel CORBA Object Manager server process or processes manually; otherwise, you need to configure the third-party CORBA software to automatically start a Siebel CORBA Object Manager server process when a client request is dispatched.

  NOTE: The ORBIX implementation only supports persistent mode.

- Whether the Siebel CORBA Object Manager should publish a reference to its SiebelAppFactory object in the naming service, or if clients will use proprietary methods of the third-party CORBA software to bind to the SiebelAppFactory.

There are several areas in which these decisions overlap:

- What your existing CORBA policies or conventions are.
- Whether you want to load-balance between several Siebel CORBA Object Manager servers.
- Whether you want to use the CORBA naming service.
- Which third-party CORBA software you have chosen.

If you are going to use the CORBA Naming Service, then you must use the persistent method. This is because the Siebel CORBA Object Manager registers its SiebelAppFactory object when it starts and removes it when it shuts down. Since the client (that uses the naming service) would not be able to invoke requests on that server unless it was running, you should not configure for automatic starting of servers.

Configuring Multiple CORBA Object Managers for Better Performance

For optimal performance register multiple Siebel CORBA Object Managers for load-balancing and redundancy. CORBA provides flexibility in terms of deploying multiple redundant servants for specific interfaces. The best deployment strategy will depend on your specific needs and the capabilities of your chosen third-party CORBA software. Please refer to "Registering Multiple Object Managers for Better Performance" on page 364 if you are planning to have multiple Object Managers.

NOTE: You need to use the Naming Service if you are planning on registering multiple CORBA OMs with the same ORB.

Using CORBA Naming Service with the Siebel CORBA Object Manager

You should use the Naming Service if you are planning on registering multiple CORBA OMs with the same ORB. Use of the Naming Service is required for ORBIX, but optional for Visibroker. The benefit of using the Naming Service with multiple CORBA OM instances is that the ORB will load balance requests across all CORBA OM instances.

The `-x` and `-b` (see below for the complete command-line syntax) arguments are interpreted using the Interoperable Naming Service (INS) convention for stringified names. Specifically, this means that a `-`(dash) character is a delimiter between name components, and the `.` (dot) character is a delimiter between the *`kind`* and *`id`* parts of a name component. The `\` (backslash) is used as an escape character for literal `"/"`, `"."`, and `"\"` characters. A leading `/` is optional when specifying a stringified name. In other words, `-x -Siebel` and `- Siebel` are equivalent.

When both `-x` and `-b` are specified, the name bound in the naming service is the concatenation of `Context` and `BindName`. Siebel Systems provides the `Context` parameter simply as a matter of convenience. The `-b` argument can be a fully qualified name in stringified form as described above. For example, specifying `-x Siebel/ObjMgr -b Alpha` is equivalent to `-b Siebel/ObjMgr/Alpha`.

Setting Up a Shell Environment for the Siebel CORBA Object Manager

To set up your shell environment for the Siebel CORBA Object Manager, follow these guidelines:

- You should set up your shell environment before performing the final configuration of the Siebel CORBA Object Manager and any time you will be working with the third-party CORBA software or the Siebel CORBA Object Manager.
- Locate the environment scripts for the Siebel CORBA Object Manager and for your third-party CORBA software.
  - The Siebel CORBA Object Manager environment scripts are located in the Siebel CORBA Object Manager installation root directory and are named `siebenv.sh` and `siebenv.csh`.
  - For Orbix third-party CORBA software, the environment scripts are typically located in the Orbix installation root directory and, depending on your shell, are named `setenvs.sh` and `setenvs.csh`. These parameters are now "domain" (ORBIX term) specific. The necessary environment files are typically created in the \etc\bin directory. The names are dependent upon the name of the domain configured for the CORBA OM.
  - For VisiBroker third-party CORBA software, the environment scripts are typically located in the VisiBroker installation root directory and are named `vbroker.sh` and `vbroker.csh`.

Final Configuration of CORBA Using Orbix

The following topics describe tasks to finalize configuration and running CORBA using Orbix.

Command-Line Syntax

The Siebel CORBA Object Manager for Orbix is implemented in the executable `ssomorbx`, which is a normal console mode application and is located in the $*SIEBEL_ROOT/corbaom/*`bin` directory. The command-line syntax used when invoking `ssomorbx` is as follows:

```
ssomorbx -n servername -c configfile -d datasource -l language -
maxconn maxconnections [-b bindname [-x context] [-r]] [otherarg
…]
```

where:

`servername` is the servant process name.

`configfile` is the name of the configuration file. This may be a filename (in which case the file must reside in the *`language`* subdirectory of the `BIN` directory) or a full pathname.

`datasource` is the name of the data source defined in the configuration file to which the Siebel CORBA Object Manager should connect.

`language` is the language code in which the Siebel CORBA Object Manager operates; for example, `enu` for U.S. English.

`maxconnections` is the maximum number of concurrent client connections that this server can support.

`bindname` is an optional argument that defines the stringified name to bind to the SiebelAppFactory object in the CORBA naming service.

`context` is an optional argument that defines the stringified name that defines the CORBA naming service naming-context in which the *`bindname`* appears. This argument and the `-x` option are only meaningful when the `-b` option is also present.

`-r` is an option that specifies that the *`bindname`* should be registered as a member of an OrbixNames load-balancing group using round-robin selection.

This option is only meaningful when the `-b` option is also present.

`otherarg` is an option argurment that specifies additional arguments that may be passed to the Orbix ORB during initialization.

Configuring CORBA Object Manager as a Persistent Server for Orbix

In persistent mode, the CORBA Object Manager is always running and available for client requests.

NOTE: The Orbix implementation only supports persistent mode.

For detailed information about all the command-line options that are used in the following procedure, see "Command-Line Syntax" on page 357.

To configure and start the CORBA Object Manager with Orbix

1. Make sure that the Orbix node daemon service, `orbixd.exe`, and Naming Services are running on the server. Start the node daemon or the Naming Service or both for the appropriate domain, if necessary.

   For more information on Orbix administration, see the Orbix installation and administration documentation.

2. Start the CORBA Object Manager by executing the following command at a command prompt:

```
ssomorbx -n serverName -c configFile -d dataSource -l language
-b bindName -x context -maxconn maxConnections [-r] [otherarg…]
```

where:

serverName is the servant process name.

configFile is the configuration file for CORBA Object Manager. This may be a filename (in which case the file must reside in the *language* subdirectory of the `\BIN` directory) or a full pathname.

datasource is the name of the data source defined in the configuration file to which the Siebel CORBA Object Manager should connect.

language is the language code in which the Siebel CORBA Object Manager operates; for example, `enu` for U.S. English.

bindName is the name to which the SiebelFactory object is bound. All clients will first get a reference to the SiebelFactory object.

context is the context registered with the Naming Service.

maxConnections is the maximum number of connections to be handled by the CORBA Object Manager process.

`[-r]` an optional argument to specify that the *bindname* should be registered as a member of an OrbixNames load-balancing group using round-robin selection. This option is only meaningful when the `-b` option is also present.

[otherarg] is an option that specifies additional arguments that may be passed directly to the Orbix ORB during initialization.

For example,

```
ssomorbx -n Siebel -c corbaom.cfg -d ServerDataSrc -l ENU -b
CORBAOM -x SCOM -maxconn 25
```

3 Repeat Step 2 for each additional CORBA Object Manager you configure on this server.

Final Configuration of CORBA Using VisiBroker

The following topics describe tasks to finalize configuration and running of CORBA using VisiBroker.

Command-Line Syntax

The Siebel CORBA Object Manager for VisiBroker is implemented in the executable `ssomvisi`, which is a normal console mode application and is located in the *`$SIEBEL_ROOT/corbaom/`*`bin` directory. The command-line syntax used to invoke `ssomvisi` is as follows:

```
ssomvisi -n objname -c configfile -d datasource -l language [-b
bindname [-x context] [otherarg …]
```

where:

`objname` is the object name assigned to the SiebelAppFactory object.

`configfile` is the name of the configuration file. This may be a filename (in which case the file must reside in the *`language`* subdirectory of the `\BIN` directory) or a full pathname.

`datasource` is the name of the data source defined in the configuration file to which the Siebel CORBA Object Manager should connect.

`language` is the language code in which the Siebel CORBA Object Manager operates; for example, `ENU` for U.S. English.

`bindname` is an optional argument that defines the stringified name to bind to the SiebelAppFactory object in the CORBA naming service.

`context` is an optional argument that defines the stringified name that defines the CORBA naming service naming-context in which the *`bindname`* appears. This argument and the `/x` option are only meaningful when the `-b` option is also present.

`otherarg` is an optional argument that represents arguments passed directly to the VisiBroker ORB during initialization. Specifically, you may need to specify the `-ORBInit` parameter when using the CORBA naming service. For more information, see the VisiBroker documentation.

Configuring Manual Activation for VisiBroker

In persistent mode, the CORBA Object Manager is always running and available for client requests. You should configure the CORBA Object Manager as either a manual server or an automatic server, but not both.

For detailed information about all the command-line options that are used in the following procedure, see "Command-Line Syntax" on page 360.

To configure and start the CORBA Object Manager as a persistent server under VisiBroker

1. Make sure that at least one VisiBroker Smart Agent, `osagent.exe`, is running on the local subnet or is, at least, visible to the current server. You can do this using the VisiBroker `osfind` utility.

   For more information on the `osagent` and `osfind` utilities, see the VisiBroker documentation.

2. Start the CORBA Object Manager. At a command prompt execute the command:

   ```
   ssomvisi -n objname -c configfile -d datasource -l language [-b
   bindname [-x context] [otherarg …]
   ```

   where:

   `objname` is the object name assigned to the SiebelAppFactory object.

   `configfile` is the full path and name of the Object Manager configuration file; the default is siebel.cfg, located in the same directory as ssomvisi.

   `datasource` is the name of the data source defined in the .cfg file; the default is Server.

   `language` is the three-letter code for the language in which to operate; for example, enu for U.S. English.

   For example,

   ```
   ssomvisi -n SiebelObjectFactory -c corbaom.cfg -d ServerDataSrc -
   l ENU
   ```

3 Repeat Step 2 for each additional CORBA Object Manager you run on this server.

NOTE: You must change the object name specified.

4 Repeat Step 1 through Step 3 for each additional server you configure.

Configuring Automatic Activation for VisiBroker

You should configure the CORBA Object Manager as either a manual server or an automatic server, but not both.

To configure the CORBA Object Manager for automatic activation under VisiBroker

1 Make sure that at least one VisiBroker Smart Agent, `osagent.exe`, is running on the local subnet or is, at least, visible to the current server. You can do this using the VisiBroker `osfind` utility.

   For more information on the `osagent` and `osfind` utilities, see the VisiBroker documentation.

2 Start the VisiBroker Object Activation Daemon (OAD). At a command prompt, execute:

```
oad
```

   For more information on the VisiBroker Object Activation Daemon, see the VisiBroker documentation.

3 Register the CORBA Object Manager in the implementation repository. At a command prompt execute the command:

```
oadutil reg -I SiebelAppFactory -o objname -cpp CORBA Object
Manager exe -p shared -a -n -a objname -a -c -a configfile -a -d
-a datasource -a -l -a language [[-a otherarg] …]
```

where:

objname is the object name assigned to the SiebelAppFactory object.

configfile is the full path and name of the Object Manager configuration file; the default is siebel.cfg, located in the same directory as ssomvisi.

datasource is the name of the data source defined in the .cfg file; the default is Server.

language is the three-letter code for the language in which to operate; for example, enu for U.S. English.

For example,

```
oadutil reg -I SiebelAppFactory -o SiebelObjectFactory -cpp /
siebel/corbaom/bin/ssomvisi -p shared -a -n -a SiebelObjectFactory -
a -c -a corbaom.cfg -a -d -a ServerDataSrc -a -l -a ENU
```

NOTE: The *objname* passed as the argument to the `oadutil -o` option and the -a (*objname)* in the CORBA Object Manager arguments must match.

4 Repeat Step 2 and Step 3 for each additional CORBA Object Manager you configure on this server.

NOTE: You must provide a unique *objname* each time.

5 Repeat Step 1 through Step 4 for each additional server you configure.

Registering Multiple Object Managers for Better Performance

To improve system performance, it is recommended that you register multiple CORBA Object Managers on the same host. When registering multiple CORBA Object Managers, you must use a unique name for each instance.

NOTE: You should use the Naming Service if you are planning on registering multiple CORBA OMs with the same ORB.

Persistent Mode

In persistent mode, the CORBA Object Manager is always running and available for the ORB. You must set up either the VisiBroker ORB or the Orbix ORB for persistent mode, but not both. Choose the correct set of procedures for your deployment from the following.

To register multiple object managers in persistent mode using VisiBroker ORB

1. Complete Step 1 through Step 2 on page 361.
2. Execute the `ssomvisi` program using the following arguments to start the CORBA Object Manager:

   ```
   ssomvisi -n SiebelObjectFactory -c config_file -d datasource -
   l language
   ```

   Optionally, you can also make the configuration files unique and point them to distinct Siebel Repository files (`.srf`); for example:

```
ssomvisi -n SiebelObjectFactory -c config_file _2 -d datasource
-l language
```

where:

config_file is the full path and name of the Object Manager configuration file; the default is `siebel.cfg`, located in the same directory as `ssomvisi`.

datasource is the name of the data source defined in the `.cfg` file; the default is `Server`.

language is the three-letter code for the language in which to operate, such as `enu` for U.S. English.

To register multiple object managers in persistent mode using Orbix ORB

1. Complete Step 1 and Step 2 on page 358; however, in Step 2, give the variable *SiebelCorbaServer* a unique name for each instance, such as *SiebelCorbaServer2* or *SiebelCorbaServer3*.
2. Complete Step 3 on page 359, but give the variable *SiebelCorbaServer* the unique name you gave this instance in the previous step; for example, *SiebelCorbaServer2.*

Shared Server Mode

To improve system performance, Siebel Systems recommends registering multiple CORBA Object Managers on the same host. When registering multiple CORBA Object Managers, you must use a unique name for each instance.

To register multiple object managers in shared server mode using VisiBroker ORB

1. Follow Step 1 through Step 2 on page 361.
2. Follow Step 4 on page 362, but give the first argument a unique name for every instance you register; for example:

```
oadutil reg -i SiebelAppFactory -o SiebelObjectFactory -cpp
$SIEBEL_ROOT/bin/ssomvisi -p shared -a /n -a
SiebelObjectFactory -a /c -a $SIEBEL_ROOT/bin/config_file -a
/d -a datasource -a /l -a language
```

and

```
oadutil reg -i SiebelAppFactory -o SiebelObjectFactory -cpp
$SIEBEL_ROOT/bin/ssomvisi -p shared -a /n -a
SiebelObjectFactory1 -a /c -a $SIEBEL_ROOT/bin/config_file -a
/d -a datasource -a /l -a language
```

Optionally, you can also make the configuration files unique and point them to distinct Siebel Repository files (`.srf`); for example:

```
-a /c -a $SIEBEL_ROOT/bin/config_file _2 -a /d -a datasource -
a /l -a language
```

Troubleshooting CORBA Object Manager Installation

Problem: After double-clicking one of the program icons in the Siebel CORBA Object Manager 7.0 folder in the Programs menu, the following error message appears:

```
The dynamic link library orb_r.dll could not be found in the
specified path \sea700\corbaom\BIN...
```

Solution a: ORB or VisiBroker software was not installed prior to installing Siebel CORBA Object Manager.

To resolve the problem

1. Uninstall CORBA OM. See Chapter 16, "Uninstalling Siebel eBusiness Applications."
2. Install the ORB or VisiBroker software.
3. Reinstall CORBA OM.

Solution b: Verify that your OS system environment variables include the following path and add it if it is absent:

inprise HOME\vbroker

where:

inprise HOME = the location of your Inprise instance.

Problem: You receive an error message:

```
Unable to initialize threads: cannot find class java/lang/thread.
Could not create JVM.
```

Solution: Java Runtime was either not installed or a version was installed that is incompatible with the version of VisiBroker that you installed. For more information, see your VisiBroker product documentation.

Installing the ChartWorks Server 15

This chapter describes installation and post-installation tasks for the ChartWorks Server for use with Siebel eBusiness Applications. The Siebel ChartWorks Server provides the functionality for the basic appearance of charts used in a variety of Siebel eBusiness Applications.

The installation and configuration of the Siebel ChartWorks Server consists of several tasks. Table 34 illustrates the sequence of steps.

Table 34. Siebel ChartWorks Server Installation and Configuration Tasks

Who Performs It?	Task
Siebel System Administrator	**1** Review "Pre-Installation Requirements" on page 369. **2** Create an installation directory. Copy the TAR file from the *AIX|Solaris|HP-UX Server Ancillary Programs (CD 2 of 2)* and un-TAR the archive into your installation directory. **3** Install ChartWorks Server. See "Installation Tasks for ChartWorks Server" on page 370. **4** Configure ChartWorks Server. See "Post-Installation Task for ChartWorks Server" on page 371.

Pre-Installation Requirements

For pre-installation requirements, refer to the *ChartWorks Server Installation Guide* by Visual Mining, Inc., available in PDF format on the same CD-ROM from which you install ChartWorks Server.

Installation Tasks for ChartWorks Server

The information in this section supplements the installation instructions provided by Visual Mining, Inc., which are provided in the Third-Party section of *Siebel Bookshelf* CD-ROM. It is not intended to replace them.

You may install the ChartWorks Server on any server in your local area network as long as that server is able to ping a Siebel Server. Typically, it is installed on the Siebel Server. Install one ChartWorks Server per Enterprise, and, preferably, one ChartWorks Server per Siebel Server.

To install ChartWorks Server

1. Insert the *AIX|Solaris|HP-UX Server Ancillary Programs (CD 2 of 2)* into the CD-ROM drive of the server on which you will install ChartWorks Server.

   NOTE: The volume label for the CD is `sea`*`UNIX_OS`*`anc1` or `sia`*`UNIX_OS`*`anc1`, as appropriate to the Siebel applications you are installing; the volume label may not be required, depending on how you access the CD-ROM.

   If this is required by your UNIX configuration, mount the CD-ROM.

2. Login to the server with root permissions, and open a terminal window.

3. Navigate to

   `/ThirdPty/chartworks_server/`*`language`*`/unix/`

   where:

   `language` is the three-letter code for the language of your Siebel eBusiness Applications product; for example, `enu` for U.S. English.

4. Create a directory for installing ChartWorks Server, and copy into that directory the TARed file appropriate to the UNIX operating system; that is, either:

   ```
   chartworksserver3.7.siebel.aix.tar
   ```

   or

   ```
   chartworksserver3.7.siebel.sol.tar
   ```

5 Un-TAR the unzipped file by entering:

```
tar -xvf tar file name
```

NOTE: When untarring AIX, GNU TAR is preferable to AIX TAR because the latter truncates long class names.

Enter `./server.sh`.

6 Copy the file `DynamicChartResource.class`, which is located with the Visual Mining ChartWorks Server installer, to the following directory:

VISUALMINING_INSTALL_ROOT`/ChartWorksServer3.7/root/classes/netcharts/util`

7 For the rest of the installation, follow the instructions in *ChartWorks Server Installation Guide* by Visual Mining, Inc., available on the *Siebel eBusiness Third-Party Bookshelf*.

NOTE: The Solaris installation instructions are valid for the AIX and HP-UX platforms.

Post-Installation Task for ChartWorks Server

Following installation of ChartWorks Server software, you must complete the following post-installation task regardless of your UNIX platform.

If you have not done so already, you must install and configure the Siebel Server. The Siebel Server configuration prompts you to set certain parameters related to communications with the ChartWorks Server. For instructions on installing Siebel Server, see Chapter 6, “Installing the Siebel Server.”

Configuring the ChartWorks Server

The following procedure lists the steps you need to perform to configure ChartWorks Server.

To configure ChartWorks Server

1. Navigate to your installation directory for ChartWorks Server; for example:

   `$CHARTWORKS_SERVER_HOME/root/Charts Fixes`

2. Create a new subdirectory called `Siebel.chart`.

3. Within the new `Siebel.chart` subdirectory, create a new file (for example, using `vi`) and type the following three characters in uppercase but without a carriage return:

   `CDL`

4. Save the file, giving it the name `Siebel.cdx`.

5. Make sure the DefaultChartFont parameter in your configuration file and the Application Default Chart Font parameter in your component definition of your Application Object Manager are set to a font that is available on your machine; for example, Verdana-10-Normal. A default font is used by ChartWorks if no font is defined for the chart or if the font defined for the chart is not available on the UNIX machine.

6. If you are using the Sun ONE (iPlanet) Web server, verify that JavaScript is enabled on the Web server. ChartWorks will not run if JavaScript is disabled, and you will get the following error message:

   ```
   An error occurred while sending a request to the chart server
   ```

7. If you are running Siebel Server on HP-UX, complete the following additional step:

   Copy file `NFUtil.class`, which is located in the same directory as the Visual Mining ChartWorks Server installer, to the following directory:

   `VISUALMINING_INSTALL_ROOT/server/root/classes/netcharts/util/`

Specifying the ChartWorks Server After Installation

The installation script prompts for the ChartWorks server location and provides the default value of the localhost. You can change the ChartWorks Server specified for an Enterprise using the Server Administration user interface, after you have installed client applications.

To specify the ChartWorks Server for a Web client

1. In the Server Administration GUI, navigate to the Enterprise Configuration screen.
2. Click the Enterprise Profile Configuration view tab.
3. Select the named subsystem, Server Data Source (ServerDataSrc).
4. Query in the applet for the parameter DSChartServer.
5. Enter the location of your ChartWorks Server, for example `localhost:8001`.
6. Query in the applet for the parameter `DSChartImageFormat`.
7. Set the value of this parameter to `png`.

To specify the ChartWorks Server for a dedicated Web client

1. Open the `.cfg` file specific to the application for which you want to specify the ChartWorks Server.
2. Change the value of ChartServer parameter under DataSource sections such as `[ServerDataSrc]`.
3. Change the value of `ChartImageFormat` parameter to `png`.

Uninstalling Siebel eBusiness Applications 16

This chapter describes how to uninstall Siebel products under UNIX.

CAUTION: Uninstallation in console mode is not supported.

Uninstalling the Siebel Servers

The uninstallation process is based on the Siebel products installed in a specific directory. The Uninstaller executable will uninstall only those products installed into the Uninstaller's parent directory. For example, if you navigate to the `$SIEBEL_ROOT/_uninst` directory, the Uninstaller only uninstalls products in the `$SIEBEL_ROOT` directory.

CAUTION: Do not delete Siebel product directories to uninstall products. To successfully uninstall, you must use the uninstaller created during the installation process.

To successfully uninstall, the user performing the operation must be either the same user or in the same group as the user who performed the installation.

CAUTION: When removing servers in an Enterprise, always remove the Siebel Gateway last, after all Siebel Servers in the Enterprise served by the Gateway are removed. Siebel Servers should be removed second to last.

To uninstall a Siebel Server

1. Stop the Siebel Server process.
2. Navigate to `$SIEBEL_ROOT/_uninst`.

   NOTE: If you are attempting to uninstall an incomplete or unsuccessful installation and you do not see the `_uninst` file in the `$SIEBEL_ROOT` directory, contact Technical Support for assistance.

3. Enter:

   ```
   ./uninstaller
   ```

   The Uninstaller screen appears, listing the products that have been installed in this directory.

4. From the Uninstaller screen, choose the products to uninstall, in this case, the Siebel Server, and any other Siebel applications displayed, and click Next.

   NOTE: If you have Siebel Gateway, Siebel Server, and Siebel DB Server all installed into `$SiebelRoot` and want to uninstall all of them, then you can select all of them on this screen.

   The Uninstaller Verification screen appears.

5. Verify the products to be uninstalled and click Next.

   The Uninstaller Progress screen appears, showing the progress of file removal.

6. Click Finish when the Uninstaller displays the Uninstaller Success screen.

You can use `srvredit`, a command line utility, to remove a Siebel Server from the Siebel Enterprise Server as follows:

```
srvredit -g SiebelGateway -e SiebelEnterprise -s SiebelServer -x
\$Server
```

You can also use `srvredit` to remove a Siebel Enterprise as follows:

```
srvredit -g SiebelGateway -e SiebelEnterprise -x \$Enterprise
```

NOTE: You cannot use srvredit to remove files.

Uninstalling the Siebel Gateway

The uninstallation process is based on the Siebel products installed in a specific directory. The Uninstaller executable will uninstall only those products installed into the Uninstaller's parent directory. For example, if you navigate to the $*SIEBEL_ROOT*/_uninst directory, the Uninstaller will only uninstall products in the $*SIEBEL_ROOT* directory.

CAUTION: When removing servers in an Enterprise, always remove the Siebel Gateway last, after all Siebel Servers in the Enterprise served by the Gateway are removed. Siebel Servers should be removed second to last.

To successfully uninstall, the user performing the operation must be either the same user or in the same group as the user who performed the installation.

CAUTION: Do not delete Siebel product directories to uninstall products. To successfully uninstall, you must use the uninstaller created during the installation process.

To uninstall the Siebel Gateway

1. Stop the Siebel Gateway process.
2. Navigate to $*SIEBEL_ROOT*/_uninst.

   CAUTION: If you are attempting to uninstall an incomplete or unsuccessful installation and you do not see the _uninst file in the $*SIEBEL_ROOT* directory, contact Technical Support for assistance.

3 Enter:

```
./uninstaller
```

The Uninstaller screen appears, listing the products that have been installed into this directory.

4 From the Uninstaller screen, choose the Siebel Gateway and click Next.

NOTE: If you have Siebel Gateway, Siebel Server, and Siebel DB Server all installed into `$SiebelRoot` and want to uninstall all of them, then you can select all of them on this screen.

The Uninstaller Verification screen appears.

5 Verify the products to be uninstalled and click Next.

The Uninstaller Progress screen appears, showing the progress of file removal.

6 Click Finish when the Uninstaller displays the Uninstaller Success screen.

Uninstalling the Other Servers

The process for uninstalling the Siebel Database Server, Siebel CORBA Object Manager, Siebel Web Server Extensions (SWSE), and eAI Connector files is virtually identical to the uninstallation of the Siebel Servers. For additional, special uninstallation information regarding the SWSE, refer to the following information.

Restoring a Web Server After Uninstalling the SWSE

Follow the instructions for uninstalling the Siebel Server, except stop the Web server service.

To restore a Web server after running the Siebel Uninstaller, you must copy all the files referenced below to their original location under the Web server directory.

When the Web servers are installed, they create backup files of the original configuration files in the format:

config_file_name_backup_timestamp.bak

For example,

`obj_conf_`*`020714204932`*`.bak`

Solaris

Restore the following files:

- `start`
- `config/mime.types`
- `config/obj.conf`
- `config/magnus.conf`

AIX and HP-UX

Restore the following files:

- `conf/httpd.conf`
- `conf/mime.types`

HP-UX Only

If the environmental variable `LANG` is set to a directory name that is a symbolic link, the Java uninstaller for Siebel Server will fail. You must reset any existing `LANG` variable to the actual directory that the symbolic link represents.

NOTE: The `LANG` variable cannot be set to `univ.utf8`. This causes the uninstaller to fail.

Uninstalling Siebel Language Packs

You cannot uninstall Language Packs selectively from your servers. If you have to uninstall a particular Language Pack, you must uninstall the server on which it is installed and reinstall it with the correct Language Packs.

You can, however, disable the Siebel Object Manager for a specific language on any Siebel Server. For information, see "Disabling Language-Specific Siebel Object Managers" on page 171.

Migrating to a New Version of Siebel Application

When migrating to a new version of Siebel eBusiness Applications, refer to the instructions in *Upgrade Guide for UNIX*. If you are migrating to a new database platform, or to a new code page, contact Siebel Technical Support.

Deployment Planning Worksheets A

The Deployment Planning Worksheets should be photocopied and a copy given to each member of the deployment team. You need to make copies of these masters each time you install a new Siebel Enterprise Server.

Team Lead Summary Worksheet

Section 1: Deployment Team Members

Deployment Team Lead	
System Administrator	
Database Administrator	

Section 2: Deployment Overview

RDBMS Type:

Server Name	Type	Owner	Number of Users	Server OS
Database Server				
Siebel Servers				

Enterprise Server Names and Installation Directories Worksheet

Make a copy for EACH Enterprise you install.

Section 3: Server Names

Server Name	Network Host Name	Installation Directory
Enterprise Server/Siebel Root		
Siebel Database Server		
File System		

Siebel Gateway		
CORBA Object Manager (if applicable)		
Web Server		

Siebel Accounts, VIPs, and Static IPs Worksheet

Make a copy for EACH Enterprise you install.

Section 4: Siebel Account Information

	Login/User ID	Password
Resonate Manager Account or Siebel Service Owner		
Resonate Monitoring Account		
Anonymous Employee User ID		
Contact User ID		

Section 5: VIP and Static IP Addresses

Server Name	Static IP/VIP	Subnet Mask
Gateway		
Enterprise Server		
Siebel Server		

Cluster Deployment Worksheet

Make a copy for EACH partition of your shared disk (H:\, I:\, J:\, and so on). (Choice of resource groups clustered is optional.)

Section 6: Cluster Resource Groups

Resource Group	Network Name	IP Address
Siebel Gateway		
Siebel File System		
Siebel Database Server		

Section 7: Cluster Configuration

Server Type	Network Hostname	Cluster IP Address	Resource Group IP Address	Subnet
Gateway Node 1				
Gateway Node 2				
Siebel File System Node 1				
Siebel File System Node 2				

Cluster Group	Heartbeat IP Address	Heartbeat Subnet

Ports and RDBMS Details Worksheet

Section 8: Ports and ODBC Data Source Name

Make a copy for EACH Enterprise you install.

Sync Manager	
Request Manager	
Object Manager	
ODBC Data Source Name	

Section 9: Database Information

DB2 DB Alias/Connect String/Server DB Name	
DB Owner Name (if applicable)	
Tableowner Account Username	
Tableowner Account Password	
Siebel DB File Groups (if applicable)	
4-KB Data Tablespace (if applicable)	
16-KB Data Tablespace (if applicable)	
32-KB Data Tablespace (if applicable)	
Siebel Data Tablespace (if applicable)	
Index Tablespace(if applicable)	
DB2 Instance Name(if applicable)	

Enabling Server Components B

This appendix provides a comprehensive list of all server components or business services that require enablement by users in Siebel eBusiness Applications, release 7.x.

You can enable individual server components on one Siebel Server and other components on a separate Siebel Server or servers; for example, if you want to operate some components as part of a cluster, but not others.

Enabling Server Component Groups

The component groups described in Table 35 reside on the Siebel Server and must be enabled for their particular products to function. Enabling can be undertaken at the time you initially configure the Siebel Server, or at any time thereafter, using Server Manager.

NOTE: The System Management Component Group is enabled by default and cannot be disabled.

Table 35. Server Components That Must be Enabled

Component Group	Component Group Members
Assignment Management	Batch Assignment
	Assignment Manager

Table 35. Server Components That Must be Enabled

Component Group	Component Group Members
Communications Management	Communications Session Manager
	Communications Configuration Manager
	Communications Inbound Manager
	Communications Outbound Manager
	Email Manager
	Page Manager
	Smart Answer Manager
Content Center	Content Project Publish
	Content Project Start
Credit Assign	Incentive Compensation Credit Assignment
	Incentive Compensation Credit Assignment Database
	Incentive Compensation Rule Manager Service
	Incentive Compensation Credit Rules to AM Rules Update Manager
Data Quality	Data Quality Manager
Dun and Bradstreet	D&B Update Mgr (D&B)
	D&B Update Mgr (Siebel)
	D&B Update Mgr (Multi-task)
Siebel Employe Relationship Management (ERM)	Employee Relationship Management Object Manager
	eTraining Object Manager
	ERM Compensation planning Service

Table 35. Server Components That Must be Enabled

Component Group	Component Group Members
Enterprise Application Integration (EAI)	MQSeries Server Receiver
	MQSeries AMI Receiver
	Business Integration Manager
	Business Integration Batch Manager
	Enterprise Integration Mgr
	EAI Object Manager
	MSMQ Receiver
	WCS MQSeries Receiver
Field Service	Appointment Booking Engine
	Invoice Engine
	Field Service Cycle Counting Engine
	Field Service Mobile Inventory Transaction Engine
	Service Order Part Locator Engine
	Preventive Maintenance Engine
	Field Service Replenishment Engine
	Optimization Engine
	Field Service Object Manager
	Service Order Fulfillment Engine
Forecast Service Management	Forecast Service Manager
Handheld Synchronization	Siebel Service Handheld 7.5
	Handheld Sales CE

Table 35. Server Components That Must be Enabled

Component Group	Component Group Members
Incentive Compensation	Incentive Compensation Mgr
	ICM Order Import
	ICM CalcWkbk Import
	ICM Calc Engine
	ICM Quota Import
	ICM Container Calculation
	ICM Container Recalculation
Marketing Server	List Import Service Manager
	Marketing Server
	Data Dictionary Manager
Marketing Object Manager	Marketing Object Manager
	eMarketing Object Manager
	eEvents Object Manager
Oracle Connector	Oracle Receiver
SAP Connector	SAP Send Transaction
	SAP Process Transaction
	SAP BAPI tRFC Receiver
	SAP IDOC Receiver for MQ Series
	SAP IDOC AMI Receiver for MQ Series
Siebel Core Reference Application Components (CRA)	Siebel Core Reference Application Object Manager
Sales Hierarchy Service (SalesHierSvc)	Sales Hierarchy Service Manager
Siebel Anywhere	Upgrade Kit Builder

Table 35. Server Components That Must be Enabled

Component Group	Component Group Members
Siebel eChannel	Partner Manager Object Manager
	eChannel Object Manager
Siebel eDocuments [1]	Document Server
Siebel Call Center	Call Center Object Manager
	eService Object Manager
Siebel Dynamic Commerce	Dynamic Commerce
	Dynamic Auto Close
	Dynamic Commerce Alerts
Siebel ISS	eSales Object Manager
	eCustomer Object Manager
	Siebel Product Configuration Object Manager
Siebel Remote	Database Extract
	Parallel Database Extract
	Generate New Database
	Replication Agent
	Synchronization Manager
	Transaction Merger
	Transaction Processor
	Transaction Router
Siebel Sales	Sales Object Manager
	Siebel Mobile Connector Object Manager
Sales Hierarchy Service Component	Sales Hierarchy Service Manager

Table 35. Server Components That Must be Enabled

Component Group	Component Group Members
Siebel to Siebel Connector	HA Upgrade MQSeries Server Receiver
	Siebel to Siebel MQSeries Receiver
	Siebel to Siebel MSMQ Receiver
Siebel Wireless	Siebel eChannel Wireless
	Siebel Self Service Wireless
	Siebel Sales Wireless
	Siebel Service Wireless
System Management (Enabled by default and, therefore, not visible on the Enable Components screen of the Siebel Software Configuration Wizard.)	Server Manager
	Siebel Server
	Siebel Server Scheduler
	Server Request Broker
	Server Request Processor
	File System Manager
	Client Administration
Workflow Management	Workflow Action Agent
	Workflow Monitor Agent
	Workflow Process Manager
	Workflow Process Batch Manager
	Generate Triggers

1. The Siebel eDocuments component must be installed on a dedicated Document Server host machine. For more information, see *Applications Administration Guide*.

Sample Database Creation Scripts C

This appendix provides editable sample scripts to automate creating the Siebel Database for database administrators, if desired.

These scripts are intended as samples only and must be modified for use at all customer sites. The scripts apply only to those versions of DB2 UDB or Oracle that Siebel Systems certifies its Siebel 7 product to run with.

CAUTION: Siebel Systems does not warranty system performance, does not guarantee that the scripts are error free, nor does it provide maintenance support for a database instance created with these scripts, should they contain any errors or omissions.

DB2 UDB Sample Script

Although you may edit the sample DB2 UDB creation script in any way to suit your site requirements, you must retain the command within the script that specifies your codeset, territory, and collating sequence or the language characteristics of your database will not be set up.

NOTE: Siebel Systems supports only binary collating sequence. Therefore, make sure that you include this value when you add the command for setting the language characteristics of your instance, as described in Chapter 8, "Creating the DB2 Universal Database for Windows and UNIX," to the sample.

Sample Database Instance Creation Script (sampledbcfg.ksh)

Edit the `sampledbcfg.ksh` script to fit your site requirements and run it to create a DB2 database instance.

CAUTION: This database instance creation script specifies LOGRETAIN RECOVERY. This requires that you first do a database backup. If you do not first back up the database, the script fails.

The following file can be found in the directory `$DBSRVR_ROOT/db2udb` under UNIX.

```
#----------------------------------------------------------------------
#
#Copyright (C) 2001, Siebel Systems, Inc., All rights reserved.
#
# File: sampledbcfg.ksh
# Date: 9/10/01
#   Purpose: Sample script demonstrates how to configure DB2 and set up a database
#                for Siebel applications
#
# Edit the parameters below to reflect the default DB installation
#To run this script from c-shell or k-shell type . ./sampledbcfg
#Make sure db2 installation is in system path
#Make sure that directories exist prior to db creation
#Make sure directories have read/write privileges
#----------------------------------------------------------------------
```

```
DBNAME=SIEBEL
DBPATH=/home/DBPATH
TEMPSPACE4K=/home/temp_4k
TEMPSPACE16k=/home/temp_16k
TEMPSPACE32k=/home/temp_32k
TBS4KPATH1=/home/tbs_4k_1
TBS4KPATH2=/home/tbs_4k_2
TBS4KPATH3=/home/tbs_4k_3
TBS16KPATH1=/home/tbs_16k_1
TBS16KPATH2=/home/tbs_16k_2
TBS16KPATH3=/home/tbs_16k_3
TBS32KPATH1=/home/tbs_32k_1
TBS32KPATH2=/home/tbs_32k_2
TBS32KPATH3=/home/tbs_32k_3

##########Set the DB2 registry variables##########

db2set DB2_HASH_JOIN=NO
db2set DB2_RR_TO_RS=YES
db2set DB2_MMAP_WRITE=OFF
db2set DB2_MMAP_READ=OFF
db2set DB2_CORRELATED_PREDICATES=ON
db2set DB2_INDEX_2BYTEVARLEN=ON
db2set DB2_PIPELINED_PLANS=ON
db2set DB2_INTERESTING_KEYS=ON
```

DB2 UDB Sample Script

```
db2set DB2_PARALLEL_IO=*
db2set DB2_STRIPED_CONTAINERS=ON
db2set DB2MEMMAXFREE=3000000
db2set DB2MEMDISCLAIM=YES

##########Set the database manager configuration parameters##########

db2 "update dbm cfg using SHEAPTHRES 100000"
db2 "update dbm cfg using DIR_CACHE YES"
db2 "update dbm cfg using QUERY_HEAP_SZ 16384"
db2 "update dbm cfg using ASLHEAPSZ 1024"
db2 "update dbm cfg using RQRIOBLK 65535"
db2 "update dbm cfg using MON_HEAP_SZ 128"
db2 "update dbm cfg using KEEPDARI YES"
db2 "update dbm cfg using MAXAGENTS 1000"
db2 "update dbm cfg using NUM_INITAGENTS 0"
db2 "update dbm cfg using MAX_COORDAGENTS 1000"
db2 "update dbm cfg using INDEXREC RESTART"
db2 "update dbm cfg using MAX_QUERYDEGREE 1"
db2 "update dbm cfg using INTRA_PARALLEL NO"

##########Bounce the server to pick up the configuration changes##########

db2stop force
db2start
```

```
##########Create the database##########


db2 "create database %DBNAME% USING CODESET 1252 TERRITORY US COLLATE USING
IDENTITY"



##########Set the database configuration parameters##########


db2 "update db cfg for $DBNAME using DFT_DEGREE 1"

db2 "update db cfg for $DBNAME using DFT_QUERYOPT 3"

db2 "update db cfg for $DBNAME using DBHEAP 7429"

db2 "update db cfg for $DBNAME using CATALOGCACHE_SZ 5558"

db2 "update db cfg for $DBNAME using LOGBUFSZ 512"

db2 "update db cfg for $DBNAME using UTIL_HEAP_SZ 5000"

db2 "update db cfg for $DBNAME using LOCKLIST 5000"

db2 "update db cfg for $DBNAME using APP_CTL_HEAP_SZ 300"

db2 "update db cfg for $DBNAME using SORTHEAP 1000"

db2 "update db cfg for $DBNAME using STMTHEAP 8192"

db2 "update db cfg for $DBNAME using PCKCACHESZ 2048"

db2 "update db cfg for $DBNAME using STAT_HEAP_SZ 8000"

db2 "update db cfg for $DBNAME using MAXLOCKS 20"

db2 "update db cfg for $DBNAME using LOCKTIMEOUT 300"

db2 "update db cfg for $DBNAME using CHNGPGS_THRESH 30"

db2 "update db cfg for $DBNAME using INDEXSORT YES"
```

DB2 UDB Sample Script

```
db2 "update db cfg for $DBNAME using SEQDETECT YES"
db2 "update db cfg for $DBNAME using DFT_PREFETCH_SZ 128"
db2 "update db cfg for $DBNAME using LOGRETAIN RECOVERY"
db2 "update db cfg for $DBNAME using MAXAPPLS 40"
db2 "update db cfg for $DBNAME using AVG_APPLS 20"
db2 "update db cfg for $DBNAME using MAXFILOP 500"
db2 "update db cfg for $DBNAME using LOGFILSIZ 8000"
db2 "update db cfg for $DBNAME using LOGPRIMARY 25"
db2 "update db cfg for $DBNAME using LOGSECOND 100"
db2 "update db cfg for $DBNAME using SOFTMAX 80"
db2 "update db cfg for $DBNAME using APPLHEAPSZ 2500"
db2 "update db cfg for $DBNAME using NUM_IOCLEANERS 4"
db2 "update db cfg for $DBNAME using NUM_IOSERVERS 20"


##########Connect to the database, increase the default bufferpool##########
##########Create the 16K and 32 bufferpools , grant permissions##########

db2 "connect to $DBNAME"
db2 "create bufferpool buf16k size 500 pagesize 16k"
db2 "create bufferpool buf32k size 500 pagesize 32k"
db2 "grant dbadm on database to $DBNAME"
db2 "grant connect on database to sse_role"
db2 "alter bufferpool ibmdefaultbp size 2000"
```

```
##########Bounce the server to activate new parameters and bufferpools##########


db2 "connect reset"

db2stop force

db2start


##########Create temporary tablespaces with 16K and 32K pagesizes##########


db2 "connect to $DBNAME"

db2 "create temporary tablespace temp16k pagesize 16 K managed by system using
('$TEMPSPACE16k') bufferpool BUF16K"

db2 "create temporary tablespace temp32k pagesize 32 K managed by system using
('$TEMPSPACE32k') bufferpool BUF32k"


##########Create regular tablespaces with 4K, 16K and 32K pagesizes##########

##########Each tablespace in this example uses database managed storage##########


db2 "create tablespace tbs_4k pagesize 4 K managed by database using \

(file '$TBS4KPATH1' 10000, file '$TBS4KPATH2' 10000, file '$TBS4KPATH3' 10000)
bufferpool ibmdefaultbp"


db2 "create tablespace tbs_16k pagesize 16 K managed by database using \

(file '$TBS16KPATH1' 10000, file '$TBS16KPATH2' 10000, file '$TBS16KPATH3' 10000
) bufferpool buf16k"


db2 "create tablespace tbs_32k pagesize 32 K managed by database using \
```

```
(file '$TBS32KPATH1' 10000, file '$TBS32KPATH2' 10000, file '$TBS32KPATH3' 10000)
bufferpool buf32k"


db2 terminate
```

Oracle Sample Script

Edit the sample Oracle database creation script in any way to suit your site requirements and to automate your database instance creation.

This script can run, using SQL* plus command line tool (`sqlplus`) under both Windows and UNIX platforms by changing the `datafile` and `logfile` paths, as appropriate to your platform. Instructions are embedded within the script.

NOTE: This script is only intended for use with Oracle 8i Unicode databases.

Sample Database Instance Creation Script (sampledbcreationoracle.sql)

Edit and run the script `sampledbcreationoracle.sql`, which is located in *`$DBSRVR_ROOT`*`/oracle`, to fit your site requirements and to create an Oracle database instance.

```
#---------------------------------------------------------------
#
#Copyright (C) 2001-2002, Siebel Systems, Inc., All rights reserved.
#
# File: sampledbcfg.sql
# Date: 11/18/02
#    Purpose: Sample script demonstrates how to configure an oracle dB for Siebel
applications
#Execution: Run the script from SQL* plus- "sqlplus", e.g.

#sqlplus /nolog
#SQL>connect /as sysdba
#SQL>@sampledbcreationoracle
```

```
#
# General flow:
# 1)fire up the instance
# 2)create the redo log files and system tablespace
# 3)create a dummy rollback segment
# 4)create the other tablespaces
# 5)bring the dummy rollback segment online
# 6)create the other rollback segments
# 7)cleanup by dropping the dummy rollback segment
# 8)restart
#
# modify  the database name, parameter
# file(bdump/udump/controlfile), datafile path, logfile path,controlfile
# Edit the parameters below to reflect the default oracle installation on Windows
and Unix
# ------------------------------------------------------------------------------
----------

spool crdbsiebel.log;
set echo on
#define group1='d:\tmp\redodmst_01.dbf'
#define group2='d:\tmp\redodmst_02.dbf'
#define group3='d:\tmp\redodmst_03.dbf'
#define syslogfile='d:\tmp\dmstSYS_01.dbf'
#define RBS='d:\tmp\dmstRBS_01.dbf'
#define TEMP='d:\tmp\dmstTMP_01.dbf'
#define TOOLS='d:\tmp\dmstTOOL_01.dbf'
#define loader_data='d:\tmp\dmstLDR_01.dbf'
#define users_data='d:\dmstUSR_01.dbf'

#
# fire up the instance
#
connect / as sysdba;

startup nomount
startup nomount pfile=initsiebel.ora
#
# create the SYSTEM tablespace
#
create database siebel
controlfile reuse
logfile group 1 ('&group1') size 10M reuse,
group 2 ('&group2') size 10M reuse,
group 3 ('&group3') size 10M reuse
datafile '&syslogfile' size 180M reuse
archivelog
```

Oracle Sample Script

```
maxlogfiles 32
maxdatafiles 256
character set AL32UTF8;

#the character set for UNICODE database is “AL32UTF8”, for ENU database is

#“WE8MSWIN1252”

alter tablespace SYSTEM
default storage (initial 8K
next 8K
minextents 1
pctincrease 0);
#
# create a dummy rbs
#
create rollback segment R0 storage (initial 8K next 8K) tablespace system;
alter rollback segment R0 online;

create tablespace RBS
datafile '&RBS' size 1990M reuse
default storage (initial 48K
next 80K
minextents 1
pctincrease 0);

create tablespace TEMP
datafile '&TEMP' size 1990M reuse
default storage (initial 48K
next 80K
minextents 1
pctincrease 0);

create tablespace TOOLS
datafile '&TOOLS' size 100M reuse
default storage (initial 8K
next 16K
minextents 1
pctincrease 0);

create tablespace loader_data
datafile '&loader_data' size 1980M reuse
default storage (initial 48K
next 80K
minextents 1
pctincrease 0);
```

```
create tablespace users_data
datafile '&users_data' size 100M reuse
default storage (initial 8K
next 16K
minextents 1
pctincrease 0);

create tablespace siebeldata
datafile '/datadb/siebel/donnee/siebeldata.dbf' size 2000M reuse
default storage (initial 48K
next 80K
minextents 1
pctincrease 50);

create tablespace siebelindex
datafile '/datadb/siebel/index/siebelindex.dbf' size 1000M reuse
default storage (initial 48K
next 80K
minextents 1
pctincrease 50);

#
# run the appropriate initialization script(s)
#
set stoponerror off
rem
rem catalog.sql also runs the following scripts
rem
remcataudit.sql
remcatexp.sql
remcatldr.sql
rem

@?/rdbms/admin/catalog

rem
rem catproc.sql also runs the following scripts
rem
remcatprc.sql
remcatsnap.sql
remcatrpc.sql
remstandard.sql
remdbmsstdx.sql
rempipidl.sql
rempidian.sql
remdiutil.sql
rempistub.sql
```

Oracle Sample Script

```
remdbmsutil.sql
remdbmssnap.sql
remdbmslock.sql
remdbmspipe.sql
remdbmsalrt.sql
remdbmsotpt.sql
remdbmsdesc.sql
rem

@?/rdbms/admin/catproc

#
# create the non-system rollback segment(s)
#

create rollback segment R01
storage (initial 80K
next 80K
optimal 5M
minextents 5
maxextents 2000)
tablespace RBS;
alter rollback segment R01 online;

create rollback segment R02
storage (initial 80K
next 80K
optimal 5M
minextents 5
maxextents 2000)
tablespace RBS;
alter rollback segment R02 online;

create rollback segment R03
storage (initial 48K
next 80K
optimal 6M
minextents 5
maxextents 2000)
tablespace RBS;
alter rollback segment R03 online;

create rollback segment R04
storage (initial 48K
next 80K
optimal 6M
minextents 5
```

```
maxextents 2000)
tablespace RBS;
alter rollback segment R04 online;

create rollback segment R05
storage (initial 48K
next 80K
optimal 6M
minextents 5
maxextents 2000)
tablespace RBS;
alter rollback segment R05 online;

create rollback segment R06
storage (initial 48K
next 80K
optimal 6M
minextents 5
maxextents 2000)
tablespace RBS;
alter rollback segment R06 online;

create rollback segment R07
storage (initial 48K
next 80K
optimal 6M
minextents 5
maxextents 2000)
tablespace RBS;
alter rollback segment R07 online;

create rollback segment R08
storage (initial 48K
next 80K
optimal 6M
minextents 5
maxextents 2000)
tablespace RBS;
alter rollback segment R08 online;

create rollback segment R09
storage (initial 48K
next 80K
optimal 6M
minextents 5
maxextents 2000)
tablespace RBS;
```

```
alter rollback segment R09 online;

create rollback segment R10
storage (initial 48K
next 80K
optimal 6M
minextents 5
maxextents 2000)
tablespace RBS;
alter rollback segment R10 online;

create rollback segment R11
storage (initial 48K
next 80K
optimal 6M
minextents 5
maxextents 2000)
tablespace RBS;
alter rollback segment R11 online;

create rollback segment R12
storage (initial 48K
next 80K
optimal 6M
minextents 5
maxextents 2000)
tablespace RBS;
alter rollback segment R12 online;

create rollback segment large
storage (initial 10M
next 10M
optimal 200M
minextents 5
maxextents 2000)
tablespace RBS;
alter rollback segment large online;

#
# drop the dummy rbs
#
alter rollback segment R0 offline;
drop rollback segment R0;
#
# create the ops$ user and run catdbsyn as that user
#
create user ops$oracle identified externally;
```

```
grant dba to ops$oracle with admin option;
alter user ops$oracle temporary tablespace temp;
#
# connect as system and run pupbld
#
connect system/manager;
@?/sqlplus/admin/pupbld.sql
@?/rdbms/admin/catdbsyn.sql;
#
# perform the final cleanup sequence
#
alter user system default tablespace tools temporary tablespace temp;
alter user ops$oracle default tablespace tools temporary tablespace temp;
disconnect;
exit;
```

Oracle Sample Script

Structure of the eapps.cfg File D

This appendix illustrates the content of the `eapps.cfg` file, described in Chapter 12, "Installing Siebel Web Server Extension."

Editing the Web Server Extension Configuration File

The `eapps.cfg` file is divided into sections that can be used to configure a selection of Siebel eBusiness Applications from a global standpoint or at the application level. These are explained in the following pages. A number of parameters can also be manually input to control security, the ports used for Web server communications, and other operations. For more information, see "Daemon Processes You Must Restart" on page 331.

A partial sample of the `eapps.cfg` file follows. This file is installed in the binary subdirectory of the Web Server Extension root directory.

The file includes language-specific Siebel Object Manager connect strings for every language supported by Siebel eBusiness Applications in the current release for every supported Siebel application, for example:

```
ConnectString = siebel.TCPIP.none.None://dedwards5:2320/Siebel/
SalesCEObjMgr_sve/SiebSrvr1
```

The values for your configuration file may differ, depending on how you respond to the installation prompts.

`siebel.TCPIP` = the networking protocol

`none` (first instance) = the encryption type chosen. If using Central Dispatch, set the Siebel Server parameter Encryption Type to the value chosen. See the Siebel Server Administration Guide for further information. If Central Dispatch is not used, compression is driven by the Encryption Type parameter and the ConnectString value is ignored.

`None` (second instance) = data compression method chosen. If using Central Dispatch, set the Siebel Server parameter Compression Type to the value chosen. See *Siebel Server Administration Guide* for further information. If Central Dispatch is not used, compression is driven by the Compression Type parameter and the ConnectString value is ignored.

`dedwards5` (first instance) = Siebel Gateway Name Server alias chosen

Parameter Descriptions

These parameters appear in the `eapps.cfg` file, located in the `/bin` subdirectory of your $*SWEAPP_ROOT* installation directory. The values you see are a combination of default settings and the values that you selected during the installation and configuration process. You can edit these parameters post-installation, as described in the following subsection.

[swe] Section

The parameters that follow can be found in this section of the `eapps.cfg` file. These parameters apply to all the selected Siebel eBusiness Applications.

Language

This is the language version of Siebel eBusiness Applications. For example, `enu` stands for U.S. English.

Log

These are the types of log entries you selected during installation. For example, an entry reading `errors` would mean that the log should show only fatal and non-fatal operational errors.

Log Directory

This is the location of the log directory, whose default location is

$*SWEAPP_ROOT*/`log`

ClientRootDirectory

This is the location of SWSE plug-in installation, whose default location is $*SWEAPP_ROOT*

SessionMonitor

Use this parameter to determine whether to gather statistics on all current sessions and report them in the SWSE `stats` page. To enable session monitoring, set SessionMonitor to `TRUE`. When this parameter is set to `TRUE`, administrators can determine who is logged into the system at any given time.

Session data includes each user's Username and unencrypted Session ID, so it is important to restrict visibility to the SWSE `stats` page when SessionMonitor is enabled. To prevent non-administrators from viewing the SWSE `stats` page, you can change the StatsPage parameter to a value known only to administrators.

If SessionMonitor is disabled (set to `FALSE`), sessions will remain unmonitored and will not appear on the application SWSE `stats` page.

NOTE: The collection of session information results in a slight degradation in performance.

AllowStats

This parameter enables or disables application-specific statistics reporting in the SWSE `stats` page. To enable the collection of application-specific statistics, set AllowStats to `TRUE`. AllowStats set to `FALSE` disables statistics gathering. The default is `TRUE` (enable statistics collection).

NOTE: If set to `FALSE`, only system-level statistics are displayed on the SWSE `stats` page.

LogSegmentSize

This parameter determines how large a segment of the log file is in kilobytes. If you set this parameter to `5`, the log segment will be 5 KB in size. A value of `0` turns off segmentation.

LogMaxSegments

This parameter determines the number of log segments that will be kept. If you set this parameter to `1`, only one segment will be kept. When this segment reaches the size specified by the Log Segment Size parameter, the segment will be overwritten. In general, you should set this parameter to a higher value, such as `20`. In this case, the twenty-first segment will overwrite the first segment, and so forth.

A value of `0` turns segmentation off.

SessionTracking

SessionTracking has three values:

- **AutomaticSession (Default).** Detects whether the client is capable of supporting cookies and switches to the right mode.
- **URLSession.** Sets session to URL. For details, see "URLSession" on page 412.
- **CookieSession.** Sets session to Cookie. For details, see "CookieSession."

URLSession

This parameter is optional, requiring manual input by the user within the `[swe]` section of the file, if it is needed.

The Siebel Web Engine exchanges session information with Web browsers, using cookies. For browsers on which cookie acceptance has been disabled, session information is stored in Web page URLs.

When the `URLSession` parameter is set to `TRUE`, session information is always exchanged using URLs and cookies are disabled. This is known as "cookieless" session mode.

CAUTION: Some functionality requires cookies and will not operate correctly in cookieless mode. This includes the Remember My User ID and Password feature and the EAI Inbound HTTP receiver. For information on this receiver, see *Transports and Interfaces: Siebel eBusiness Application Integration Volume III*.

CookieSession

This parameter is optional, requiring manual input by the user within the `[swe]` section of the file, if it is needed.

If the `CookieSession` parameter is set to `TRUE`, cookies will always be used to exchange session information, as opposed to storing the information in Web page URLs.

Web browsers with cookies disabled will not be able to correctly maintain a connection to a Web site.

The CookieSession parameter takes precedence over the URLSession parameter if both are set to TRUE.

CAUTION: Siebel Systems does not recommend setting CookieSession to TRUE for sites that support anonymous browsing. Anonymous browsing by Web clients that have disabled cookies can have a negative impact on performance.

Table 36 on page 413 describes Web server behavior when either the CookieSession or URLSession parameter has been added to the eapps.cfg file by an administrator (a blank table cell below means that the parameter has not manually been added to the file) and set or when both have been added and set.

Table 36. Web Server Behavior Based on CookieSession, and URLSession Parameters

CookieSession	URLSession	Behavior
		Automatic mode[1]
	TRUE	URL session only
	FALSE	Automatic mode
TRUE		Cookie session only
TRUE	TRUE	Cookie session only[2]
TRUE	FALSE	Cookie session only
FALSE		Automatic mode
FALSE	TRUE	URL Session only
FALSE	FALSE	Automatic mode

1. If the Web browser is configured to accept cookies, the default is CookieSession mode; if it does not accept cookies, the default is URLSession mode.
2. The value for CookieSession overrides the value for URLSession.

[defaults] Section

The parameters that follow apply to all the Siebel eBusiness Applications whose connect strings are referenced in this file. Any of the settings that can be specified under `[defaults]` can be also specified for individual eApplications (such as `/esales`) in the `[xxx]` section. If such a parameter is set for a particular eBusiness Application, it overrides the value listed in `[defaults]`.

AnonUserName

This parameter specifies the user name required for anonymous browsing and initial access to the login pages. The user name selected should have access to views intended for anonymous browsing, but it should otherwise be the name of a restricted user.

AnonPassword

The password corresponding to the value entered for `AnonUserName`.

AnonUserPool

This parameter specifies the maximum number of anonymous user connections that can provide access to login pages. The anonymous user pool applies to the brief, initial actions taken by the user on the login pages before logging in. After users log in, they have a separate connection.

The default value is 10. If you expect to have a very busy site, you may want to increase this value. The recommended anonymous pool size is 10% to 15% of the number of concurrent users.

If you expect a Web site to experience large usage spikes, you should increase the anonymous user pool size. This increase in size can be offset by decreasing the anonymous session timeout. For example, any pool consisting of less than 25 anonymous sessions could have 1800-second (30-minute) timeouts. However, pools with more than 50 anonymous sessions may experience better overall performance with 300-second (5-minute) timeouts.

StatsPage

This is the URL (relative to the application's virtual directory) of the page that administrators can access to view statistics on how the Web server is being used. Statistics include the number of active users, the number of requests, and the average speed of request processing.

For information on the SWSE Stats Page, see *Siebel Server Administration Guide*.

HTTPPort
The HTTP port used for Web browser communications. The default setting is the standard port of the Web server in use (80).

HTTPSPort
The HTTPS port used for secure Web browser connections. The default setting is the standard port of the Web server in use (443).

EnableFQDN
This setting enables the processing of requests to Web sites even if the user does not provide the fully qualified domain name, such as http://www.ebiz.siebel.com.

Example:

```
EnableFQDN = TRUE
```

The corollary parameter is `FQDN`, which must also be set appropriately for the request to be processed correctly. See also `FQDN`.

FQDN
Stands for Fully Qualified Domain Name. An example of a fully qualified domain name would be http://ebiz.siebel.com.

If the Web server receives a request for a URL that does not contain the full domain name, the `FQDN` setting causes the browser to reissue the request and to add the domain name.

In the example below, the `eapps.cfg` file is edited so that a Web site is accessed as http://ebiz/callcenter. The `FQDN` setting converts the request to http://ebiz.siebel.com/callcenter.

```
EnableFQDN = TRUE

FQDN = ebiz.siebel.com
```

One possible application for this is in a Single Sign-On environment, in which cookies with `FQDN` must be passed to different servers in the same domain. For information about Single Sign-On, see *Security Guide for Siebel eBusiness Applications*.

See also `EnableFQDN`.

AnonSessionTimeout

The time, in seconds, that a connection open for anonymous browsing can remain idle before it times out. The default is 900 seconds (15 minutes).

Anonymous sessions are those in the anonymous pool. They handle inbound requests from Web clients that do not have a session established. However, their main use is to handle an initial client request, whatever that request is. This normally consists of retrieving a Login page or a Login view.

An anonymous session can also be viewed as the Siebel Web Server Extension's own internal login to the Siebel Object Manager in the Siebel Server. The extension uses these sessions to communicate with the Siebel Object Manager in cases when it is not appropriate to use a session established for a specific Siebel Web Client.

Both guest and anonymous sessions use the `AnonUserName` and `AnonPassword` parameters to log in.

GuestSessionTimeout

The time, in seconds, that a connection open for anonymous browsing can remain idle before it times out. The default is 300 seconds (5 minutes).

Guest sessions are used for anonymous browsing. They permit users to navigate portions of the site without logging in. In contrast to anonymous sessions, guest sessions are associated with an individual Siebel Web Client. These sessions are opened when an unregistered user starts navigating the site, and they remain open until the Web client logs out or times out due to inactivity.

When deciding how long guest user timeout should be, your primary consideration should be whether or not anonymous browsing is being used. If so, guest user timeouts should be greater than the average time users would need to deliberate their next action. In other words, this is the time allowed between user actions.

Both guest and anonymous sessions use the `AnonUserName` and `AnonPassword` parameters to log in.

SessionTimeout

The time, in seconds, from the user's last browser request until the user's connection times out. The default is 900 seconds (15 minutes).

Standard sessions are those where users log in using their registered user name and password. Otherwise, they share many of the same characteristics as guest sessions.

Table 37 offers guidelines for setting this parameter.

NOTE: All the session timeouts mentioned above deal with the session inactivity. In other words, if they are set to 3600 seconds, then it requires one hour of session inactivity for that session to time out. The session inactivity means there should be no request made to the server on that session. Any act pinging the server, such as message broadcasting, resets the session timeout period.

Table 37. Guidelines for Setting Session Timeouts

Session Type	Condition	Recommended Setting
Anonymous Session (recommended anonymous user pool size: 10%-15%)	■ Large numbers of users logging in within a short period of time (login spikes). ■ Frequent logins and logouts.	> 30 min.
Guest	■ Long intervals between user actions. ■ Login view is used for logins. ■ Logout occurs on a logout view.	■ > 30 min. ■ < 5 min. ■ < 5 min.
Regular	■ Employee applications. ■ Customer applications. ■ High security requirements. ■ High continuity (low interaction) with the browser. ■ Lightly loaded system.	■ > 30 min. ■ 1-15 min. ■ < 5 min. ■ > 30 min. ■ > 30 min.

Enabled

The Siebel Web Engine stops responding to user requests if this flag is set to `FALSE`. The default is `TRUE`, or enabled. A particular Siebel eBusiness Application (for example,
`/marketing`) stops responding to user requests if this flag is set to `FALSE`.

This is an optional parameter that, if required, must be manually input in either the `[defaults]` section of the file, or at the application `[/xxx]` level, depending on whether you want to disable all applications or just some.

In the example below, the first line has been manually input to disable the Marketing application. All applications are enabled by default.

```
[/marketing]

enabled = FALSE

ConnectString = siebel://MYSERVER:2320/siebel/SMObjMgr/MYSERVER
```

In the following example, the parameter has been set to disable all applications, because it has been entered in the `[defaults]` section.

```
[defaults]

Enabled = FALSE
```

[/xxx] Section

This section of the file contains connect strings for each Siebel Web Client application, as well as the parameters `WebPublicRootDir` and `WebUpdatePassword.`

Each connect string is preceded by a bracketed heading as illustrated below:

[*/xxx*]

where:

xxx = the name of the Siebel Web Client application you want to edit.

Any parameter you set for a particular eApplication overrides any opposite value listed under `[defaults].`

ConnectString

A connect string exists for each Siebel Web Client application. Each connect string reflects the individual object manager for that application and contains information you entered during setup.

The sample connect string below contains descriptions within parentheses of the string components.

```
[/eevents]
AnonUserName  = User1
AnonPassword  = Password1
ConnectString = siebel.TCPIP.none.NONE://siebel101:2320/
Siebel/eEventsObjMgr/siebel2
```

where:

`siebel.TCPIP` = the networking protocol.

`none` (first instance) = the encryption type chosen.

`NONE` (second instance) = data compression method chosen.

`siebel101` (first instance) = Siebel Gateway alias chosen.

`2320` = Siebel Gateway listening port number.

`Siebel` = Siebel Enterprise Server name chosen.

`eEvents` = relevant object manager (in this example, the eEvents object manager).

`siebel2` (second instance) = Siebel Server alias chosen.

NOTE: When you install Central Dispatch, the entry for the Siebel Server alias does not appear in the connect string; rather, the connect string ends with the Siebel Object Manager.

$*SWEAPP_ROOT*

StartCommand

This value is the assumed command if your session starts and a command (query) is not explicitly specified in the URL. For example, for eservice the StartCommand is `SWECmd=GotoView&SWEView=Home+Page+View+(eService)`. When you first bring up eservice in a new browser, it will be understood that your first query is a GotoView to your home page view. Normally you do not need to modify the StartCommand parameter specified in `eapps.cfg`.

WebPublicRootDir

This is the location for Web image caching, whose default location is

`$`*`SWEAPP_ROOT`*`/public/`*`language`*

WebUpdatePassword

This is the password used by the Siebel Administrator to refresh application images from the Siebel Server on the Web server without restarting.

Sample eapps.cfg File

The application-specific section of this partial `eapps.cfg` file illustrates connection strings for Simple Chinese-specific Siebel Object Managers.

NOTE: For a complete list of languages supported by Siebel eBusiness Applications in this release, and their corresponding Siebel language codes, see *System Requirements and Supported Platforms* on the *Siebel Bookshelf*.

```
[include]
eapps_sia.cfg
eapps_fins.cfg
eapps_sis.cfg


[swe]
Language      = enu
```

```
Log           = errors
LogDirectory  = /export/home/qa1/15026_eapp/log
ClientRootDir = /export/home/qa1/15026_eapp
SessionMonitor  = FALSE
AllowStats      = TRUE
LogSegmentSize  = 0
LogMaxSegments  = 0

[defaults]
AnonUserName  = sadmin
AnonPassword  = sadmin
AnonUserPool  = 10
StatsPage     = _stats.swe
HTTPPort      = 15026
HTTPSPort     = 443
EnableFQDN    = FALSE
FQDN          = CHANGE_ME
AnonSessionTimeout  = 900
GuestSessionTimeout = 300
SessionTimeout      = 900
DoCompression   = TRUE

[/erm_chs]
AnonUserName  = guestcst
AnonPassword  = sadmin
```

Sample eapps.cfg File

```
ConnectString = siebel.tcpip.none.none://server1:2321/siebel/ERMObjMgr_chs/
server1

StartCommand  = SWECmd=GotoView&SWEView=Portal+Page+Home+View

WebPublicRootDir = /export/home/qa1/15026_eapp/public/chs

WebUpdatePassword = TEST


[/prmportal_chs]

AnonUserName  = guestcst

AnonPassword  = sadmin

ConnectString = siebel.tcpip.none.none://server1:2321/siebel/eChannelObjMgr_chs/
server1

WebPublicRootDir = /export/home/qa1/15026_eapp/public/chs

WebUpdatePassword = TEST


[/prmmanager_chs]

ConnectString = siebel.tcpip.none.none://server1:2321/siebel/pManagerObjMgr_chs/
server1

WebPublicRootDir = /export/home/qa1/15026_eapp/public/chs

WebUpdatePassword = TEST


[/wpsales_chs]

SessionTimeout = 3600

ConnectString = siebel.tcpip.none.none://server1:2321/siebel/
WirelessSalesObjMgr_chs/server1

WebPublicRootDir = /export/home/qa1/15026_eapp/public/chs

WebUpdatePassword = TEST
```

```
[/wpserv_chs]

SessionTimeout = 3600

ConnectString = siebel.tcpip.none.none://server1:2321/siebel/
WirelessServiceObjMgr_chs/server1

WebPublicRootDir = /export/home/qa1/15026_eapp/public/chs

WebUpdatePassword = TEST


[/wpprm_chs]

SessionTimeout = 3600

ConnectString = siebel.tcpip.none.none://server1:2321/siebel/
WirelesseChannelObjMgr_chs/server1

WebPublicRootDir = /export/home/qa1/15026_eapp/public/chs

WebUpdatePassword = TEST


[/wpeserv_chs]

SessionTimeout = 3600

ConnectString = siebel.tcpip.none.none://server1:2321/siebel/
WirelesseServiceObjMgr_chs/server1

WebPublicRootDir = /export/home/qa1/15026_eapp/public/chs

WebUpdatePassword = TEST


[/eai_chs]

ConnectString = siebel.tcpip.none.none://server1:2321/siebel/EAIObjMgr_chs/
server1

EnableExtServiceOnly  = TRUE

WebPublicRootDir = /export/home/qa1/15026_eapp/public/chs

WebUpdatePassword = TEST
```

Sample eapps.cfg File

```
[/ecustomer_chs]

AnonUserName  = guestcst

AnonPassword  = sadmin

ConnectString = siebel.tcpip.none.none://server1:2321/siebel/
eCustomerObjMgr_chs/server1

StartCommand  = SWECmd=GotoView&SWEView=Home+Page+View+(eCustomer)

WebPublicRootDir = /export/home/qa1/15026_eapp/public/chs

WebUpdatePassword = TEST


[/emarketing_chs]

AnonUserName  = guestcst

AnonPassword  = sadmin

ConnectString = siebel.tcpip.none.none://server1:2321/siebel/eMarketObjMgr_chs/
server1

StartCommand  = SWECmd=GotoView&SWEView=Home+Page+View+(eMarketing)

WebPublicRootDir = /export/home/qa1/15026_eapp/public/chs

WebUpdatePassword = TEST


[/esales_chs]

AnonUserName  = guestcst

AnonPassword  = sadmin

ConnectString = siebel.tcpip.none.none://server1:2321/siebel/eSalesObjMgr_chs/
server1

StartCommand  = SWECmd=GotoView&SWEView=Home+Page+View+(eSales)

WebPublicRootDir = /export/home/qa1/15026_eapp/public/chs

WebUpdatePassword = TEST
```

```
[/eauctionswexml_chs]

AnonUserName  = guestcst

AnonPassword  = sadmin

ConnectString = siebel.tcpip.none.none://server1:2321/siebel/
eAuctionSWEXMLObjMgr_chs/server1

WebPublicRootDir = /export/home/qa1/15026_eapp/public/chs

WebUpdatePassword = TEST


[/eservice_chs]

AnonUserName  = guestcst

AnonPassword  = sadmin

ConnectString = siebel.tcpip.none.none://server1:2321/siebel/eServiceObjMgr_chs/
server1

StartCommand  = SWECmd=GotoView&SWEView=Home+Page+View+(eService)

WebPublicRootDir = /export/home/qa1/15026_eapp/public/chs

WebUpdatePassword = TEST


[/etraining_chs]

AnonUserName  = guestcst

AnonPassword  = sadmin

ConnectString = siebel.tcpip.none.none://server1:2321/siebel/
eTrainingObjMgr_chs/server1

StartCommand  = SWECmd=GotoView&SWEView=Home+Page+View+(eTraining)

WebPublicRootDir = /export/home/qa1/15026_eapp/public/chs

WebUpdatePassword = TEST
```

Sample eapps.cfg File

```
[/eevents_chs]

AnonUserName  = guestcst

AnonPassword  = sadmin

ConnectString = siebel.tcpip.none.none://server1:2321/siebel/eEventsObjMgr_chs/
server1

StartCommand  = SWECmd=GotoView&SWEView=Home+Page+View+(eEvents)

WebPublicRootDir = /export/home/qa1/15026_eapp/public/chs

WebUpdatePassword = TEST


[/sales_chs]

ConnectString = siebel.tcpip.none.none://server1:2321/siebel/SSEObjMgr_chs/
server1

WebPublicRootDir = /export/home/qa1/15026_eapp/public/chs

WebUpdatePassword = TEST


[/service_chs]

ConnectString = siebel.tcpip.none.none://server1:2321/siebel/SFSObjMgr_chs/
server1

WebPublicRootDir = /export/home/qa1/15026_eapp/public/chs

WebUpdatePassword = TEST


[/callcenter_chs]

ConnectString = siebel.tcpip.none.none://server1:2321/siebel/SCCObjMgr_chs/
server1

WebPublicRootDir = /export/home/qa1/15026_eapp/public/chs

WebUpdatePassword = TEST
```

```
[/marketing_chs]

ConnectString = siebel.tcpip.none.none://server1:2321/siebel/SMObjMgr_chs/
server1

WebPublicRootDir = /export/home/qa1/15026_eapp/public/chs

WebUpdatePassword = TEST


[/servicece_chs]

ConnectString = siebel.tcpip.none.none://server1:2321/siebel/
ServiceCEObjMgr_chs/server1

EnableExtServiceOnly  = TRUE

WebPublicRootDir = /export/home/qa1/15026_eapp/public/chs

WebUpdatePassword = TEST


[/salesce_chs]

ConnectString = siebel.tcpip.none.none://server1:2321/siebel/SalesCEObjMgr_chs/
server1

EnableExtServiceOnly  = TRUE

WebPublicRootDir = /export/home/qa1/15026_eapp/public/chs

WebUpdatePassword = TEST


[/smc_chs]

SessionTimeout = 3600

ConnectString = siebel.tcpip.none.none://server1:2321/siebel/SMCObjMgr_chs/
server1

WebPublicRootDir = /export/home/qa1/15026_eapp/public/chs

WebUpdatePassword = TEST
```

Sample eapps.cfg File

Tuning UNIX Operating Systems for Siebel Installation

E

This appendix describes advanced tuning steps designed to improve the performance and scalability of your Siebel Enterprise installation. These steps are only required if more than 500 concurrent users use your Siebel Enterprise. It assumes you have completed the minimum necessary configuration steps described in Chapter 5, "Installing the Siebel Gateway" and Chapter 6, "Installing the Siebel Server."

Tuning the Siebel Server for UNIX Operating Systems

Modify the Siebel Server configuration file on AIX, Solaris, and HP-UX as shown below.

To tune the Siebel Server for UNIX

1. Using a text editor such as vi, open the application-specific configuration file for editing. This is found in `$SIEBEL_ROOT/siebsrvr/bin/LANGUAGE`.

   where:

   `$SIEBEL_ROOT` = the location where you installed the application.

   `LANGUAGE` = the language you want to configure for Siebel Server to run in.

   For example, if the application is eService and the language is U.S. English, the complete path name would be:

   ```
   /siebel/eservice/siebsrvr/bin/enu/eservice.cfg
   ```

2. (Optional) If the CDA functionality is not required by the customer, set `EnableCDA = FALSE` to disable it.

3. (Optional) If the CTI bar is not required by the customer, set `CommEnable = false` for Call Center, to disable it.

4 (Optional) If the Call Center is required by the customer, set `CommConfigManager = true`.

Enabling External User Authentication on UNIX

You can configure Siebel applications to perform external authentication of Siebel users. A variety of authentication strategies can be implemented. For information about implementing external authentication, see *Security Guide for Siebel eBusiness Applications*.

If you implement external authentication for applications on Siebel Servers on UNIX, observe the following guidelines as well as those in *Security Guide for Siebel eBusiness Applications*.

To enable external authentication, edit siebenv.sh or siebenv.csh

1 Unset the environment variable *`SIEBEL_MEMORY_ALLOCATOR`*, if already set in the environment. The parameter *`Memory Allocator`* is `ON` by default.

CAUTION: Do not disable *`Asserts`* in a production environment. *`Asserts`* enables some diagnostic logging. Disabling the logging will make resolving some errors extremely difficult.

2 Set `MinMTServers`, `MaxMTServers`, and `MaxTasks`.

Determine the number of users targeted on one Object Manager. A value of 100 is currently used. Use the following equation to calculate the values needed for the application's Object Manager configuration:

$$\text{MaxMT Servers} = \text{MinMT Servers} = \frac{\textit{target No. users}}{\textit{users/OM}} = \frac{500}{100} = 5$$

Use the following equation:

MaxTasks = *target No. of users* + No. of *anon users* + *buffer*

where:

- The *No. of anon users* should be set to 20% of *target No. of users*.
- A buffer of 20% of *target No. of users* is required for scenarios where the user is browsing without logging in.
- Round up *MaxTasks*, so that the value of *MaxTasks* is a multiple of *Min / MaxMTServers*.

Tuning Siebel eBusiness Applications for AIX

This section provides instructions for configuring and tuning Web servers and related products so you can run Siebel applications on AIX.

Tuning the Web Server for AIX

This section describes default values for environmental variables that are optimized for scalability on IHS Web server. You can further adjust these settings at your discretion to optimize the performance of your Web server.

The following environmental variables are set in $*SIEBEL_ROOT*/bin/startapa, where *SIEBEL_ROOT* is the root directory in which your Web server is installed:

```
export AIXTHREAD_SCOPE=S
export AIXTHREAD_MNRATIO=1:1
export AIXTHREAD_MUTEX_DEBUG=OFF
export AIXTHREAD_RWLOCK_DEBUG=OFF
export AIXTHREAD_COND_DEBUG=OFF
export RT_GRQ=ON
export YIELDLOOPTIME=4
export SPINLOOPTIME=1000
export SIEBEL_ASSERT_MODE=0
export MALLOCMULTIHEAP=considersize,heaps:No_of_CPUs_on_machine
export MALLOCTYPE=buckets
export LDR_CNTRL=LOADPUBLIC@MAXDATA=0x60000000
```

The *heaps* parameter value should be the number of CPUs on the Web server machine. For example, if there are two CPUs, this line should be:

```
export MALLOCMULTIHEAP=considersize,heaps:2
```

NOTE: To conserve disk space, you can set `SIEBEL_ASSERT_MODE to` reduce the logging level for the Web server to a minimum.

To set the number of threads for the Web server on IHS

- Using a text editor, set the values in the *`workers.c`* section of `$`*`SVR_ROOT/httpd.conf`* as follows:

```
StartServers              1
ServerLimit               1
ThreadLimit               N
MaxClients                N
MinSpareThreads           1
MaxSpareThreads           N
ThreadsPerChild           N
MaxRequestsPerChild       0
```

  where:

  `N` = three times the average number of concurrent users that the Web server must support, or *`N`* = (`3*`*`average_number_of_concurrent_users`*).

Tuning the Siebel Web Server Extension for AIX

You must first tune the Siebel Web Server Extension to run Siebel applications on AIX.

To tune the Siebel Web Server Extension for AIX

1. On your AIX server, navigate to the `bin` directory in the Siebel Web Server Extension installation directory.
2. Using a text editor such as `vi`, open the `eapps.cfg` file for editing.
3. Set *`AnonUserPool`* to 20% of *`target No. of users`*. This is the minimum required.

4 Set *GuestSessionTimeout* to 60.

NOTE: This configuration is required for scenarios where the user is browsing without logging in.

5 Set the appropriate *AnonUser* user names and passwords according to your user authentication strategy. The following settings will work well in most deployments. For more complete information, see *Security Guide for Siebel eBusiness Applications*.

   a For Siebel employee applications, such as Siebel Call Center with database login, set the user name to SADMIN and the password to SADMIN.

   b For Siebel customer applications, such as Siebel eService and eSales, set the user name to GUESTCST and the password to GUESTCST.

   c For Siebel ERM, set the user name to GUESTERM and the password to GUESTERM.

   d For Siebel partner applications, such as Siebel eChannel, set the user name to GUESTCP and the password to GUESTCP.

6 Set Memory Allocator to ON as the default setting.

7 Unset the environment variable *SIEBEL_MEMORY_ALLOCATOR*, if this variable is already set in the environment.

8 Restart the Web server for these changes to take effect.

Tuning the Siebel Server for AIX

AIX provides several environment variables that can be tuned to optimize Siebel Server performance. These environment variables and their values are used as start parameters when the Siebel Server is started. Table 38 and Table 39 describe each of these environment variables and their recommended settings.

Table 38. Environment Variables Used for Optimization in *$SIEBEL_ROOT/siebenv*

Environment Variable	Value	Description
AIXTHREAD_SCOPE	S	Controls contention scope, S signifies system-based contention scope (1:1).
AIXTHREAD_MNRATIO	1:1	Controls the M:N ratio of number of kernel threads that should be employed to handle runnable pthreads.
AIXTHREAD_MUTEX_DEBUG	OFF	Maintains a list of active mutexes for use by the debugger.
AIXTHREAD_RWLOCK_DEBUG	OFF	Maintains a list of read-write locks for use by the debugger.
AIXTHREAD_COND_DEBUG	OFF	Maintains a list of condition variables for use by the debugger.

Table 39. Environment Variables Used for Optimization in *$SIEBEL_ROOT/bin/siebmtshw*

Environment Variable	Value	Description
RT_GRQ	ON	Causes thread to be put on a global run queue rather than on a per-CPU run queue.
SPINLOOPTIME	1000	Controls the number of times to retry a busy lock before yielding to another processor.
YIELDLOOPTIME	4	Controls the number of times to yield the processor before blocking on a busy lock (only for libpthreads).

Table 39. Environment Variables Used for Optimization in *$SIEBEL_ROOT/bin/siebmtshw*

Environment Variable	Value	Description
MALLOCTYPE	buckets	Malloc buckets provide an optional buckets-based extension of the default allocator. It improves malloc performance for applications that issue large numbers of small allocation requests. When malloc buckets is enabled, allocation requests that fall within a predefined range of block sizes are processed by malloc buckets. All other requests are processed in the usual manner by the default allocator.
MALLOCMULTIHEAP	heaps:n	Controls the number of heaps within the process private segment. n should be equal to the number of processors on the server.
LDR_CNTRL	`LOADPUBLIC@MAXDATA=0x50000000`	The `LOADPUBLIC` option directs the system loader to load all modules requested by an application into the global shared library segment. Set LDR_CNTRL in the environment of the user, or preferably, in the shell script that launches the executable needing the extra memory. The MAXDATA value reserves five 256 MB segments for all executables launched from this environment, and overrides the default executable setting. The default depends on the executable. With the default value, a Siebel component can support a maximum value of 5000 for the `MAXTASK` parameter. With this value, `MAXTASK` can go up to 9000. Depending on the environment, you may reserve up to a maximum of six segments. If it is not possible to use that many segments, Siebel Server will terminate very early.

Tuning Kernel Settings for AIX

There are a number of AIX Kernel settings you can tune for optimal Siebel Server performance under AIX. These include the Virtual Memory Management and TCP settings. You must have root privileges to modify these settings.

To change the vmtune values

1. Using a text editor such as vi, open the `/etc/rc.net` file for editing.
2. Modify the `vmtune` settings as follows:

```
if [ -f /usr/samples/kernel/vmtune ] ; then
/usr/samples/kernel/vmtune -p 5 -P 8 -f 720 -F 752 -b 200 -s 1
```

3. Modify the socket default buffer size as follows:

```
if [ -f /usr/sbin/no ] ; then
   /usr/sbin/no -o tcp_sendspace=24576
   /usr/sbin/no -o tcp_recvspace=24576
```

4. Make sure that all User Limits (`ulimit`) are set to `unlimited`, as follows:

```
ulimit –a
```

NOTE: To change the set limits, update the `/etc/security/limits` file by changing all `ulimit` parameter values to `–1` (unlimited).

5. Save your changes and exit the text editor.
6. Restart the server to have your changes take effect.

Tuning Central Dispatch for AIX

Before running Siebel Server with Central Dispatch on AIX, you need to set the following Central Dispatch settings.

To tune Central Dispatch for AIX

1. Make sure that the VIP and the IP address of the Primary Scheduler are on the same Subnet.
2. Use a dedicated user account for the Central Dispatch `admin` user and disable the lockout feature for this particular user.

   If the lockout feature is enabled, it will have an impact on the availability of the Central Dispatch site.

3. On the Central Dispatch machine, change the `Heart Beats Until Down` and `Agent Heart Beat Interval` as follows:
   a. Bring up the Central Dispatch Manager.
   b. Navigate to Site Setup > Operations > Advanced Options.
   c. Set `Heart Beats Until Down` to `100`.
   d. Set the `Agent Heart Beat Interval` to `1`.
   e. Navigate to Site Setup > Operations.
   f. If Central Dispatch is running, stop and restart the server.
4. On the Central Dispatch machine and Siebel Server machines, set the following environment variables in the `$RESONATE/bin/cdagenctl` file. These values are the maximum permitted.

```
HTTP_INACTIVE_CONN_TIMEOUT = 31536000

SERVER_INACTIVE_CONN_TIMEOUT = 31536000
```

5. To restart the Central Dispatch daemons, run `/$RESONATE/bin/cdagentctl`.
6. Make sure that there are no scheduling rules registered with Central Dispatch before restarting the Siebel Servers after the site or servers were down for a refresh.

NOTE: If any open connections are observed across the site from the Dispatch Manager console, stop and restart the Central Dispatch site before starting the Siebel Servers.

EnableOLEAutomation for AIX

Before starting the server, use Server Administration to change the `EnableOLEAutomation` parameter to `FALSE`.

Tuning Siebel eBusiness Applications for Solaris

This section provides instructions for configuring and tuning Web servers and related products so you can run Siebel applications on Solaris.

Tuning the Web Server for Solaris

You must tune the Sun ONE (iPlanet) Web server for optimal performance.

To tune the Sun ONE Web server

1. Using a text editor such as vi, open the file *Webserver_root*/config/magnus.conf

   where:

   Webserver_root = the root path of the Sun ONE (iPlanet) Web Server.

2. Set the parameter RqThrottle to 1024.

   The RqThrottle parameter specifies the maximum number of simultaneous transactions the Web server can handle. The default value is 512. By changing this value to 1024 you can minimize latencies for the transactions that are performed.

3. Add or modify the MaxKeepAliveConnections parameter value to 1000. The default value is 200.

4. Save your modifications to the magnus.conf file.

5. Restart the Web server.

   After making the changes above to the Sun ONE (iPlanet) Web server parameters, you should change the following parameters on the workstation hosting the Sun ONE (iPlanet) Web server.

6. Open the /etc/system for editing.

7 Set the following Solaris system parameters:

Parameter	Scope	Default Value	Tuned Value	Comments
rlim_fd_max	/etc/system	1024	8192	Process open file descriptors limit; should account for the expected load (for the associated sockets, files, and pipes, if any).
rlim_fd_cur	/etc/system	64	8192	

8 Restart the workstation hosting the Sun ONE (iPlanet) Web server.

Tuning the Siebel Web Server Extension for Solaris

You must tune the Siebel Web Server Extension for optimal performance on Solaris.

To tune the Siebel Web Server Extension

1 In the Siebel Web Server Extension installation directory, navigate to the `bin` subdirectory.

2 Using a text editor such as `vi`, open the `eapps.cfg` file for editing.

3 Set *`AnonUserPool`* to 20% of *`target #users`*.

4 *`Set GuestSessionTimeout`* to `60`.

NOTE: This is required for scenarios where the user is browsing without logging in.

5 Set the appropriate `AnonUser` user names and passwords. This will depend on your user authentication strategy. Typically, make the following settings. However, for more complete information, see *Security Guide for Siebel eBusiness Applications*.

   a For Siebel employee applications, such as Siebel Call Center, with database login, set the user name to `SADMIN` and the password to `SADMIN`.

b For Siebel customer applications, such as Siebel eService and eSales, set the user name to `GUESTCST` and the password to `GUESTCST`.

c For Siebel ERM, set the user name to `GUESTERM` and the password to `GUESTERM`.

d For Siebel partner applications, such as Siebel eChannel, set the user name to `GUESTCP` and the password to `GUESTCP`.

6 Restart the Web server.

Tuning Kernel Settings for Solaris

To run Siebel Servers in a Solaris environment, you need to set Solaris Kernel parameters to specific recommended values for particular releases of Solaris servers.

To learn the specific parameter recommendations for Siebel Servers running on Solaris, contact Siebel Technical Services.

CAUTION: If you use the default Solaris Kernel parameters, or lower, to run a Siebel Server in a Solaris environment, then there is a risk of serious performance problems, resulting in SIGABRT or SIGSEV errors, for some Siebel Server components.

There are a number of Solaris Kernel parameter settings that significantly affect performance of Siebel applications in general, and the Siebel Server in particular. These include parameters that govern elements such file descriptors, stack size, memory, and semaphores. These parameters reside in the Solaris Kernel configuration file `/etc/system`. To change the settings for these parameters, you must manually edit this file, save your changes, and reboot the system.

Normally, the Solaris Kernel memory parameter settings are relatively low. However, for large memory-model applications like the Siebel Server applications, it is recommended that you increase the values assigned to a number of these parameters.

To tune the Solaris Kernel settings for Siebel Server

1 Using an editor such as `vi`, open the `/etc/system` file for editing.

2 Add or modify the following lines that are general settings:

```
set rlim_fd_cur=6000
set rlim_fd_max=6000
```

3 Add or modify the following lines that are shared memory settings. In the first line, select either Solaris 32-bit or 64-bit, respectively:

```
set shmsys:shminfo_shmmax = 0xffffffff [or] 0xffffffffffffffff
set shmsys:shminfo_shmmni = 1024
set shmsys:shminfo_shmseg = 1024
```

4 Add or modify the following lines that are message queue settings:

```
set msgsys:msginfo_msgmax = 4096
```

5 Add or modify the following lines that are semaphore settings:

```
set semsys:seminfo_semaem = 16384
set semsys:seminfo_semopm = 100
set semsys:seminfo_semmni = 4096
set semsys:seminfo_semmns = 16384
set semsys:seminfo_semmnu = 4096
set semsys:seminfo_semume = 2500
set semsys:seminfo_semmsl = 500
```

6 Save your modifications and exit the editor.

7 Restart the machine to have the new settings take effect.

Tuning Object Manager Instances for Solaris

Solaris machines running more than 50 Object Managers may experience a situation where one or more of the Object Managers do not start correctly, while the rest start and function normally. The log files for the Object Managers that do not start will indicate that they have not started correctly. If you experience these symptoms, change the `tcp_conn_req_max_q` and `tcp_conn_req_max_q0` default values with the `ndd` command.

NOTE: These settings will be lost when the machine is rebooted. Please add them to /etc/init.d to have these changes take effect even after reboot.

To change TCP values

1. Log in as `root`.
2. Issue the `ndd` command:

   NOTE: The responses are noted in bold.

   ```
   ndd /dev/tcp
   name to get/set ? tcp_conn_req_max_q
   value ? 1024
   name to get/set ? tcp_conn_req_max_q0
   value? 4096
   ```

3. Add the following lines to the `/etc/system` file, using any text editor such as `vi`:

   ```
   set tcp:tcp_conn_req_max_q=1024
   set tcp:tcp_conn_req_max_q0=4096
   ```

   These parameters will be automatically set, when the machine is rebooted.

4. Restart Siebel Server as the Siebel install owner.

Tuning Central Dispatch for Solaris

To run Central Dispatch on Solaris, you must first configure Central Dispatch.

To tune Central Dispatch for Solaris

1. Make sure that the virtual IP address and the IP address of the Primary Scheduler are on the same Subnet.
2. Use a dedicated user account for the Central Dispatch `admin` user and disable the lockout feature for this particular user.

   If the lockout feature is enabled, it will have an impact on the availability of the Central Dispatch site.

3. On the Central Dispatch machine, change the *Heart Beats Until Down* and *Agent Heart Beat Interval* as follows:
   a. Bring up the Central Dispatch Manager.
   b. Navigate to Site Setup > Operations > Advanced Options.
   c. Set Heart Beats Until Down to 100.
   d. Set Agent Heart Beat Interval to 1.
   e. Navigate to Site Setup > Operations.
   f. Stop and restart the site.
4. If are using a Sun ERI Network Interface Card (NIC), use a text editor such as vi and open /etc/system for editing.

   Because Central Dispatch binds to the physical NIC card, this can interfere with packet processing. Set the following variable to disable checksum on network packets processing:

   ```
   set ip:dohwcksum=0
   ```

   NOTE: The environment variable $*RESONATE_ROOT* is set automatically for you when the server is started. You should not set this variable in .profile or siebenv.sh.

5. On the Central Dispatch machine and Siebel Server machines, set the following environment variables in the /etc/rc.cdagent file (Central Dispatch startup script file). These values are the maximum permitted.

   ```
   HTTP_INACTIVE_CONN_TIMEOUT = 31536000

   SERVER_INACTIVE_CONN_TIMEOUT = 31536000
   ```

6. Use the command /etc/rc.cdagent restart to restart the Central Dispatch daemons.

7 Make sure that there are no scheduling rules registered with Central Dispatch before restarting the Siebel Servers after the site or servers were down for a refresh.

NOTE: If any open connections are observed across the site from the Dispatch Manager console, stop and restart the Central Dispatch site before starting the Siebel Servers.

EnableOLEAutomation Setting on Solaris

When installing on a UNIX platform, before starting the server, use the Server Administration to change the `EnableOLEAutomation` parameter to `FALSE`.

Tuning Siebel eBusiness Applications for HP-UX

This section provides instructions for configuring and tuning Web servers and related products so you can run Siebel applications on HP-UX.

Tuning the Web Server for HP-UX

This section provides recommended initial settings for HP-Apache2 Web server environment variables. You can further modify these settings at your discretion to optimize the performance of your Web server.

To set the number of threads for the Web server on HP-Apache2

- Using a text editor, set the values in the *workers.c* section of $*SVR_ROOT*/*httpd.conf* as follows:

```
StartServers              1
ServerLimit               1
ThreadLimit               N
MaxClients                N
MinSpareThreads           1
MaxSpareThreads           N
ThreadsPerChild           N
MaxRequestsPerChild       0
```

  where:

  N = three times the average number of concurrent users that the Web server must support, or *N* = (3**average_number_of_concurrent_users*).

Tuning Kernel Settings for HP-UX

Modify the HP-UX Kernel parameters to the recommended values shown below. Use the HP-UX System Administration Manager (SAM) tool to make these changes.

```
NPROC                   4096
ksi_alloc_max          32768  -  (NPROC*8)
max_thread_proc         4096  –  4096
maxdsiz            0x90000000  -  0X90000000
maxdsiz_64bit      2147483648  -  2147483648
maxfiles                4000  -  4000
maxssiz             401604608  -  401604608
maxssiz_64bit      1073741824  -  1073741824
maxusers                 128  -  128
msgmap                  4098  -  (NPROC+2)
msgmni                  4096  -  (NPROC)
msgtql                  4096  -  (NPROC)
ncallout                8000  -  8000
nclist                  2148  -  (100+16*MAXUSERS)
ncsize                 35840  -  (8*NPROC+2048+VX_NCSIZE)
nfile                  67584  -  (16*NPROC+2048)
ninode                 34816  -  (8*NPROC+2048)
```

```
nkthread                  7184  -  (((NPROC*7)/4)+16)
nproc                     4096  -  4096
nsysmap                   8192  -  ((NPROC)>800?2*(NPROC):800)
nsysmap64                 8192  -  ((NPROC)>800?2*(NPROC):800)
semmap                    1026  -  1026
semmni                    1024  -  1024
semmns                   16384  -  ((NPROC*2)*2)
semmnu                    2048  -  2048
semume                     256  -  256
shmmax            0x40000000  Y  0X40000000
shmmni                    1024  -  1024
shmseg                    1024  Y  1024
vps_ceiling                 64  -  64
```

Setting Maximum Thread Limits for HP-UX

The default `ThreadLimit` for HP-Apache2 is 64, but it can be set it to a much higher number. The highest setting depends on the kernel settings.

To set threadlimit to a higher number

1. Edit *`httpd.conf`* and modify the following attributes

   `ThreadLimit Y * e =` 20000 is the maximum value supported by the Apache Web server. You can reset this to the number your system supports.

   Note that this directive must be executed before other directives.

   `ThreadsPerChild Y * e =` Number of threads per child. Cannot exceed `ThreadLimit`.

   `MaxClients Y * e =` Maximum connection. Cannot exceed `ThreadPerChild`.

2. In the same file, update the values for User and Group as shown below:

   `User` `nobody`

   Group `system`

Tuning the HP-UX Scheduler

Siebel eBusiness Applications will run slow on HP-UX unless you make the following changes. You must have root privileges to make the following changes.

To tune the Scheduler settings

1. Add the following line to the `/etc/privgroup` file, creating it if necessary:

   ```
   -g RTSCHED
   ```

2. Save the file and exit.

3. Execute the following command:

   ```
   setprivgroup -f /etc/privgroup
   ```

4. Verify that global `RTSCHED` permissions are set. Execute the following command:

   ```
   getprivgroup
   ```

   If the command is successful, the system will respond:

   ```
   global privileges: RTSCHED
   ```

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