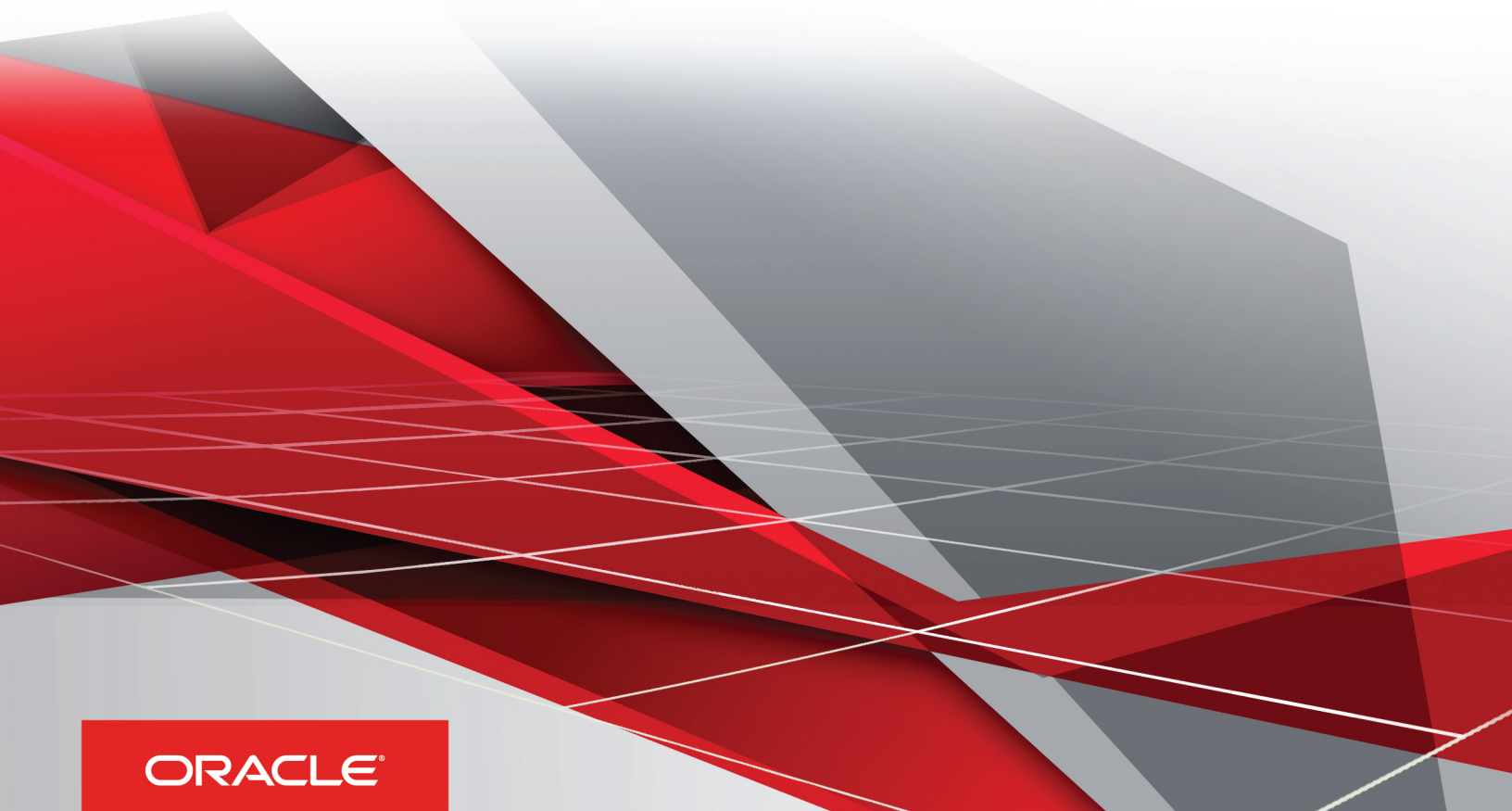
Siebel

Database Upgrade Guide for DB2 for z/OS

September 2019



Siebel
Database Upgrade Guide for DB2 for z/OS

September 2019

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Preface

This preface introduces information sources that can help you use the application and this guide.

Using Oracle Applications

To find guides for Oracle Applications, go to the Oracle Help Center at *http://docs.oracle.com/*.

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1 What's New in This Release

What's New in Siebel Database Upgrade Guide for DB2 for z/OS, Siebel CRM 19.9 Update

The following information lists the changes in this revision of the documentation to support this release of the software.

Topic	Description
Supported Upgrade Paths for Siebel 2019	Modified topic. Updated the version numbers for supported upgrade paths.
About the Process Flow for Migration Resources	Modified topic. Describes how the orchestration.json file defines the migration process flow for migration resources.
Executing a Siebel Migration Plan	Modified topic. Describes how to execute a migration plan, including the following: • What happens after execution of the Runtime Repository Data Service completes. • Preprocessing and postprocessing for migration execution.
Using REST API with the Migration File Prepare and Deploy Service	New topic. Describes the Migration File Prepare and Deploy Service.
Roadmap for Planning a Migration with Siebel Migration	Modified topic. The username requirements for migration is that both source and target environments should have the same username and passsword.
Example of a Siebel Development Environment Upgrade Flow (Steps That the upgphys Process Executes)	Modified topic (Steps That the upgphys Process Executes). Clarified steps 8 and 9 as follows: • 8. Export repository to a file: This step exports the Design Time Repository (DR) to the custrep_dev.dat file and Runtime Repository (RR) to the custrep.dat file. • 9. Import New Customer Repository as Siebel Repository: This step imports the Design Time Repository (DR) from the custrep_dev.dat file.
About Migrating with Siebel Migration z/OS *About REST API Used for Migration Discovery and Execution* *Asynchronous Migration Using Siebel Migration* *Incremental Migration from a Development to a Production Environment Without Using Siebel Migration*	Modified topics. If your Runtime Repository Data Service or Incremental Runtime Repository Data Service migration plan does not include the non-mandatory Schema Service, then you must migrate any schema changes before executing the plan.
About Migrating User Preferences	New topic. As of Siebel CRM 8.1.x/8.2.x (including all Siebel Innovation Packs), the migration of user preferences is typically supported between releases.

Topic	Description

What's New in Siebel Database Upgrade Guide for DB2 for z/OS, Siebel CRM 19.7 Update

The following information lists the changes in this revision of the documentation to support this release of the software.

Topic	Description
Tune the Upgrade Files	Modified topic. Using the /z and /h parameters in the import command will reduce upgrade time and improve the overall repository import process performance.
Validating the Extracted Storage Control File	Modified topic. When validation completes, review the upgwiz.log and schema.log log files and correct any validation errors before running the validation process again.
Inactivating Unreferenced Repository Objects	Modified topic. RepCrawler references the following files present in the **`dbsrvr/common`** folder to determine whether to inactivate unreferenced objects or not: • ReSanitizationRules.xml • RefReferenceObjects.txt
Executing a Siebel Migration Plan	Modified topic. After execution of the Runtime Repository Data Service completes, you must do the following in the target environment: rename the Migrated Repository to Siebel Repository, restart Siebel Server, and activate workflow tasks.
Viewing Migration History and Log Files	Modified topic. Migration logging has been enhanced to include logging for the following Siebel Migration resource operations: • Runtime Repository Data Service: GetWatermark operation. • Application Workspace Data Service: GetFullSeedWatermark and GetSeedCopyWatermark operations. • Incremental Runtime Repository Data Service: ActivateWorkflowsTasks operation. • Incremental Application Workspace Data Service: InvalidateSeedCaches operation. • File Prepare and Deploy: generateWatermark, readwatermarkfile, writewatermarkfile operations.

What's New in Siebel Database Upgrade Guide for DB2 for z/OS, Siebel CRM 19.4 Update

The following information lists the changes in this revision of the documentation to support this release of the software.

Topic	Description
About Migrating with Siebel Migration z/OS	Modified topic. You are no longer prompted for schema username or password when creating (export/import only) migration plans for the following services • Runtime Repository Data Service • Incremental Runtime Repository Data Service (IRR) • Application Workspace Data Service (Full Seed/LOV)
About REST API Used for Migration Discovery and Execution	Modified topic. It's no longer necessary to run the Schema Service along with the Runtime Repository Service, Application Workspace Data Service, or Incremental Runtime Repository Data Service.
Siebel Migration Plan Dependencies	Modified topic. From 19.4 Update release onwards, the Schema Service is no longer automatically selected if any of the following services are selected when creating or editing a migration plan: • Application Workspace Data Service • Runtime Repository Data Service • Incremental Runtime Repository Data Service If you want to migrate schema using the UI, then you must select the Schema Service in the same migration plan or create a new plan. **Note:** This condition does not apply when creating or editing a migration plan using REST. To run Application Workspace Data Service, Runtime Repository Data Service and Incremental Runtime Repository Data Service, isSelected must be set to True for the Schema Service as shown in the following example for Incremental Repository Data Service: `{ "name": "IRR", "description": "IRR", "source": "Source", "target": "Target", "resources": [ { "name": "Incremental Runtime Repository Data Service", "isSelected": "true" }, { "name": "Schema Service", "isSelected": "true" } ] }`
Full RR Migration Without Using Siebel Migration	Modified topic. It is no longer necessary to do the following when performing a full Runtime Repository migration without using the Siebel Migration application: • Export the schema from the source environment. • Import the schema to the target environment.

What's New in Siebel Database Upgrade Guide for DB2 for z/OS, Siebel CRM 19.3 Update

The following information lists the changes in this revision of the documentation to support this release of the software.

Topic	Description
About Migrating with Siebel Migration z/OS	Modified topic. Siebel Migration does not support migration of repository or workspace data from non-development (RR) environments to other RR environments - migrating from Test to Production or UAT to Production is not permitted. Added tables listing the migration plan actions for the following migration services and the additional information that is required: • Schema Service • Runtime Repository Data Service • Incremental Runtime Repository Data Service (IRR) • Application Workspace Data Service (Full Seed/LOV) • Incremental Application Workspace Data Service (Incremental LOV/Seed) • Application Data Service • Application Data Service with Transformation • File Prepare & Deploy
Asynchronous Migration Using Siebel Migration	Modified topic. Added a table showing when the following migration scenarios are supported: • Export Only Migration • Import Only Migration • Export and Import Migration These migration scenarios are supported, using either the Siebel Migration application or REST API, in Siebel CRM 18.11 Update and later releases.
About REST API Used for Migration Discovery and Execution	Modified topic. Descriptions of the following migration services have been updated: • Application Workspace Data Service (Full Seed /LOV) • Application Data Service • Application Data Service with Transformation
About Migrating with Siebel Migration z/OS *About REST API Used for Migration Discovery and Execution* *Siebel Migration Plan Dependencies*	Modified topics. From Siebel CRM 19.3 Update release onwards, the Siebel Migration application no longer supports the Design Repository Data Service.
Using REST API with the Migration Design Repository Data Service	Obsolete topic. The Siebel Migration application no longer supports the Design Repository Data Service.

Topic	Description
Migrating Configuration Data and Incremental Changes	Modified topic. This topic lists some important issues to note when migrating configuration data and incremental changes.

What's New in Siebel Database Upgrade Guide for DB2 for z/OS, Siebel CRM 19.1 Update

The following table lists the changes in this version of the documentation to support this release of the software.

Topic	Description
About the Siebel Database Configuration Utilities and Database Configuration Wizard *Migration Planning Using Siebel Migration*	Modified topic. As of Siebel Innovation Pack 2017, the Repository Migration Utility (dev2prod) is no longer supported. The Siebel Migration application is supported in Siebel Innovation Pack 2017 and later releases.
Modifying siebel.cfg Before Upgrading Siebel Database	New topic. Before upgrading to Siebel 17.x, Siebel 18.x or later, a number of parameters must be changed in the siebel.cfg file, otherwise the Siebel database upgrade will fail when upgrading in upgphys mode.
Generating the Runtime Repository Data	Modified topics. During the Full Publish process, certain warning errors in the log file are acceptable and can be ignored.
Incremental Migration from a Development to a Production Environment Without Using Siebel Migration	New topic. Describes how to manually apply repository and schema changes to a target environment that is not in a Repository Upgraded state.
Full RR Migration Without Using Siebel Migration	New topic. Describes how to complete a synchronous full Runtime Repository (RR) migration without using the Siebel Migration application.
Migrating Configuration Data and Incremental Changes	New topic. Highlights some important information to consider when migrating configuration data and incremental changes.

What's New in Siebel Database Upgrade Guide for DB2 for z/OS, Siebel CRM 18.12 Update

The following table lists the changes in this version of the documentation to support this release of the software.

Topic	Description
Considering Code Page Support	Modified topic. Development databases can use EBCDIC code pages. Databases with EBCDIC code pages support Merge and Full Publish functionality in a development environment upgrade.
About Migrating with Siebel Migration z/OS	Modified topic. Migrating repository or data using Siebel Migration is not the same as performing a database upgrade where you migrate your custom repository and schema from one release of Siebel CRM to a higher release level.
Before You Begin Migrating with Siebel Migration	Modified topic. It is recommended that you back up your target database before starting to migrate repository or data using Siebel Migration.
Asynchronous Migration Using Siebel Migration	New topic. Describes how to use Siebel Migration to perform an asynchronous migration.
Activating Workflows and Tasks in the Production Environment After Full Migration	New topic. Workflows and tasks must be activated in the production (target RR) environment after a full migration.
Using REST API with Siebel Migration Application	Modified topic. REST APIs can be used both before and after the repository upgrade is done.

What's New in Siebel Database Upgrade Guide for DB2 for z/OS, Siebel CRM 18.11 Update

No new features have been added to this guide for this release. This guide has been updated to fix only bugs.

Topic	Description
Migrating Siebel 18.8 Update or Later Release Repository Changes from a Development to a Production Environment	New topic. Describes how to migrate a Siebel 18.8 Update or later release development environment to a target environment.

What's New in Siebel Database Upgrade Guide for DB2 for z/OS, Siebel CRM 18.9 Update

The following table lists the changes in this version of the documentation to support this release of the software.

Topic	Description
Using REST API with Siebel Migration Application	New topic. Added information about using REST APIs with the Siebel Migration Application to do the following: • Work with connections. For more information about using REST APIs to work with connections, see *Using REST API to Configure Siebel Migration Application Connections*. • Work with migration plans. For more information about using REST APIs to work with migration plans, see *Using REST API to Configure Siebel Migration Application Migration Plans*. • Execute migration plans and get status about running migration plans. For more information about using REST APIs to execute migration plans and get status about running migration plans, see *Using REST API to Execute Siebel Migration Plans*. • Get history information about migration plans. For more information about using REST APIs to get history about migration plans, see *Using REST API to Get Siebel Migration Plan History*.
Migrating Siebel 18.8 Update or Later Release Repository Changes from a Development to a Production Environment	New topic. Added information about how to migrate a Siebel 18.8 Update or later development environment to a target environment.

What's New in Siebel Database Upgrade Guide for DB2 for z/OS, Siebel CRM 18.8 Update

The following table lists the changes in this version of the documentation to support this release of the software.

Topic	Description
Generating a Watermark	New topic. Added a new topic that provides procedures for using Siebel Migration to generate a watermark.
About the Process Flow for Migration Resources	New topic. Added a new topic that describes the new orchestration.json file that defines the process flow for all the migration resources available in the Siebel Server.
Executing a Siebel Migration Plan	Modified topic. Added information about the Database Encoding parameter.
Viewing Migration History and Log Files	Modified topic. Added information about viewing the package filename in the History tab.
About Migrating with Siebel Migration z/OS	Modified topic. Added information about export and import asynchronous migration and information about the manifest file. Added information about configuring the Migration Package Location in the Siebel Management Console and added additional information about configuring the deployment package with Application Deployment Manager.
About REST API Used for Migration Discovery and Execution	Modified topic. Added information about how the File Prepare and Deploy Service reads the watermark file and what the service does with that data.

Additional Changes

This guide has been has been updated to correct or remove obsolete product and component terms.

2 About Siebel Database Upgrade Topics

About Siebel Database Upgrade Topics

This chapter provides general information about the guide and how to use the Siebel database upgrade topics. It includes the following topics:

- *How to Use This Guide*
- *How the Upgrade Topics Are Organized*
- *About the Applicability of Siebel Database Upgrade Topics*
- *Naming Conventions Used in This Guide*
- *About File Paths and Commands in Upgrade Topics*

How to Use This Guide

To perform an upgrade to the latest version of Oracle's Siebel Business Applications on the IBM DB2 for z/OS platform, you must use this guide and *Siebel Database Upgrade Guide* on the *Siebel Bookshelf* .

> **Note:** The Siebel Bookshelf is available on Oracle Technology Network (http://www.oracle.com/technetwork/indexes/documentation/index.html) and Oracle Software Delivery Cloud. It might also be installed locally on your intranet or on a network location.

This guide describes the upgrade process on a z/OS platform and provides information on tasks that are specific to this platform. To complete your upgrade, however, you must also perform certain tasks outlined in *Siebel Database Upgrade Guide* .

This guide directs you to *Siebel Database Upgrade Guide* at the relevant points during the upgrade process. Topics in *Siebel Database Upgrade Guide* that apply when performing an upgrade of Siebel Business Applications on z/OS contain a Platforms statement similar to the following:

Platforms. Microsoft Windows, UNIX, IBM z/OS.

How the Upgrade Topics Are Organized

Use the roadmaps and process topics in *How to Perform a Siebel Database Upgrade* to guide you through the upgrade process. These topics provide a checklist of all the steps required to complete a particular type of upgrade, in the order in which you must perform them. Each step includes a link to a topic that explains how to complete the step.

The remaining chapters of the guide are organized according to the major phases of the upgrade. Each chapter includes the specific upgrade tasks you must perform for that portion of the upgrade as well as conceptual and process information relating to those tasks.

CAUTION: Topics in the chapters might not follow the order you perform them during the upgrade and, depending on your upgrade path, all topics might not apply. You must use the roadmap for your upgrade to determine the required and optional steps and their sequence. If you do not, you are likely to experience difficulties in completing your upgrade.

About the Applicability of Siebel Database Upgrade Topics

The upgrade path and environment to which a topic applies is listed at the beginning of each topic. The following table lists the applicability categories and their meaning. For each topic, only the relevant categories are listed.

Applicability Category	Meaning
Upgrades	Lists the upgrades to which the topic applies. For example, ***Upgrades: 8.0*** means the topic applies to upgrades from 8.0 only. The topic does ***not*** apply to upgrades from 8.2.x or later.
Environments	Lists the Siebel environments to which the topic applies. For example, ***Environments: Development environment only*** means the topic applies only to a development environment upgrade. For more information on Siebel environments, see *About Siebel Upgrade Environments*.

Naming Conventions Used in This Guide

This guide follows several naming conventions:

- ***DB2*** or ***DB2 for z/OS*** refers to IBM DB2 UDB for z/OS.
- Current release means the currently shipping release of the Siebel Business Applications provided by Oracle.
- Siebel CRM Release 7.***x*** refers collectively to Siebel CRM Release 7.8.2 (SIA) from which you can upgrade directly to the latest version of Siebel CRM.
- Siebel CRM Release 7.***x*** does not refer to versions of Siebel CRM earlier than version 7.5.3. You cannot upgrade directly from pre-7.8.2 versions of Siebel CRM to Siebel 2019 or later.
- The term Windows refers to all Microsoft Windows operating systems listed as supported for this release on the Certifications tab on My Oracle Support.
- The term UNIX refers to all forms of the UNIX operating system listed as supported for this release on the Certifications tab on My Oracle Support. UNIX is a Siebel Enterprise Server software platform.

Note: Linux is treated in this guide as a UNIX operating system. Specific supported Linux operating systems are listed on the Certifications tab on My Oracle Support.

- The term IBM z/OS refers to all the IBM mainframe operating systems, collectively referred to as z/OS, which are supported for this release as described on the Certifications tab on My Oracle Support. The z/OS operating system is a Siebel database software platform.

About File Paths and Commands in Upgrade Topics

Environment variables and path placeholders for both Windows and UNIX paths are used throughout this guide. You must enter UNIX commands in a Korn shell. Enter Windows commands in a Windows Command Prompt window.

Windows Paths

The following path conventions specify file system locations in topics:

- **SIEBEL_ROOT** is the absolute path to the Siebel Server installation directory. When you install a Siebel Server, the installation program queries for the Siebel CRM installation path and installs the Siebel Server in a subdirectory of this path called **siebsrvr**. For example, if you specified **C:\sba811** as the installation directory (this is the default), then **SIEBEL_ROOT** is **C:\sba811\siebsrvr**.
- **DBSRVR_ROOT** is the absolute path to the Siebel Database Configuration Utilities files installation directory on the Siebel Server. When you install the Siebel Database Configuration Utilities, the installation program queries for the Siebel Server installation directory and then installs the Siebel Database Configuration Utilities files at the same level in a subdirectory called **dbsrvr**. For example, if **SIEBEL_ROOT** is **C:\sba811\siebsrvr**, then **DBSRVR_ROOT** is **C:\sba811\dbsrvr**.

UNIX Paths

The following environment variables and path conventions specify file system locations in the topics in this guide:

- **SIEBEL_ROOT** is an environment variable that defines the absolute path of the Siebel Server installation directory. When you install a Siebel Server, the installation program queries for the installation directory and installs the Siebel Server in a subdirectory of this path called **siebsrvr**. For example, if you specified **usr/siebel** as the installation directory, then **$SIEBEL_ROOT** is **/usr/siebel/siebsrvr**.

  The definition of **SIEBEL_ROOT** and other environment variables required for doing an upgrade are located in **/siebsrvr/siebenv.sh**. The Siebel Server installation script sets environment variable definitions in this shell script. Do not edit or delete this file.

  Tip: Before performing command line procedures, source siebenv.csh or siebenv.sh first. This refreshes the environment variables required to run commands.

- DBSRVR_ROOT is a path convention used in this guide. It is not an environment variable and is not defined in **siebenv.csh** or **siebenv.sh**.

  DBSRVR_ROOT is the absolute path to the Siebel Database Configuration Utilities files on the Siebel Server. When you install the Siebel Database Configuration Utilities, the installation program queries for the Siebel Server installation directory and installs the Siebel Database Configuration Utilities files at the same level in a subdirectory called **dbsrvr**. For example, if **$SIEBEL_ROOT** is **usr/siebel/siebsrvr**, then DBSRVR_ROOT is **/usr/siebel/dbsrvr**.

- Run UNIX scripts in a C or Korn shell.

Commands

Procedural steps that ask you to execute a command must be performed as follows, unless specified otherwise:

- Windows. Open a Command Prompt window and use the cd command to make the specified directory the current directory. Enter the command.

  Do not use the Windows File Explorer to navigate to the directory and do not run the command by entering it in the Run window in the Start Menu.
- UNIX. In a shell window, make the specified directory the current directory, source the siebenv script, then enter the command.

Use lowercase for all filenames, directory names, path names, parameters, flags, and command-line commands, unless you are instructed otherwise.

3 How the Siebel Database Upgrade Works

How the Siebel Database Upgrade Works

This chapter provides an overview of the Siebel database upgrade process and upgrade environments, and describes the utility used to perform the upgrade. Also review topics relevant to the z/OS database upgrade in the chapters in *Siebel Database Upgrade Guide* that provide an overview of the upgrade process. This chapter includes the following topics:

- *About Supported Siebel Upgrade Paths*
- *Supported Upgrade Paths for Siebel 2019*
- *Types of Siebel Database Upgrades*
- *Types of Siebel Database Upgrades*
- *About Using Oracle's Advanced Customer Services*
- *About Unicode Support*
- *About Siebel Upgrade Environments*
- *About the z/OS Upgrade*
- *About the Staging Database*
- *About Siebel Additive Schema Upgrade Changes*
- *About the Siebel Database Upgrade Process*
- *About the Siebel Database Configuration Utilities and Database Configuration Wizard*
- *About the Siebel Upgrade Wizard and Driver Files*
- *Job Flow of a Production Database Upgrade*
- *About the Override File*

About Supported Siebel Upgrade Paths

Upgrades: All upgrades.

Environments: All environments

Performing a database upgrade refers to migrating your Siebel custom repository and data schema from one release of Siebel CRM to a higher release. This guide describes how to upgrade the following types of installations:

- A Siebel CRM 7.*x* installation to Siebel 2019.

  In this version of the guide, Release 7.*x* refers collectively to all versions of Siebel CRM Release 7.8.2 (SIA) from which you can upgrade directly to Siebel 2019.

- A Siebel CRM 8.0 installation to Siebel 2019.

> **Note:** If you are considering migrating your Siebel CRM 8.x z/OS database to Unicode format, be aware that you cannot upgrade to a later release of Siebel CRM using the standard upgrade procedure. If you migrate your Siebel z/OS database to Unicode format, you can upgrade to the latest Siebel update. However, Oracle will support Unicode database upgrades from one major release of Siebel CRM to another, or incremental Unicode upgrades, in future updates, if required.

- A Siebel CRM 8.1.1.x installation to Siebel 2019.

This guide does not cover the following specific upgrade paths or infrastructure changes. For help with these tasks, contact your Oracle sales representative for Oracle Advanced Customer Services to request assistance:

- Direct upgrades to Siebel CRM version 8.1 from Siebel CRM versions earlier than 7.5.3 are not supported; you must first upgrade to Siebel CRM 7.8.2, or a later release.
- Direct upgrades to Siebel CRM version 8.2.2.x are not supported.
- Changing operating system type during an upgrade, for example changing from Windows to UNIX.
- Changing database platform type during an upgrade, for example changing from Oracle 8i to IBM DB2.
- Migrating to Unicode.
- Migrating from Siebel Industry Solutions or Siebel Financial Services applications to Siebel Business Applications.
- Upgrading from one base language to another. To achieve similar results, upgrade your existing base language and install the Siebel language pack for the desired language.

Supported Upgrade Paths for Siebel 2019

The following table lists supported upgrade paths for Siebel 2019 (Siebel CRM 19.9 Update) on the IBM DB2 for z/OS database platform. The repository for the current release is SIA in all cases.

Siebel Repository consists of a Runtime Repository, which contains the compiled repository definition. This updated repository is available for all of the supported Siebel languages. Siebel clients and servers read the compiled definition from the Runtime Repository stored in the database. The Runtime Repository is required for either of the following upgrade tasks summarized in this topic.

- If you run incremental repository merge for an existing Siebel database.
- If you perform a full database upgrade for an existing Siebel database.

You also require the Siebel Runtime Repository to run Siebel Business Applications after you install a new Siebel database for Siebel CRM 19.9 Update. For installation information, see *Siebel Installation Guide* for the operating system you are using.

Current Version	Upgrade Version	Upgrade Approach	Upgrade Tasks
Siebel 7.5.3 (SEA repository or SIA repository) and Siebel 7.7.2 (SEA repository or SIA repository)	Siebel CRM 19.9 Update	• New installation of Siebel 2019 (19.9 Update) for upgrade. • Full database upgrade. • Two-step repository upgrade.	Perform the following two-step repository upgrade: • Upgrade Siebel CRM version 7.5.3 and Siebel CRM version 7.7.2 (SEA repository or SIA repository) to Siebel CRM version 8.1.1 (SEA repository or SIA repository).

Current Version	Upgrade Version	Upgrade Approach	Upgrade Tasks
			• Upgrade Siebel CRM version 8.1.1 (SEA repository or SIA repository) to Siebel 2019. **Note:** Use incremental repository merge for upgrades from Siebel CRM version 8.1.1 (SIA repository).
Siebel 7.8.2 (SIA repository and SEA repository) Siebel 8.0 (SIA repository and SEA repository) Siebel 8.1.1.0 through 8.1.1.7 (SEA repository)	Siebel CRM 19.9 Update	• New installation of Siebel 2019 (19.9 Update) for upgrade. • Full database upgrade. • Single-step upgrade.	• Perform a full database upgrade. A Development environment upgrade and a Production environment upgrade is required. • You can directly upgrade to Siebel 2019. It is a single-step upgrade and post-upgrade process. • The New Customer repository, generated through a three-way repository merge, contains all the content from the Siebel 2019. For more information on repository merge, see *Performing the Siebel Repository Merge*.
Siebel 8.1.1.0 through 8.1.1.14 (SIA repository)	Siebel CRM 19.9 Update	• Migration installation of Siebel CRM version 17.0. • Migration installation of Siebel 2019 (19.9 Update). • Incremental repository merge.	• Run the Siebel 2019 (19.9 Update) installer to install Siebel 2019 (19.9 Update) binaries. • Use incremental repository merge to bring the repository to 19.9 Update. **Note:** This step is mandatory to be able to run Siebel Business Applications in the current release. • For more information on incremental repository merge, see *Performing the Siebel Incremental Repository Merge*.
Siebel CRM version 8.2 (SIA repository) Siebel CRM version 8.2.1 (SIA repository)	Siebel CRM 19.9 Update	• New installation of Siebel 2019 (19.9 Update) for upgrade. • Full database upgrade. • Single-step repository upgrade.	• Install the Siebel 2019 (19.9 Update) binary files. • Perform a full database upgrade. A Development environment upgrade and a Production environment upgrade are required. • Upgrade directly to Siebel CRM 19.9 Update. It is a single-step repository upgrade and postupgrade process. • The New Customer Repository generated through a three-way repository merge contains all of the innovation pack content of Siebel CRM 19.9 Update. • For more information about repository merge, see *Performing*

Current Version	Upgrade Version	Upgrade Approach	Upgrade Tasks
			the Siebel Incremental Repository Merge.
Siebel CRM version 8.2.2.0 through version 8.2.2.14 (SIA repository)	Siebel CRM 19.9 Update	• Migration installation of Siebel CRM version 17.0. • Migration installation of Siebel 2019 (19.9 Update). • Incremental repository merge.	• Install the Siebel 2019 (19.9 Update) binary files. • Use incremental repository merge to bring the repository to Siebel 2019 or later. **Note:** This step is mandatory to be able to run Siebel Business Applications in the current release. • For more information on incremental repository merge, see *Performing the Siebel Incremental Repository Merge*.
Siebel CRM version 15.0 through 15.4	Siebel CRM 19.9 Update	• Migration installation of Siebel CRM version 17.0. • Migration Installation of Siebel 2019 (19.9 Update). • Incremental repository merge.	• Use incremental repository merge to bring the repository to Siebel 2019 or later. **Note:** This step is mandatory to be able to run Siebel Business Applications in the current release. • For more information on incremental repository merge, see *Performing the Siebel Incremental Repository Merge*.
Siebel CRM version 15.5 and later patchsets	Siebel CRM 19.9 Update	• Migration installation of Siebel CRM version 17.0. • Migration Installation of Siebel 2019 (19.9 Update). • Incremental repository merge.	• Install the Siebel 2019 (19.9 Update) binary files. • Use incremental repository merge to bring the repository to Siebel 2019. **Note:** This step is mandatory to be able to run Siebel Business Applications in the current release. • For more information on incremental repository merge, see *Performing the Siebel Incremental Repository Merge*.
Siebel CRM version 16.0 and later patchsets of version 16.0	Siebel CRM 19.9 Update	• Migration installation of Siebel CRM version 17.0. • Migration Installation of Siebel 2019 (19.9 Update). • Incremental repository merge.	• Install the Siebel 2019 (19.9 Update) binary files. • Use incremental repository merge to bring the repository to Siebel 2019. **Note:** This step is mandatory to be able to run Siebel Business Applications in the current release.

Current Version	Upgrade Version	Upgrade Approach	Upgrade Tasks
			• For more information on incremental repository merge, see *Performing the Siebel Incremental Repository Merge*.
Siebel CRM version 17.0 and 18.x	Siebel CRM 19.9 Update	Single-step repository upgrade.	• Install the Siebel 2019 (19.9 Update) binary files. • Upgrade directly to Siebel CRM 19.9 Update. It is a single-step repository upgrade and postupgrade process.

Types of Siebel Database Upgrades

This topic describes the different methods available to upgrade a Siebel Database. The approach you use is determined by your current version of Siebel CRM. Upgrades can be either:

- Single-step or two-step repository upgrades
- Full database upgrades or patch installations with incremental repository merge

Each of these upgrade methods is explained as follows.

Single-Step and Two-Step Siebel Repository Upgrades

Before the release of Siebel CRM version 8.1.1, two Siebel repositories supported Siebel applications: Siebel Business Applications (SEA) repository, and Siebel Industry Applications (SIA) repository. The Siebel Industry Applications (SIA) data model is physically a superset of the Siebel Enterprise Application (SEA) data model. The SIA data model has more tables, more columns in the same tables, and more indexes than the SEA data model, but it does not exclude any tables, columns or indexes from the SEA version.

Since Siebel CRM version 8.1.1, only the SIA repository is supported. On z/OS, an upgrade process enabling a direct, single-step upgrade from SEA to SIA repositories is available only from 8.1.1.x releases. Upgrades from Siebel CRM 7.5.3 (SEA) through Siebel CRM version 8.0 (SEA) require a two-step upgrade process. For additional information, see the topic about single-step repository upgrades in *Siebel Database Upgrade Guide* .

Patch Releases and Incremental Repository Merge

If you are upgrading from one major release of Siebel CRM to another, for example, from Siebel 8.0 to Siebel 8.2, then you must perform a full database upgrade. If you are upgrading within the same Siebel release, then you can upgrade by performing a patch release installation.

Siebel patch releases are applied onto existing patch releases, both of which are part of the same major Siebel CRM release. For example, you can install Siebel 2019 as a patch release into an existing installation of Siebel CRM version 8.1.1 or 8.1.1.x. For more information on patch releases, see *Siebel Installation Guide* for the operating system you are using.

If you install the current release as a patch installation, then you must use the Incremental Repository Merge feature to update your Siebel database to the current release. Incremental Repository Merge is a mechanism which allows you to incrementally upgrade your custom repository data (including schema and seed data) from Siebel CRM version 8.1.1.x (SIA Fix Pack) to Siebel 2019 (SIA innovation pack). On the DB2 for z/OS platform, incremental repository merge functionality is not supported for upgrades to Siebel Release 8.2. For more information about the incremental repository merge process, see the chapter about performing an incremental repository merge in *Siebel Database Upgrade Guide* and *Performing the Siebel Incremental Repository Merge*.

Note: The Siebel CRM version repositories contain the cumulative repository, schema, and seed data for all new content (such as Release Features) developed up to Siebel 2019 or later.

About Using Oracle's Advanced Customer Services

The Siebel CRM upgrade process on DB2 for z/OS is designed to run in all standard Siebel implementations. It is built on the assumption that data exists in all Siebel tables and that all this data must be migrated.

In reality, your implementation has probably been customized to suit your business so, for example, you might not use all of the Siebel tables shipped or they might contain varying amounts of data. To accommodate this fact, the upgrade process is customizable, for example, you can eliminate upgrade jobs that run on empty tables, or you can choose to run unload jobs simultaneously.

Global Customer Support provides support for all standard z/OS upgrades but it does not support customized upgrades. If you require help with a standard upgrade, create a service request (SR) on My Oracle Support. You can log service requests by accessing My Oracle Support (Service Request tab), or by using your existing phone support numbers to contact Oracle Global Customer Support.

Customizing the upgrade scripts is a complex process and, for this reason, if you want to customize the upgrade scripts, you must contact your Oracle sales representative for Oracle Advanced Customer Services to request assistance.

This guide describes a number of upgrade customization tasks that you can perform where the assistance of Oracle's Advanced Customer Services is ***required***.

CAUTION: You must contact Oracle's Advanced Customer Services before performing tasks where such help is noted as a ***requirement***. If you do not, you might invalidate your support agreement.

This guide also describes tasks where enlisting the help of Oracle's Advanced Customer Services is ***recommended***. Failure to contact Oracle's Advanced Customer Services for help with these tasks does not have implications for continuing support.

Where a task requires the help of Oracle's Advanced Customer Services, this requirement is indicated in the relevant topic.

About Unicode Support

Previous releases of Siebel Business Applications supported ASCII- and EBCDIC-based coded character set IDs (CCSIDs) on DB2 for z/OS. Since Siebel CRM 8.0, Unicode is also supported on DB2 for z/OS version 8 and later releases. For a list of supported languages and code pages, see the Certifications tab on My Oracle Support.

You can migrate your Siebel database from an EBCDIC or ASCII code page to a Unicode encoding system but this process is not part of the standard Siebel CRM upgrade procedure. A separate migration procedure for migrating to Unicode is performed on the DB2 host after you have upgraded to the current release of Siebel CRM. For information on migrating to Unicode, see *Implementing Siebel Business Applications on DB2 for z/OS* .

Note: If you are considering migrating your Siebel CRM 8.x z/OS database to Unicode format, be aware that you cannot upgrade to a later release of Siebel CRM using the standard upgrade procedure. If you migrate your Siebel z/OS database to Unicode format, you can upgrade to the latest patchset. However, Oracle will support Unicode database upgrades from one major release of Siebel CRM to another, or incremental Unicode upgrades, in future innovation packs, if required.

About Siebel Upgrade Environments

Upgrades: All upgrades.

Environments: All environments

This guide describes how to upgrade three database environments:

- Development environment
- Production test environment
- Production environment

Detailed information on each database environment is provided in the remainder of this topic. For an overview of the steps involved in upgrading each database environment, see the chapter in *Siebel Database Upgrade Guide* that provides an overview of the upgrade process.

Development Environment

The development environment is where developers use Siebel Tools to customize Siebel Business Applications. The development environment upgrade merges these customizations with the new Siebel release. The merged repository and schema definitions become inputs to the production upgrade.

A development environment contains the following elements:

- Siebel Server
- Siebel Gateway
- Siebel Database Configuration Utilities installed on the same computer as the Siebel Server
- RDBMS server and Siebel database
- Siebel Application Interface
- Siebel Tools installed on workstations running a supported Windows environment. This includes the local database running on developers' Mobile Web Clients.
- Siebel Business Applications and test data required to verify the basic function of a Siebel Runtime Repository.

Production Test Environment

The production test environment is where you test the upgraded release to validate its function and performance before deploying it to users. This is also where you tune the upgrade process to minimize the time required to perform your production upgrade.

By tuning the production upgrade scripts in a test environment, you can significantly reduce the time required to complete the production upgrade. For this reason, the production test environment database must contain the same data volume and topography as your production database.

This environment includes the following elements:

- Siebel Enterprise Server, including at least one Siebel Server and an RDBMS server and Siebel database
- Siebel Gateway
- Siebel Database Configuration Utilities installed on the same computer as the Siebel Server
- Siebel Application Interface
- All the Siebel Business Applications currently installed in your production environment
- A copy of the Siebel database installed in your production environment

You perform the following processes in the production test environment:

- Test the upgraded release to validate its function and performance before deploying it to users.
- Tune the upgrade process to minimize the time required to perform your production upgrade.

Tuning the upgrade scripts can significantly reduce the time required to complete the production upgrade.

Production Environment

The production environment is your live business environment, where your internal and external users interact with applications and generate actual business data. The production environment includes all your Siebel Enterprise Servers worldwide.

The upgrade process assumes all production environment databases are completely separate from the development environment and production test environment databases.

Oracle provides these tools to help you transition from production test to production:

- Siebel Application Deployment Manager (ADM). This application migrates administrative data such as lists of values (LOVs) from the production test environment to the production environment. For further information about ADM, see *Siebel Application Deployment Manager Guide* .
- Siebel Anywhere. This application builds distribution kits for remote users. For information about Siebel Anywhere, see *Siebel Anywhere Administration Guide* .

Mapping Your Environments

You might have more or fewer environments than those described *About Siebel Upgrade Environments*. The following table gives recommendations for mapping your environments to the ones described in this guide.

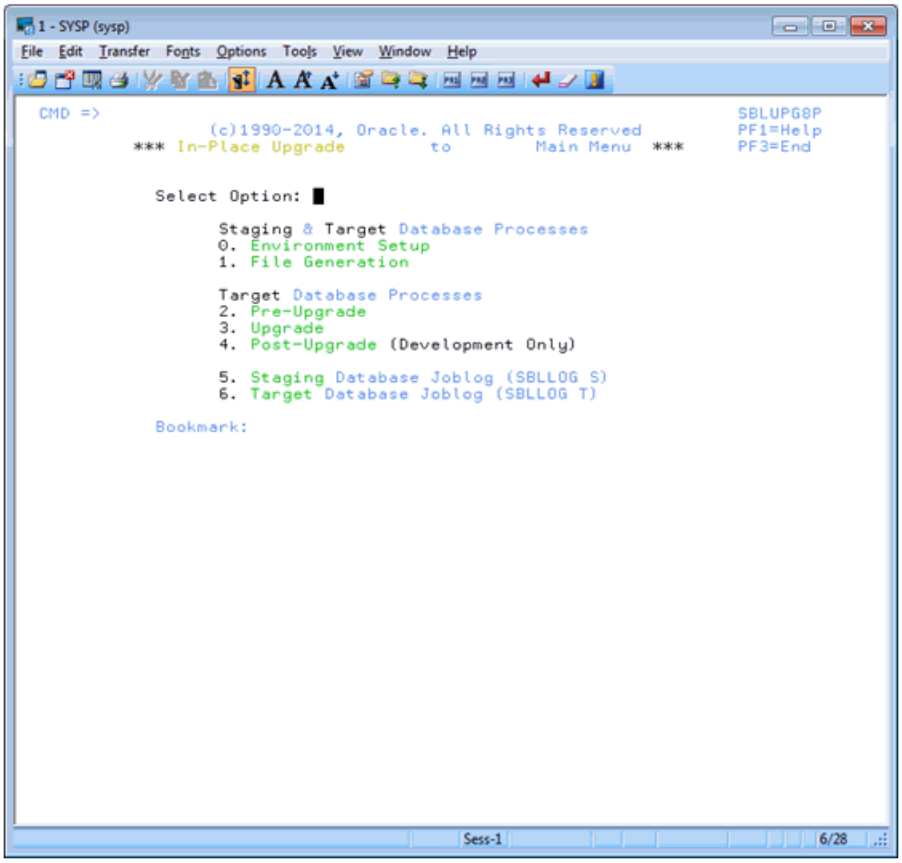
Environment Description	Recommended Upgrade
The environment has the following characteristics: • It is used primarily for development with Siebel Tools. • The Siebel database is a subset of your production database. • The environment is not used for technical support or training. Developers are usually installed as Mobile Web Clients.	Development environment upgrade.
The environment has the following characteristics: • It is intended for testing customizations before deploying them. • It is where you tune your upgrade SQL files to minimize production upgrade time. • There might be multiple upstream environments in addition to the production test environment. For example, these could include environments used by a product management group, technical support, and quality assurance.	Production test environment upgrade.
The environment is used for live business transactions by both local and remote users.	Production environment upgrade.

About the z/OS Upgrade

Historically, Siebel production environment upgrades were primarily performed on the z/OS host (mainframe-centric) but you could choose to upgrade your development environment using either a mainframe-centric or midtier-centric process. Since Siebel CRM 8.0, only mainframe-centric development environment upgrades are supported for DB2 for z/OS. In a mainframe-centric upgrade, all upgrade DDL statements (CREATE, DROP, ALTER, and GRANT) and DML (INSERT, UPDATE, DELETE, and SELECT) are executed on the mainframe host.

You initiate a Siebel database upgrade on DB2 for z/OS from a midtier platform (Windows or UNIX) using the Siebel Upgrade Wizard, which automatically generates the DDL and DML files necessary for the upgrade. The Siebel Upgrade Wizard is also run from the midtier to import seed data and the upgraded repository.

You must manually transfer the DDL and the data migration DML files generated on the midtier platform by the Upgrade Wizard to the DB2 host where they are unpacked and applied; this process is guided on the mainframe using REXX execs and ISPF panels. This manual portion of the upgrade, which runs directly on the z/OS host, allows you to tailor the upgrade process to suit your hardware environment and to minimize downtime. The following image shows the In-Place Upgrade Main Menu on the z/OS host.



Each ISPF Upgrade panel has a bookmark label and message, indicating the last step completed or currently in progress. These bookmarks guide you through the upgrade process; you cannot rerun jobs that have completed successfully or run jobs out of sequence.

About the Staging Database

Upgrades: All upgrades.

Environments: All environments

Previously, for recovery purposes, in-place upgrades were not supported for Siebel mainframe-centric upgrades (an in-place upgrade occurs when upgrade changes are made directly to the existing database). Instead, a target database was built for the new release and data was unloaded from the existing source database and migrated in the appropriate format to the upgraded target database. The source database was not upgraded, although minor modifications were made to it during the upgrade process.

Since Siebel CRM 8.0, the production database is upgraded in-place. However, to accommodate host customers requirements for high-system-availability, a staging database is first created which is used to generate all the z/OS upgrade components (for example, the JCL and SQL upgrade files). The staging database allows you to generate all the midtier upgrade files and to build the JCL in advance of the actual database upgrade; this removes these steps from the critical upgrade path and minimizes system downtime.

The manual parts of the upgrade are run against the staging database. The automatic parts of the upgrade are run directly against the development or production database being upgraded (the target database).

The staging database is created from the existing development or production database that is to be upgraded (the target database). The target database DDL, and the storage control file specifying the physical database layout, are extracted and then executed in a separate DB2 subsystem to create the staging database. The staging database therefore contains the same schema and tables as the database to be upgraded, but it does not contain data.

About Siebel Additive Schema Upgrade Changes

Upgrades: All upgrades.

Environments: Production test, production.

Since Siebel CRM 8.0, you can apply additive and nonadditive schema changes separately to the production database in order to reduce the downtime for the in-place upgrade.

Nonadditive schema changes impact the running application data model and require shutting down the production database. Additive schema changes are nondisruptive; these changes do not impact Siebel application usage. Therefore, you can apply additive schema changes to the live production database before you perform the in-place upgrade. This reduces the number of steps that must be performed when the database is offline and this reduces database downtime.

This is an optional process; if you do not apply the additive schema changes before you perform the production database in-place upgrade, they are applied in one step with the nonadditive upgrade changes.

Types of Changes

The additive schema files generated by the Upgrade Wizard make the following types of schema changes to support the new release. These changes do not adversely affect data integrity or database normalization:

- Creating new tables.
- Adding columns to an existing table. The column must either be specified as null, or if the column is not null, it must have a specified default value.
- Creating nonunique indexes on new tables.
- Creating or altering a unique index on an existing table provided the CLUSTER attribute is not specified for the index.
- Increasing column sizes for numeric or varchar columns. The column must not be the basis for a drop-down list. Also, the resultant cumulative row size must not be larger than the data page size.
- Changing a not-null column to null.
- Changing a data type from char to varchar.

About Index Creation During the Additive Upgrade Process

Although additive schema changes are generally nondisruptive, index creation during the additive upgrade process can impact Siebel application usage if both of the following conditions exist:

- Indexes are specified with the DEFINE parameter set to YES
- The DEFER YES parameter is *not* specified for the index

If data exists in a table for which an index is being created, DB2 changes the DEFINE parameter value from NO to YES, and issues a warning message. If the DEFER YES parameter is not also specified for the index, the index is populated while it is being created, and locks are placed on the associated table until the process is completed, preventing updates being made to the table.

In these cases, change the index definition to DEFINE YES, DEFER YES; this ensures the index is not populated while it is being created, so the associated table is not locked. You can run the IBM DB2 REBUILD INDEX utility (DSNUTILB) to populate the index at a later time when performing regularly scheduled maintenance. For additional information on applying additive index changes to the target database, see *Applying the Additive Changes in One Job*.

Implementation of Additive Changes

The additive and nonadditive schema upgrade files are generated separately by the Upgrade Wizard in the output directory you specify when you run the Database Configuration Wizard. Additive schema filenames include the ***additive*** identifier. Review these files to determine the schema changes that are applied by the additive schema process and edit them as necessary, for example, verify that they do not make changes that conflict with customizations.

Additive schema changes must first be applied in a production test environment which has the same data as the production environment, or data that is statistically similar to the data in the production environment. After generating and applying the additive schema files to the production test database, make sure users in the test environment can enter, query and delete records to check that applying additive schema changes to the database does not affect the way in which the existing version of the Siebel application works.

About the Siebel Database Upgrade Process

Upgrades: All upgrades.

Environments: All environments

Upgrading to a new release involves two aspects:

- The order in which to upgrade your environments
- The flow of the upgrade process within each environment

Environment Upgrade Order

If you have a development environment, you must upgrade it first. During this phase, your customizations are merged with the new Siebel release. A merged repository file and database schema file are created and become inputs to the production test environment upgrade and production upgrade.

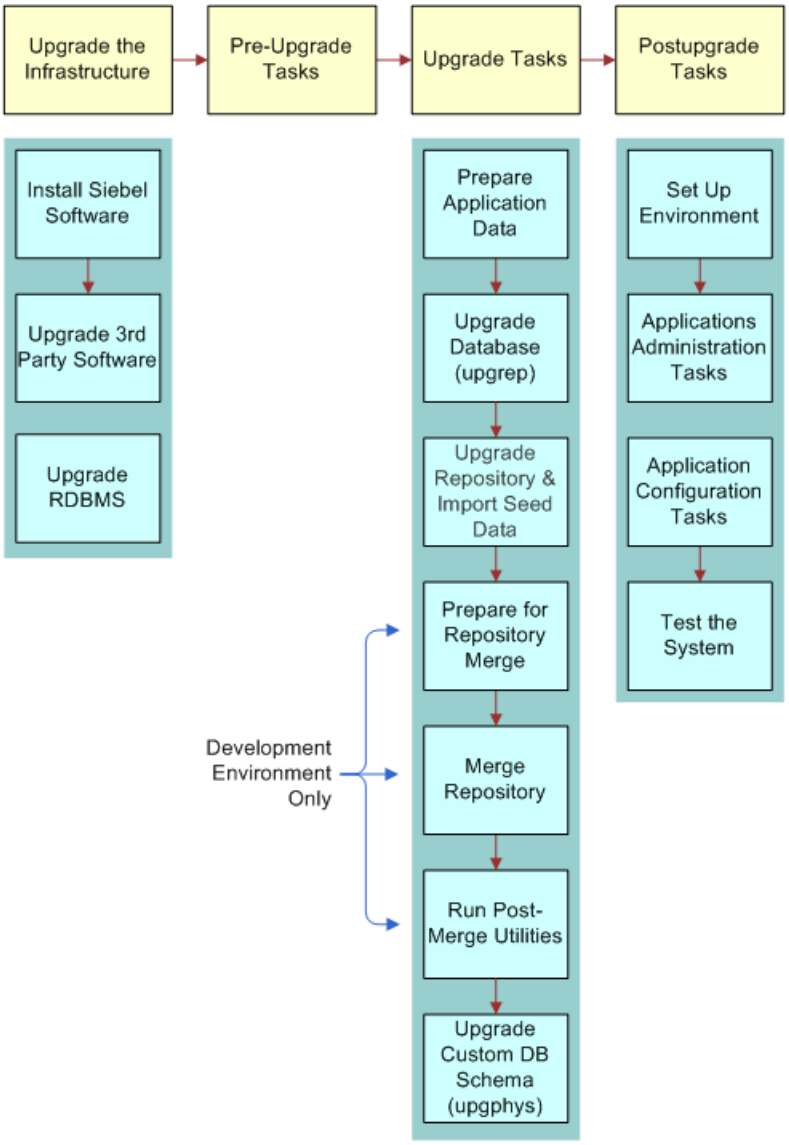
If you do not have a development environment or have not customized your repository, no repository merge is required. You can use the repository and schema definition files included in the new release to upgrade your production test environment and production environment.

Flow of the Upgrade Within an Environment

The basic flow of the upgrade process is shown in the following image, and includes the following steps:

1. *Upgrade the Infrastructure*
    - Install Siebel software.
    - Upgrade 3rd party software.
    - Upgrade RDBMS.
2. *Perform Preupgrade Tasks*
3. *Perform Upgrade Tasks (Development Environment)*, *Perform Upgrade Tasks (Production Test Environment)* *Perform Upgrade Tasks (Production Environment)*
    - Prepare application data.
    - Upgrade database (upgrep)
    - Upgrade repository and import seed data.
    - Prepare for repository merge.
    - Merge repository.
    - Run post-merge utilities.
    - Upgrade custom database schema (upgphys)
4. *Perform Postupgrade Tasks*
    - Set up environment.
    - Application administration tasks.
    - Application configuration tasks.
    - Test the system.

Note: In production test environment and production environment upgrades, the upgrep + upgphys steps are run together and there are several additional deployment steps.



Upgrade the Infrastructure

The first phase is to upgrade your hardware and software to meet system and implementation requirements, which includes upgrading the Siebel Enterprise Server to the new release. This action upgrades the Siebel Servers and provides the programs, scripts, input files, and other files required to merge the repository and upgrade the Siebel database. For information on how to upgrade the infrastructure, see *Siebel Installation Guide* for the operating system you are using.

Perform Preupgrade Tasks

This phase prepares the Siebel database for upgrade and includes such tasks as closing database connections, clearing pending workflow tasks, disabling customized triggers and editing and validating the storage control file.

Note: The Siebel upgrade process is not designed to support custom database triggers. If you have created customized triggers for the Siebel schema to be upgraded, you must remove them before starting the Siebel upgrade process. You can re-create these objects once the Siebel upgrade completes successfully.

Perform Upgrade Tasks (Development Environment)

This phase merges your customizations into the new release. This phase also upgrades the development environment database and includes these tasks:

- Prepare application data. These tasks prepare test data for migration.
- Upgrade database (upgrep). Run the Database Configuration Wizard in upgrep mode, selecting the zSeries Staging of Files for Upgrade option. This generates the files required to build the staging database and generate the upgrade files required to perform the in-place upgrade of the database.
- Perform the in-place upgrade of the database. During this phase, a basic upgrade of the Siebel database schema is performed and repositories are loaded to prepare for the repository merge.

The upgrep mode makes the following changes:

- Drops interface tables and database triggers
- Populates columns that must change from NULL to NOT NULL
- Creates new tables. Merges existing tables.
- Prepares for index creation. Verifies that there are no unique key violations.
- Creates indexes
- Imports seed data
- Imports the Prior Siebel Repository, the New Siebel Repository, and the New Customer Repository
- Makes modifications to repository objects to prepare for the repository merge
- Updates primary children foreign key references
- Performs miscellaneous file actions
- Merge repository. You use Siebel Tools to merge your existing repository with the repository in the new release. During the repository merge, objects from the Prior Siebel Repository, the Prior Customer Repository, and the New Siebel Repository are compared to identify the total set of object differences. The process also determines how conflicts between repository changes are resolved as they are merged into the New Customer Repository.
- Run postmerge utilities. You use Siebel Tools to run a set of utilities that examine the merged repository. The utilities analyze your customizations to applets and views, and apply changes to them as required to conform to the user interface in the new release.
- Upgrade database (upgphys). You run the Database Configuration Wizard in upgphys mode. It further upgrades the Siebel database with changes resulting from the repository merge and completes the database upgrade.

  The Database Configuration Wizard also generates the customer repository definition file and logical schema definition file that are used as input to the production test environment and production upgrades.

  Specifically, this mode performs the following tasks:

  - Synchronizes the Siebel database schema to the logical schema definition in the merged repository.

Note: During the synchronization process, custom columns in the Siebel Schema that are not in the Siebel Repository are not removed but custom indexes in the Siebel Schema that are not in the Siebel Repository are removed.

- Exports repository object definitions to a file, custrep.dat, and exports the logical schema definition to a file, schema.ddl
  These two files are used as input to the production upgrades.
- Renames the New Customer Repository to Siebel Repository
- Updates the schema version in **S_APP_VER**

Perform Upgrade Tasks (Production Test Environment)

This phase upgrades a production test environment Siebel database to the new release allowing you to test how customizations work with the new release and to tune the upgrade scripts.

CAUTION: You are required to contact your Oracle sales representative for Oracle Advanced Customer Services to request assistance with tuning your upgrade scripts. If you do not, you might invalidate your support agreement.

This phase includes the following tasks:

- Prepare application data. These tasks are about preparing application data for migration.
- Prepare for Production Upgrade (Upgrades from 7.5.3 only): Run the Database Configuration Wizard in Prepare for Production Upgrade mode. This mode compares the repository schema and the physical database schema and generates a file, SCINDX.SQL, which is used to remove obsolete indexes. SCINDX.SQL lists indexes present in the physical schema that are not present in the repository schema.

  Note: You must define an ODBC connection to the development environment database before performing this upgrade step.

- Upgrade database (upgrep + upgphys). Run the Database Configuration Wizard in upgrep + upgphys mode, selecting the zSeries Staging of Files for Upgrade option. This generates the files required to build the staging database and generate the upgrade files required to perform the in-place upgrade of the database. The additive and nonadditive schema upgrade files are generated separately.
- (Optional) Apply the additive upgrade files to upgrade the database. This is a nondisruptive upgrade process.
- Perform the in-place upgrade of the database. The following changes are made during this phase of the upgrade process:
  - Drops interface tables and database triggers
  - Populates columns that must change from NULL to NOT NULL
  - Uses the schema.ddl file from the development environment upgrade to create new tables and merge existing tables.
  - Prepares for index creation. Verifies that there are no unique key violations.
  - Creates indexes

  - Updates primary children foreign key references
  - Performs miscellaneous file actions
  - Makes several administrative changes to table data, including updating the schema version in S_APP_VER.

- Upgrade the repository and import seed data (upgrep + upgphys). Run the Database Configuration Wizard in upgrep + upgphys mode again, selecting the zSeries Seed/Repository Upgrade option to complete upgrade processing. During this step, the upgraded repository and seed data are imported.
- Tune upgrade scripts (optional). You can improve the performance of the production environment upgrade by tuning the production upgrade scripts in the test environment.

  Run several production upgrades against the test database. This allows you to understand the upgrade process before performing the production upgrade, to conduct performance testing, and to fine tune the upgrade scripts. After carrying out thorough performance testing, you can perform the live production upgrade using the tuned upgrade files.

Perform Upgrade Tasks (Production Environment)

This phase upgrades a production environment Siebel database to the new release and includes the following tasks:

- Prepare Application Data. These tasks involve preparing application data in the production database for migration.
- Upgrade database (upgrep + upgphys). Run the Database Configuration Wizard in upgrep + upgphys mode, selecting the zSeries Staging of Files for Upgrade option. This generates the files required to build the staging database and generate the upgrade files required to perform the in-place upgrade of the database. The additive and nonadditive schema upgrade files are generated separately.

  Note: If you have tuned the upgrade scripts during a production test upgrade and want to use them during your production upgrade, you do not have to perform this step. Instead, change the production test environment values in the upgrade files to production environment values and then apply these files on the Z/OS host to upgrade the target database. For further information on this task, see *Process of Upgrading a Siebel Production Environment*.

- (Optional) Apply the additive upgrade files to upgrade the database. This is a nondisruptive upgrade process.
- Perform the in-place upgrade of the database. The same changes are made during the in-place upgrade of the production environment as were made during the in-place upgrade of the production test environment.
- Upgrade the repository and import seed data (upgrep + upgphys). Run the Database Configuration Wizard in upgrep + upgphys mode again, selecting the zSeries Seed/Repository Upgrade option to complete upgrade processing.

Note: You do not have to run the utility in Prepare for Production mode before starting your production environment upgrade. You ran it as part of the production test environment upgrade. The required upgrade SQL commands have already been generated.

Perform Postupgrade Tasks

This phase is where you set up the environment, configure applications, and test the upgraded system as follows:

- Set Up the Environment. These tasks set up the postupgrade environment, which includes extracting the developers' databases and running database statistics.
- Application Administration. These tasks set up applications and include such things as setting up user access and visibility of views and screens.
- Application Configuration. These tasks prepare applications for testing, including data migration for specific applications.
- Test the Upgraded System. These tasks test the upgraded system. For development environment upgrades, you perform basic unit tests to verify application function followed by a full suite of regression and stress tests to verify the upgraded system is ready for production.

About the Siebel Database Configuration Utilities and Database Configuration Wizard

Upgrades: All upgrades.

Environments: All environments

The Database Configuration Utilities comprise a set of files that you install on a Siebel Server computer. These files are accessed when you run the Database Configuration Wizard and the Siebel Upgrade Wizard to install, configure, or upgrade the Siebel database on the DB2 host, or to perform other operations on the Siebel database after it is installed.

You can use any upgraded Siebel Server to perform an upgrade of the Siebel database. For best performance, however, install the Siebel Database Configuration Utilities files on the Siebel Server that you will use to perform the upgrade.

The Siebel Database Configuration Utilities files are installed at the same directory level as the Siebel Server in a directory called **dbsrvr**. For example, if the Siebel Server is installed in **C:\sba81\siebsrvr** (Windows), then the Siebel Database Configuration Utilities are installed in **C:\sba81\dbsrvr**. To edit and execute Siebel Database Configuration Utilities procedures and maintenance scripts, you must have READ-WRITE access to the Siebel Server bin directories in SIEBEL_ROOT (Windows), $SIEBEL_ROOT (UNIX).

The Database Configuration Wizard is part of the Siebel Configuration Wizard. It interactively gathers the information required to perform the following operations:

- Install the Siebel database. This wizard sets up the Siebel database in the RDBMS as part of a first-time installation of Siebel Business Applications. It is also used to add a language to the Siebel Database Server installation.
- Upgrade the Siebel database. This wizard upgrades the Siebel database to a new release in a development or production environment.
- Import or export a Siebel repository. This wizard moves entire repositories between database environments with the same schema definition.
- Migrate a Siebel repository. This wizard migrates repositories between databases and synchronizes the target database schema with the migrated repository schema definition. This wizard is supported only in releases prior to

Siebel Innovation Pack 2017. As of Siebel Innovation Pack 2017, you must migrate Siebel repositories using the Siebel Migration application.

- Run database utilities. This group of wizards perform the following functions:
  - Synchronize a database schema with the Siebel Repository schema definition.
  - Convert existing Lists of Values (LOVs) to Multilingual Lists of Values (MLOVs).
  - Configure the database by extracting storage control files from the DB2 catalog and validating the extracted files.
  - Migrate the database from an EBCDIC or ASCII encoding format to a Unicode encoding format.

About Running the Upgrade Database Option

When you run the Upgrade the Siebel Database option on the Database Configuration Wizard, the wizard prompts you for the upgrade environment (development or production) and the upgrade phase (upgrep, upgphys, or Prepare for Production Upgrade). The Wizard then prompts you for the information it requires about the upgrade environment to perform the upgrade.

After collecting and confirming the information, the wizard creates an upgrade configuration file and calls a driver that uses the environment information to create the SQL files required to upgrade your database.

After you run the Database Configuration Wizard, you run the Siebel Upgrade Wizard. The Siebel Upgrade Wizard opens a driver file containing the steps for the upgrade and executes these steps.

To upgrade a development environment, production test environment, or production environment, you must run the Database Configuration Wizard (and Siebel Upgrade Wizard) several times, as shown in the following table.

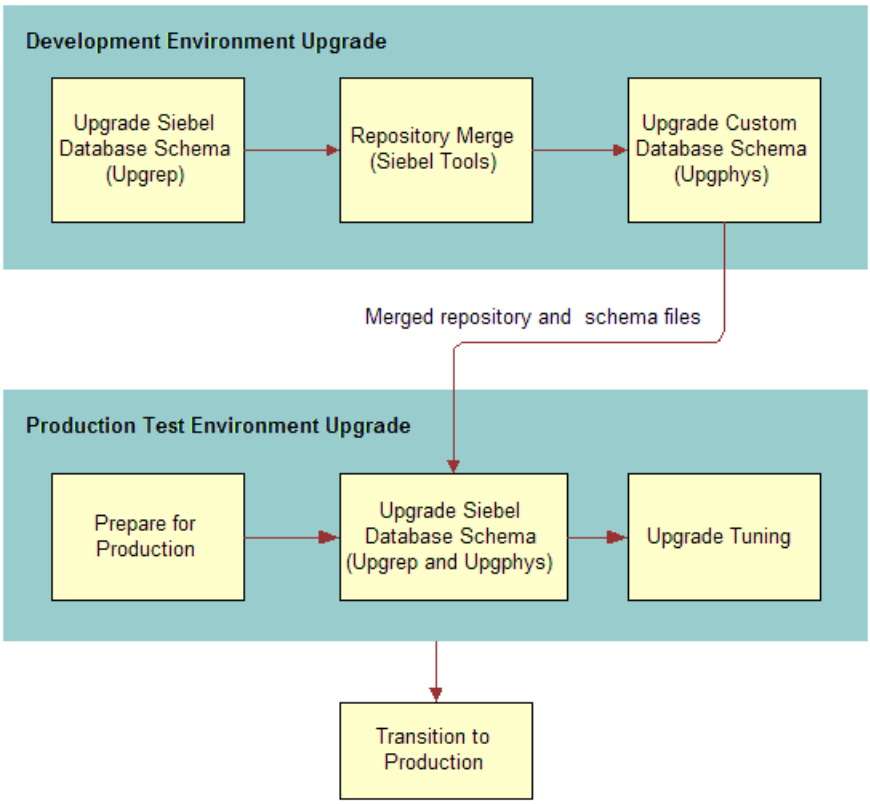
Upgrade Step	Select This Environment Type	Select This Upgrade Option(s)
Development environment upgrep	Development	upgrep: zSeries Staging of Files for Upgrade
Development environmentupgrep	Development	upgrep: zSeries Seed/Repository Upgrade
Development environment upgphys	Development	upgphys
Production test environment prepare for production (7.5.3 Upgrades only)	Production	Prepare for Production Upgrade
Production test environmentupgrep + upgphys	Production	upgrep + upgphys: zSeries Staging of Files for Upgrade
Production test environmentupgrep + upgphys	Production	upgrep + upgphys: zSeries Seed/ Repository Upgrade
Production environmentupgrep + upgphys	Production	upgrep + upgphys: zSeries Staging of Files for Upgrade

Upgrade Step	Select This Environment Type	Select This Upgrade Option(s)
Note: If you have completed a production test upgrade and have tuned the SQL and JCL upgrade files on the z/OS host, you can use these files to perform the target database upgrade in the production environment. In this case, you do not have to run this upgrade step.		
Production environmentupgrep + upgphys	Production	upgrep + upgphys: zSeries Seed/ Repository Upgrade

The following image shows how the Database Configuration Wizard (and Upgrade Wizard) work together with the Siebel Tools repository merge to upgrade your environments. The steps shown in the following image are as follows:

1. Development Environment Upgrade:
    a. Upgrade Siebel database schema (Upgrep)
    b. Repository merge (Siebel Tools)
    c. Upgrade custom database schema (Upgphys)
2. Merged repository and schema files from development environment are sent to production test environment.
3. Production Test Environment Upgrade:
    a. Prepare for production
    b. Upgrade Siebel database schema (Upgrep and Upgphys)
    c. Upgrade tuning.
4. Transition to Production.

Note: The Prepare for Production step is required for upgrades from Siebel CRM version 7.5.3 only.



How the Upgrade Configuration File and SQL Files Are Created

When you run the Database Configuration Wizard, it does the following:

- Collects configuration information.
- Creates a master upgrade configuration file (UCF). This file maps the information you entered in the Database Configuration Wizard to environment variables. When the Siebel Upgrade Wizard is performing the steps in a driver file, it uses these variables to generate the command contained in each step.
- Prompts you to start the Siebel Upgrade Wizard. The wizard forwards the information in the UCF file to an SQL generator that creates or populates SQL files on the midtier with the required commands to perform the upgrade. You then transfer these files to the z/OS host and apply them.

  In some cases, you will have to modify the generated SQL files as required by Alerts, Bulletins, or *Siebel CRM Update Guide and Release Notes* on My Oracle Support before you transfer the files to the z/OS host.

How to Locate Master Configuration Files

Master upgrade configuration files are stored in the following location:

Windows: **`DBSRVR_ROOT\DB2390\upgrade\Version`**

UNIX: **`$DBSRVR_ROOT/DB2390/upgrade/Version`**

where Version is the version from which you are upgrading

Master upgrade configuration files use the following naming convention:

master_UPGRADEOPTION_ENVIRONMENT_VERSION_MasterFileType.ucf

where:

- UPGRADEOPTION is the upgrade process you are performing. This can be one of the following:
  - **upgrep**. Siebel database schema upgrade.
  - **upgphys**. Custom database schema upgrade.
  - **upgrep**. Siebel Database Upgrade (production).
  - **prepare_for_production_upgrade**. Prepare for production upgrade; applies to 7.5.3 upgrades only.
- ENVIRONMENT is the environment that you are upgrading. This can be one of the following:
  - **dev**. Development environment upgrades.
  - **prod**. Production environment upgrades.
- VERSION is the version from which you are upgrading. The following numbers are used for the Siebel version of the filename:
  - 782
  - 80
  - 811
- MasterFileType is the type of master file. This can be one of the following:
  - **mf_m**. Configuration files generated for the manual phase of the upgrep process (zSeries Staging of Files for Upgrade process).
  - **mf**. Configuration files generated for the automatic phase of the upgrep process (zSeries Seed/Repository Upgrade process) and for the upgphys process.

    The automatic phases of the upgrade process are run after the manual phases are completed.

Example

If you are upgrading from Siebel CRM version 8.1.1, the UCF files generated from the development environment upgrade are as follows:

master_upgrep_dev_811_mf_m.ucf

master_upgrep_dev_811_mf.ucf

master_upgphys_dev_811_mf.ucf

The UCF file generated from the Prepare for Production Upgrade mode is as follows:

master_prepare_for_production_upgrade.ucf

About the Siebel Upgrade Wizard and Driver Files

Upgrades: All upgrades.

Environments: All environments

The Upgrade Wizard generates the files required to perform the upgrade of the Siebel database on the z/OS host and also makes changes to the Siebel database directly. After the Siebel Upgrade Wizard starts, it executes this process:

- Reads the upgrade configuration file (UCF) generated by the Database Configuration Wizard
- Calls a driver
- Passes the information in the UCF to the driver, which then passes UCF file information to, for instance:
  - the ddlimp utility, which executes ddl-type SQL commands
  - the dataimp utility, which executes data-related SQL commands

If ddlimp or dataimp (or any of the database utilities) encounter errors, they stop. When the errors have been corrected, you can launch the Siebel Upgrade Wizard, and the upgrade resumes from where it stopped.

The Siebel Upgrade Wizard pauses on four occasions during the upgrade file generation process. At each pause, you must transfer the files that the Upgrade Wizard has generated to the z/OS host and execute them before you resume the upgrade. Message text at each pause informs you of the tasks you must perform.

The files generated by the Upgrade Wizard are output by default to the `DBSRVR_ROOT\DB2390\dboutput\upgrade` directory (Windows) or `DBSRVR_ROOT/DB2390/dboutput/upgrade` directory (UNIX) or to the DDL Output Directory you specified when you ran the Database Configuration Wizard.

Driver Files

The Siebel Upgrade Wizard performs the upgrade by executing the commands and SQL scripts contained in driver files. Driver files are in ASCII text format and are organized into steps. The Upgrade Wizard reads the steps in the driver files and performs the commands contained in each step.

In a driver file, steps are separated by a blank line, and each step begins with a File Execute Entry number. The key part of each step is the command or script to be executed. When an SQL script is specified, you can review the script and see what changes it will make to the Siebel database before running the Siebel Upgrade Wizard.

Driver files are provided for each of the major upgrade operations. Examples of development environment upgrade driver files are as follows:

- driver_upgrep_dev_811_mf_m.ucf
- driver_upgrep_dev_811_mf.ucf
- driver_upgphys_dev_811_mf.ucf

Here is an excerpt from a driver file that controls a development environment upgrep from Siebel CRM version 8.1.1 to version Siebel Innovation Pack 2016 or later (driver_upgrep_dev_811_mf.ucf). The excerpt contains two steps:

```
[File Execute Entry 10]
Type = FileExecute
File Name = $SiebelRoot\bin\odbcsql
Check Return Code = 1
Return Code Compliance = 0
```

```
16 Bit App = 0
Is Script = 0
Command Line = /s "$ODBCDataSource" /u $UserName /p $Password /separator / /a /c rem
/q $DatabaseOwner /l $SiebelLogDir/upd_upgcomp.log $DbsrvrRoot/$DatabasePlatform/
upd_upgcomp.sql /v
Number of 10 Second Wait Loops = 2000
Return Code = 0
Title = Update version component info
Title Message Num = 0
Estimated Disk Space = 0
Backup Db = 0
Parallelizable Item = 0
Prompt User For Status = 0

[File Execute Entry 10]
Type = FileExecute
File Name = $SiebelRoot\bin\odbcsql
Check Return Code = 1
Return Code Compliance = 0
16 Bit App = 0
Is Script = 0
Command Line = /a I /g $RepeatForLanguage /u $UserName /p $Password /c
"$ODBCDataSource" /D $DatabaseOwner /M y /R "$AncestorRepName" /F $AncestorRepFile
/l $SiebelLogDir/imprep_ps.log /z 1000
Number of 10 Second Wait Loops = 2000
Return Code = 0
Title = Import Common Ancestor Repository
Title Message Num = 0
Estimated Disk Space = 0
Backup Db = 0Parallelizable Item = 0
Prompt User For Status = 0
```

How to Locate Upgrade Driver Files and SQL Scripts

Driver files are stored in the following location:

Windows: **DBSRVR_ROOT\DB2390\UPGRADE\ VERSION**

UNIX: **DBSRVR_ROOT/DB2390/UPGRADE/ VERSION**

where VERSION is the version from which you are upgrading, for example v8.1.1

For example, if you are upgrading from Siebel CRM 8.1.1, the driver files for the development environment upgrep are as follows:

driver_upgrep_dev_811_mf_m.ucf

driver_upgrep_dev_811_mf.ucf

Related Topic

About the Siebel Database Configuration Utilities and Database Configuration Wizard

Job Flow of a Production Database Upgrade

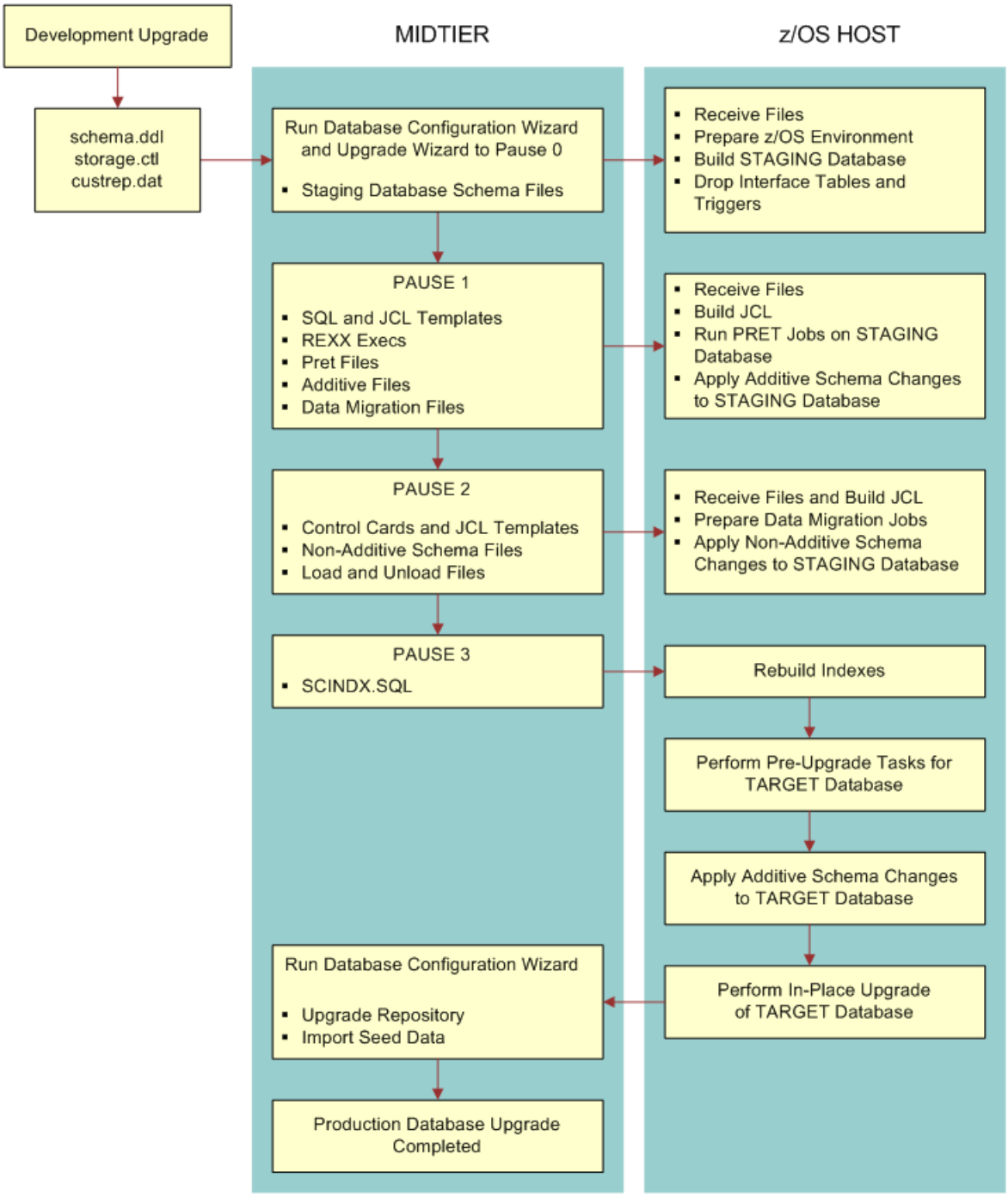
Upgrades: All upgrades.

Environments: Production environment only. Does not apply to production test environment.

This topic describes the major steps in a production database upgrade using the Database Configuration Wizard and Upgrade Wizard. This topic does not describe all the pre and postupgrade tasks you must complete for a production environment. See *Process of Upgrading a Siebel Production Environment* for a description of all the steps in upgrading a production environment.

The production environment upgrade job flow differs from a development environment upgrade job flow primarily in that a repository merge is not required. The repository (custrep.dat) and the logical schema (schema.ddl) are exported from the upgraded development environment and used in the production upgrade.

A production database upgrade job flow, as illustrated in the following image, is largely the same as the job flow of the upgrep stage of a development database upgrade.



The main steps in the production upgrade illustrated in this image are as follows:

1. Inputs to the Production Upgrade. The files required for the production upgrade are:
   - The storage control file (storage.ctl). This file specifies the storage layout of your upgraded database. Create and validate the storage.ctl before running a production upgrade.
   - The custrep.dat file (new customized repository) and the schema.ddl file (modified schema definition file). These files are generated during the development upgrade and must be copied to the appropriate upgrade directory before running a production upgrade.
2. Run upgrep + upgphys. Run the Database Configuration Wizard on the midtier:

a. Enter production environment information to create the production upgrade configuration file. Specify the following values:
   - Upgrade Option: Upgrade Siebel Database Schema (upgrep + upgphys)
   - Upgrade Process: zSeries Staging of Files for Upgrade
b. Launch the Upgrade Wizard to generate the DDL files that will be used to build the staging database.

The Wizard generates the staging database schema files on the midtier and then stops (Pause #0).

3. Create the Staging Database. Transfer the staging DDL files from the midtier to the z/OS host and apply them. Create the staging database and prepare the z/OS host upgrade environment.
4. Generate Additive Schema Upgrade Files. Restart the Database Configuration Wizard on the midtier. The wizard generates files and then stops at Pause #1.
5. Apply Pause #1 Files. The files generated by the Upgrade Wizard on the midtier up to pause #1 consist of JCL and SQL templates and REXX execs that are run on the z/OS host against the staging database. These jobs are used to perform preupgrade tasks for the staging database. Do the following:
   a. FTP the files generated by the Upgrade Wizard from the midtier to the mainframe.
   b. Receive the files, unpack the staging data sets into PDS format, and create JCL members to run the additive schema and PRET jobs against the staging database.
   c. Apply additive schema changes to the staging database.
   d. Run PRET jobs against the staging database.
6. Generate Nonadditive Schema Upgrade Files. Restart the Database Configuration Wizard on the midtier. The wizard generates files and then stops at Pause #2.
7. Apply Pause # 2 Files. The files generated by the Upgrade Wizard on the midtier up to pause #2 include nonadditive schema files, load control cards and JCL templates, and unload SQL and JCL templates. Use the files generated up to this point to perform the in-place upgrade of the staging database. Do the following:
   a. FTP the files that have been generated from the midtier to the host.
   b. Modify the load and unload data sets.
   c. Run the unpack jobs to populate PDS members.
   d. Customize the UNLOAD and LOAD jobs for target tables with CLOB columns.
   e. Add jobcards and Siebel logging to the Load, Unload, and data migration jobs.
   f. Apply the nonadditive schema changes to the staging database.
   g. Create temporary tables and indexes for the data migration scripts.
   h. Generate index rebuilds.
8. Generate the SCINDX Upgrade File. Restart the Database Configuration Wizard on the midtier. The wizard generates files and then stops at Pause #3.
9. Apply Pause # 3 Files. The SCINDX file generated at this point is used to rebuild indexes. Do the following:
   a. FTP the SCINDX.SQL file from the midtier to the z/OS host.
   b. Apply the SCINDX.SQL file to rebuild indexes.

   This completes the file generation process
10. Perform Pre-Upgrade Tasks for the Target Database as follows:
    a. On the z/OS host, build the JCL templates that will be used to perform the target database in-place upgrade by applying target database information to the JCL templates that were used to run the staging database in-place upgrade processes.
    b. Create and load Siebel log tables.
    c. (Optional) Apply additive schema changes.

11. Perform the In-Place Upgrade of the Target Database as follows:
    a. Remove interface tables, triggers, and stored procedures from the database.
    b. Run PRET jobs to prepare the target database for table creation during the upgrade.
    c. Apply nonadditive schema changes to the target database.
    d. Create, bind, and test the stored procedures.
    e. Run the Data Migration jobs to migrate preexisting Siebel data to the current release.

       There are optional data migration scripts for Household data and for Siebel Financial Services (FINS) applications.
    f. Remove old indexes, create new indexes, and run index rebuild jobs.
12. Upgrade the Repository and Import Seed Data as follows:
    a. Run the Database Configuration Wizard on the midtier.
    b. Enter production environment information to create the production upgrade configuration file. Specify the following values:
       - Upgrade Option: Upgrade Siebel Database Schema (upgrep + upgphys)
       - Upgrade Process: zSeries Seed / Repository Upgrade
    c. Launch the Upgrade Wizard. The Upgrade Wizard automatically runs the remaining DML upgrade jobs from the midtier to perform a number of tasks, including the following:
       - Deletes the old license key.
       - Verifies the repository name and imports the New Customer Repository from the upgraded development environment.
       - Upgrades seed data to the new version.

The production database upgrade is now completed.

Key Members in the DSNHLQ.SIEBEL.EXEC

Members in the **DSNHLQ.SIEBEL.EXEC** contain useful information that you can refer to when performing your development and production upgrade. These key members are described in the following table.

Member Name	Description
@JOBPRFX	Shows details of the job prefixes chosen for the upgrade.
@LASTJOB	Lists the job name of the last job for each step of the upgrade, for example: • PRESCHM:S003562Z • PRESCHF: S006463Z
@STGTAR	Lists details of the staging and target environments.
@TBOSTG	Provides staging tableowner details.
@TBOTAR	Provides target tableowner details.
@UPGPATH	Lists the upgrade path and the upgrade status, that is, the last step executed, for example:

Member Name	Description
	PAUSE=4 STEP=98- TARGET UPGISS DATA MIGRATION COMPLETE - UPGISS
@UPGFLOW	Contains details of all the steps in the upgrade.
@UPGTYPE	Shows the type of upgrade being run, for example, SIA 7.8.2

About the JCL Upgrade Jobs

This topic provides information about the JCL jobs you run to perform the upgrade on the z/OS host.

About Job Cards

The **DSNHLQ.SIEBEL.EXEC** data set contains base job cards for all the upgrade jobs. The upgrade process uses these job cards as a base for all jobs of a particular type, and then generates an individual job card for each job based on the information in the base card and in the @JOBPREFX member of the **DSNHLQ.SIEBEL.EXEC** data set.

For example, the base job card for PRESCHM jobs is JCPRES. An individual job card is created for each PRESCHM job based on information in both of the following:

- **DSNHLQ.SIEBEL.EXEC(@JOBPREFX)** provides the job prefix
- **DSNHLQ.SIEBEL.EXEC(JCPRES)** provides the base job card

Once job cards have been generated, changing the information in the @JOBPREFX member does not cause job card details to change.

Job Dependencies

Some JCL jobs, for example, some Data Migration jobs, have dependencies on other jobs. These jobs are submitted in a specific order, with subsequent jobs only being submitted when the current job has completed successfully. The **@DEPFLOW** member in the relevant JCL data set shows the order in which the jobs are to be submitted, for example, see **DSNHLQ.SIEBEL.PRESCHM.JCL(@DEPFLOW)** for information about the submission sequence for PRESCHM jobs.

Load and Unload Jobs

Load and Unload job procedures are located in the **DSNHLQ.SIEBEL.PROC** data set.

About the Override File

Upgrades: All upgrades.

Environments: Development environment only.

The override.inp file allows you to override your existing database storage layout when you upgrade to the current release of Siebel CRM. When you create the storage control file to use in the upgrade, by adding the names of tables to the override.inp file, you indicate that you do not want to preserve the existing definitions for these tables. For additional information, see *Extracting the Storage Control File*.

Since Siebel CRM version 7.7, the Siebel database schema structure has the following characteristics:

- One table in each table space
- One table space in each database

This layout is referred to as the 1:1:1 model. See *Planning Changes to the Physical Layout of the Schema* for further information.

If you are upgrading from a pre 7.7 release of Siebel Business Applications, you might want to switch to the 1:1:1 model from your existing database schema structure because it is more efficient. There are three options available when upgrading to the current release:

- Preserve the existing model of multiple tables for each table space and only build new tables with the 1:1:1 model.

  To use this option, extract a storage control file and merge it with an existing template. All existing definitions are preserved and new tables are built according to the definitions supplied in the template storage control file.

- Preserve the existing model for most tables but indicate that specific tables, are to use the 1:1:1 model by adding the table names to the override.inp file. For example, you might want to move populated tables to the 1:1:1 model. By default, the override.inp file has two table entries:

  - **S_DOCK_TXN_LOG**
  - **S_SERVICE_SCRPT**

  The existing definition for these two tables is *not* preserved during the upgrade. Therefore, these two tables can be built using the new model as specified in the template.

- Move all tables from the current model to the 1:1:1 model.

  To use this option, do *not* use the extract and merge process to create the storage control file. Instead, use the preconfigured storage control file. In the preconfigured storage control file, all tables are created using the 1:1:1 model. Therefore, each table is created in its own database or table space.

  The use of the preconfigured storage control file allows you to use the 1:1:1 model for all tables other than obsolete tables and customer extended tables. The preconfigured storage control file does not apply to obsolete or customer extended tables so there are no entries for them. You cannot put these into the override.inp file since there is nothing to override and the tables are not in the storage control file. In this case, the existing schema is preserved.

  The table spaces are not cleaned up unless they are empty. Some of the obsolete and customer extended tables are still in those table spaces so the upgrade process cannot just do a general cleanup.

4 How to Perform a Siebel Database Upgrade

How to Perform a Siebel Database Upgrade

This chapter provides a roadmap for performing each type of upgrade to the current Siebel CRM release. Each roadmap lists the processes and tasks you must follow to complete the upgrade. Print the relevant roadmap and use it to guide you in carrying out the upgrade. This chapter includes the following topics:

- *Modifying siebel.cfg Before Upgrading Siebel Database*
- *Roadmap for Performing a Siebel Database Upgrade*
- *Process of Planning a Siebel Database Upgrade*
- *Process of Upgrading a Siebel Development Environment*
- *Process of Upgrading a Production Test Environment*
- *Process of Tuning the Upgrade Performance*
- *Process of Upgrading a Siebel Production Environment*

Modifying siebel.cfg Before Upgrading Siebel Database

Before upgrading to Siebel 17.x, Siebel 18.x or later, a number of parameters must be changed in the siebel.cfg file as shown in the following procedure, otherwise the Siebel database upgrade will fail when upgrading in upgphys mode.

To modify siebel.cfg

1. Open siebel.cfg, which is located in the **`siebel-root\siebelserver\bin\`** folder and modify the following parameters:
   - Change **`ClientRootDir = siebel-root\ses`** to the following:

     `ClientRootDir = siebel-root\ses\siebsrvr`
   - Change **`ServerDbODBCDataSource = %MASTER_DATASOURCE%`** to the following:

     `ServerDbODBCDataSource = odbc connection name>`
   - Change **`DataSourceName = $(DefaultDataSource)`** to the following:

     `DataSourceName = ServerDataSrc`
2. (Optional) Resume the upgphys process from the command line as follows:

   Note: This step applies only if you have already run upgphys and received an encryption error similar to the following: *INFO:Recommendation : Verify cfg file(C:\Siebel\15.0.0.0.0\ses\siebsrvr\bin\enu \siebel.cfg)*.

   a. Go to the **`siebel-root\siebelserver\bin`** folder.
   b. Enter one of the following commands as required:

- Windows: `siebupg /m master_UPGRADEOPTION_ENVIRONMENT_VERSION.ucf`
- UNIX: `srvrupgwiz /m master_UPGRADEOPTION_ENVIRONMENT_VERSION.ucf`

The upgphys process will continue to run

Roadmap for Performing a Siebel Database Upgrade

Upgrades: All upgrades.

Environments: All environments

Use one of the following roadmaps to guide you through the steps for upgrading your Siebel database:

- *Roadmap for Upgrading from Siebel 7.8.2, 8.0.x or 8.1.1.x*
- *Roadmap for Upgrading from Siebel 7.8.2, 8.0.x or 8.1.1.x*
- *Roadmap for Upgrading from Siebel 7.x, 8.0.x or 8.1.1.x Without a Development Environment*

Each roadmap consists of a group of processes. Each process consists of a numbered list of tasks. After you complete the tasks in a process, go on to the next process in the roadmap. When you have completed all the processes in the roadmap, the upgrade is complete.

Depending on your installed release, you might not have to complete all the tasks in a process. Before starting a task, check the applicability information at the beginning of the task and verify the task applies to your upgrade.

Roadmap for Upgrading from Siebel 7.8.2, 8.0.x or 8.1.1.x

Note: This roadmap describes how to upgrade from one major release to another. For information on upgrading from Siebel 8.1.1.x to Siebel Innovation Pack 2016 or later, see *Performing the Siebel Incremental Repository Merge*.

If you are upgrading from Siebel CRM version 7.8.2 or higher to version 8.1. complete the processes in this roadmap in the order shown:

1. *Process of Planning a Siebel Database Upgrade*
2. *Process of Upgrading a Siebel Development Environment*
3. *Process of Upgrading a Production Test Environment*
4. *Process of Tuning the Upgrade Performance*
5. *Process of Upgrading a Siebel Production Environment*

For a description of the differences between production and development upgrades, see *About Siebel Upgrade Environments*.

Roadmap for Upgrading from Siebel 7.x, 8.0.x or 8.1.1.x Without a Development Environment

If you are upgrading from Siebel CRM Release 7.*x*, 8.0.x or 8.1.1.*x*, and you do not have a development environment, complete the processes in this roadmap in the order shown.

Upgrading without a development environment means the following are true:

- You are running an uncustomized, preconfigured version of Siebel Business Applications.
- You have not used Siebel Tools to create or modify any objects or logical schema definitions in the Siebel Repository.
- You have not modified the physical schema in the Siebel database.

If your upgrade meets these criteria, complete the following processes in the order shown:

1. *Process of Planning a Siebel Database Upgrade*.
2. *Preparing for a Siebel Upgrade Without a Development Environment*.
3. Perform a production test upgrade. See *Process of Upgrading a Production Test Environment*.
4. *Process of Tuning the Upgrade Performance*.
5. Upgrade your production environment. See *Process of Upgrading a Siebel Production Environment*.

Process of Planning a Siebel Database Upgrade

Upgrades: All upgrades.

Environments: All environments

This process is part of an upgrade roadmap. See *Roadmap for Upgrading from Siebel 7.8.2, 8.0.x or 8.1.1.x* and *Roadmap for Upgrading from Siebel 7.x, 8.0.x or 8.1.1.x Without a Development Environment*.

To plan the upgrade, read the following:

1. *How the Siebel Database Upgrade Works*
2. In the chapter in *Siebel Database Upgrade Guide* that describes how the Siebel database upgrade works, read topics about the following:
   - About the Siebel case insensitivity wizard
   - About the Siebel repository merge
   - About inheriting upgrade behavior in a Siebel upgrade
   - About the Siebel postmerge utilities
   - About the Siebel Incorporate Custom Layout upgrade option
   - About the Database Configuration Utilities
3. *Planning a Siebel Database Upgrade*
4. In the chapter in *Siebel Database Upgrade Guide* that describes Siebel database and UI upgrade planning, read topics about the following:
   - About Siebel upgrade planning resources
   - About best practices for doing your Siebel database upgrade
   - About Siebel user interface changes
   - About the Siebel Party Model
   - About migrating Siebel HTML attachments to base tables
   - Upgrade planning for multilingual Siebel deployments
   - Upgrade planning for Siebel RC2 or AES encryption

- Upgrade planning for Siebel access control

5. The chapter in *Siebel Database Upgrade Guide* that describes application planning for a Siebel upgrade.
6. The appendix in *Siebel Database Upgrade Guide* that contains reference information on Siebel Marketing upgrades.
7. The appendix in *Siebel Database Upgrade Guide* that lists tables modified or seeded during a Siebel upgrade.

Process of Upgrading a Siebel Development Environment

Upgrades: All upgrades.

Environments: Development environment only.

This process is part of a roadmap. See *Roadmap for Performing a Siebel Database Upgrade*.

This topic lists the steps required to upgrade a Siebel development environment to the current release. Print this topic and use it as a checklist for doing the upgrade.

The topic is divided into subtopics, each containing a list of numbered steps. Complete each subtopic in the order shown.

Searching for Bulletins and Alerts on My Oracle Support

Check My Oracle Support for recently published bulletins and alerts regarding the upgrade.

Upgrade Third-Party Software

If necessary, upgrade third-party software that is used by Oracle's Siebel software. For example, you might have to upgrade the operating system software. Some database upgrades require newer versions of UNIX or Windows.

Upgrade the Servers

Verify that you have identified all the maintenance releases and Siebel Patchset releases for the upgrade.

CAUTION: Do not install a new Siebel database as part of upgrading the Siebel Enterprise Server.

To perform the following steps, see *Siebel Installation Guide* for the operating system you are using and *Implementing Siebel Business Applications on DB2 for z/OS* :

Install the Siebel CRM 8.1 Gateway Server and Siebel Servers.

The upgraded Siebel Servers will not work correctly with the RDBMS server until after you have upgraded the Siebel database to the new release.

1. Install the Siebel Database Configuration Utilities files on the Siebel Server you will use to perform the upgrade.
2. Install language packs for your currently deployed languages and any new languages.
3. If you have customized the configuration of Enterprise components, such as Siebel Servers, you must migrate the customizations to the upgraded environment. For information on this task, see *Siebel System Administration Guide* .

Upgrade the RDBMS

If required, upgrade your version of DB2 for z/OS. Refer to the IBM documentation to perform the upgrade.

Preupgrade Tasks for the Siebel Database

1. Review guidelines for configuring DB2 for z/OS. See *Implementing Siebel Business Applications on DB2 for z/OS* .
2. Verify that the Workflow Monitor and Workflow action agents have processed all pending requests.
3. Stop the Siebel Servers.
4. 7.5.3 upgrades only: Perform the task in *Updating Table Space Group Names*.
5. Remove customized database triggers.

   The Siebel upgrade process is not designed to support custom database triggers. If you have created customized triggers for the Siebel schema to be upgraded, you must remove them before starting the Siebel upgrade process. You can re-create these objects once the Siebel upgrade completes successfully.
6. Prepare the storage control file to use in the upgrade. See *Process of Preparing the Storage Layout of the Schema*.
7. Perform the tasks in the following:
   - *Basic Database Preparations for a Siebel Upgrade*
   - The chapter in *Siebel Database Upgrade Guide* that describes basic database preparations for a Siebel upgrade.

Preupgrade Tasks for a Development Environment Upgrade

1. Perform the tasks in *Preparing a Development Environment for a Siebel Upgrade*
2. Rename the Siebel Repository. For information on this task, see the chapter in *Siebel Database Upgrade Guide* that describes upgrading the Siebel database.

Preupgrade Tasks for Application Data

Perform the tasks in the chapter in *Siebel Database Upgrade Guide* that describes how to prepare Siebel application data for upgrade.

Some of these tasks are optional, depending on the currently installed Siebel products and your upgrade path. Review and perform these tasks as necessary.

Preparing Developers for the Upgrade

1. Back up the development database.
2. Verify that all developers have checked in their projects and that all projects are unlocked.
3. Verify that all developers have disconnected from the database. The only open connection must be the account that is performing the upgrade.

4. Install the new Siebel Tools on development workstations. Keep at least one copy of the previous version of Siebel Tools. You will require it to perform repository operations before the repository merge.
5. Activate the new Siebel Tools on development workstations. Keep at least one copy of the previous version of Siebel Tools. You will require it to perform repository operations before the repository merge.
6. Perform all remaining tasks with the new Siebel Tools, unless stated otherwise.

Upgrade Siebel Database Schema (upgrep)

1. (Optional) Change the Siebel Database Configuration Wizard language. For information on this topic, see the chapter in *Siebel Database Upgrade Guide* that describes how to upgrade the Siebel database.
2. Create the staging database by performing the following tasks:
   a. *Required Tasks before Creating the Staging Database*.
   b. *Creating the Staging Database Schema DDL Files*.
   c. *Transferring the Staging DDL to the z/OS Host*.
   d. *Preparing the z/OS Upgrade Environment and Creating the Staging Database*.
   e. *Removing Interface Tables and Triggers*.
3. Generate the Upgrade Files by performing the following tasks:

   Note: Edit the generated files as required by Siebel Technical Notes, Siebel Alerts, *Siebel CRM Update Guide and Release Notes* on My Oracle Support or other publications before transferring them to the z/OS host.

   a. *Required Tasks for Generating the Upgrade Files*.
   b. *Restarting the Siebel Upgrade Wizard After Pauses*.
   c. *Preparing the Additive Schema and JCL Files on the z/OS Host*.
   d. *Restarting the Siebel Upgrade Wizard After Pauses*.
   e. *Preparing and Executing the Nonadditive Schema and JCL Files on the z/OS Host*.
   f. *Restarting the Siebel Upgrade Wizard After Pauses*.
   g. *Processing the Index Schema File*.
   h. *Building JCL Templates for the Target Database*.
4. Upgrade the target database by performing the following tasks:
   a. *Dropping Partitioned EIM Tables*.
   b. *Process of Upgrading the Target Database*.
   c. *Performing the In-Place Target Database Upgrade*.
5. Upgrade the repository and import seed data as described in *Upgrading the Repository and Importing Seed Data*.
6. *About the Siebel Upgrade Log Files* .
7. If the upgrade contains unacceptable errors, do the following:
   a. Restore the backup of the database that you made previously (see *Preparing Developers for the Upgrade*).
   b. Correct the errors.
   c. Rerun the Database Configuration Wizard.
8. *Activating New License Keys After an Upgrade*.
9. Back up the upgraded database repository.

Prepare for Repository Merge

1. Perform the following tasks. For information on performing these tasks, see the chapter in *Siebel Database Upgrade Guide* that describes how to perform the Siebel Repository merge:
   - Migrate Siebel Repository objects to the standard user interface (UI).
   - Configure Siebel Repository objects to inherit upgrade behavior.
2. *About Backing Up the New Customer Repository or Database Schema*.
3. Execute the REORG utility on tables that receive a large number of inserts during the repository import process. For a list of the tables that must be reorganized at this point, see *About Reorganizing Tables Before the Repository Merge*.
4. Run database statistics on the Siebel repository tables. For further information on running database statistics, see *Generating RUNSTATS Jobs*. Running statistics on the Siebel repository tables improves merge performance. If upgrading from Siebel CRM versions 7. 7 or 7.8.*x*, run statistics specifically on the **S_SYM_STR** and **SYM_STR_INT** tables. If you are upgrading from a pre-7.7 Siebel CRM release, the **S_SYM_STR** and **SYM_STR_INT** tables are not populated until the merge is completed so you do not have to run statistics on them at this point.

Perform Repository Merge

CAUTION: The Repository merge process cannot be stopped and restarted so make sure you have backed up the database schema or the New Customer Repository before starting the merge.

1. *Performing a Siebel Repository Merge*.

   Note: If you are upgrading from Siebel CRM version 8.1.1.x fix pack (SIA repository) to Siebel Innovation Pack 2016 or later, refer to *Performing the Incremental Repository Merge* instead of this topic.

2. Review the Siebel Repository merge log files. For information on this task, see the chapter about performing the Siebel Repository merge in *Siebel Database Upgrade Guide* .
3. If the repository merge contains unacceptable errors, do the following:
   a. Restore the backup of the database or New Customer Repository. See *About Backing Up the New Customer Repository or Database Schema*.
   b. Correct the errors.
   c. Rerun the repository merge.

   Note: Before completing the next two steps (Step 4 and Step 5), you must execute the Full Publish command in Siebel Tools to generate the runtime repository data.

4. Run the Siebel postmerge utilities. For information on this task, see the chapter about performing the Siebel Repository merge in *Siebel Database Upgrade Guide* .
   This step is required only for full repository merge and not if you are performing an incremental repository merge.
5. Perform the following tasks. For information on these tasks, see the chapter about performing the Siebel Repository merge in *Siebel Database Upgrade Guide* :
   - Delete unneeded Siebel repository files.

- Generate Siebel Enterprise Integration Manager (EIM) temporary columns.
- (Optional) Set label alignment for Siebel text fields.

6. Generate database statistics for new tables and new indexes using the RUNSTATS utility. Your DBA can check the system catalog to determine the database objects that do not have statistics.

   For further information on generating database statistics, see *Generating RUNSTATS Jobs*.
7. Back up the Siebel database.

Upgrade Custom Database Schema (upgphys)

1. Run the Database Configuration Wizard to extract the storage control file from the target database as follows:
   - Specify the following values when prompted to do so:
     - Extract Options: Extract from Catalog.
     - Storage Control File: Specify the name of the storage control file to be extracted. You must specify the name storage_postupg.ctl.
   - Make sure you specify values for the target database when prompted for the names of the schema qualifier, ODBC data source, and database user name and password.

     The procedure to extract a storage control file using the Extract from catalog option is described in *Implementing Siebel Business Applications on DB2 for z/OS* . The extracted target database storage control file is used as input to the upgphys upgrade process.
2. Run the Database Configuration Wizard to complete the development environment upgrade:
   - Choose the following settings:
     - Environment Type: Development.
     - Upgrade Options: Upgrade Custom Database Schema (upgphys).
     - Storage Control File: The storage control file that you generated in step 1.
     - Make sure you specify values for the target database when prompted for the names of the schema qualifier, ODBC data source, and database user name and password.

       Launch the Siebel Upgrade Wizard. SQL commands are executed on the development environment database and a number of output files are generated.
3. *Transferring the Development Environment Upgrade Output Files to the z/OS Host*.
4. *Synchronizing the Schema*.
5. *About the Siebel Upgrade Log Files* .
6. If the upgrade contains unacceptable errors, do the following:
   a. Restore the backup of the database.
   b. Correct the errors.
   c. Rerun the Database Configuration Wizard.
7. *Manually Archiving Upgrade Log Files*.
8. Back up the upgraded database.
9. *Deleting Redundant Upgrade Files*.

Review the User Interface

1. Review Siebel Repository object property conflicts.

   For information on this task, see the chapter in *Siebel Database Upgrade Guide* that describes how to perform the Siebel Repository merge.
2. Carefully review the user interface in the new release by performing the tasks in the chapter in *Siebel Database Upgrade Guide* that describes reviewing the Siebel user interface.
3. If you customized style sheet or Web template files in the previous release, implement those customizations in the new release again and execute a full publish in Siebel Tools to compile the Siebel Runtime Repository data.
4. The postmerge utilities do not convert certain types of flow-based applets to grid-based applets. For example, they do not convert custom form applets to grid-based applets. Convert remaining flow based applets as desired. For further information on editing applet layout, see *Configuring Siebel Business Applications* .

Postmerge Development Tasks

1. Perform the following tasks. For information on these tasks, see the chapter in *Siebel Database Upgrade Guide* that describes the Siebel postmerge development tasks:
   - Review objects deleted from the Siebel Repository
   - Review obsolete objects in the Siebel Repository
   - Upgrade to the Siebel symbolic string model
   - Update Siebel Enterprise Application Integration (EAI)
2. Resolve any business component and join conflicts.

Postupgrade Tasks for Database and File System

1. Perform the applicable tasks in *Postupgrade Tasks for Siebel Database and File System*
2. Perform the following tasks. For information on these tasks, see the chapter in *Siebel Database Upgrade Guide* that describes postupgrade tasks for the Siebel database and file system:
   - Check for inactivated EIM table columns in the Siebel database
   - Validate dock objects and rule definitions in the Siebel database
3. Reset upgrade-specific database and database server parameters back to their recommended settings for production. See *Siebel Installation Guide* for the operating system you are using and *Implementing Siebel Business Applications on DB2 for z/OS* for recommended parameter settings.
4. If you exported data from interface tables before the upgrade, review the database and import the data as desired.
5. Upgrade unencrypted data and data that was encrypted using the standard encryptor to RC2 or AES encryption. For information on this task, see the chapter in *Siebel Database Upgrade Guide* that describes Siebel database and UI upgrade planning.

Note: The development environment is now upgraded. The remaining sections deal with configuration and validation tasks.

Postupgrade Tasks for Applications Configuration

1. If applicable, review the results of the Person and Organization merge. Make configuration changes as required. For further information, see the topic about the Siebel Party Model in the chapter in *Siebel Database Upgrade Guide* that describes Siebel database and UI upgrade planning.
2. Perform the tasks in:
   - *Postupgrade Tasks for Siebel Business Applications*
   - The chapter in *Siebel Database Upgrade Guide* that describes the postupgrade tasks for Siebel Business Applications
3. Verify the function of interfaces in integrated applications.
4. Activate and deploy workflows. To perform these tasks, see *Siebel Business Process Framework: Workflow Guide* .
5. If you have set up integrations for transferring data to or from third-party applications using Siebel EAI, verify the integrations are configured correctly. For information on using EAI, see *Overview: Siebel Enterprise Application Integration* .
6. If you have used EIM to set up batch processing jobs, verify EIM is configured correctly. For information on using EIM, see *Siebel Enterprise Integration Manager Administration Guide* .

Perform System Tests

Use available test data to perform unit testing. Validate application function in the following areas:

- User interface
- Data interfaces
- Integrity of migrated data
- Workflow function

Prepare for Transition to Production Test Environment

If you revised the repository after running upgphys, you must regenerate the repository definition files. For information, see *Regenerating the Siebel Repository Definition Files*.

Process of Upgrading a Production Test Environment

Upgrades: All upgrades.

Environments: Production test environment only. Does not apply to production environment.

This process is part of a roadmap. See *Roadmap for Performing a Siebel Database Upgrade*.

This topic lists the tasks required to upgrade your production test environment to the current release. Print this topic and use it as a checklist for doing the upgrade.

Note: The production test environment must replicate the production environment exactly.

The topic is divided into subtopics, each containing numbered steps. Complete the steps in the order shown.

Searching for Bulletins and Alerts on My Oracle Support

Check My Oracle Support for recently published bulletins and alerts regarding the upgrade.

Upgrade Third-Party Software

Upgrade third-party software that is used by Oracle's Siebel software if required. For example, you might have to upgrade the operating system software. Some database upgrades require newer versions of UNIX or Windows.

Upgrade the Servers

Verify you have identified all the maintenance releases and Siebel Patchset releases for the upgrade.

CAUTION: Do not install a new Siebel database as part of upgrading the Siebel Enterprise Server.

To perform the following steps, see *Siebel Installation Guide* for the operating system you are using and *Implementing Siebel Business Applications on DB2 for z/OS* . Do the following:

1. Install the Siebel CRM 8.1 Gateway Server and Siebel Servers.

   The upgraded Siebel Servers will not work correctly with the RDBMS server until after you have upgraded the Siebel database to the new release.
2. Install the Siebel Database Configuration Utilities files on the Siebel Server you will use to perform the upgrade.
3. Install language packs for your currently deployed languages and any new languages.
4. If you have customized the configuration of Enterprise components, such as Siebel Servers, you must migrate the customizations to the upgraded environment. For information on this task, see *Siebel System Administration Guide* .

Upgrade the RDBMS

If required, upgrade your version of DB2 for z/OS and DB2 Connect middleware. You might also have to upgrade any DB2 clients that connect to the Siebel database. Refer to the IBM documentation to perform the DB2 for z/OS and DB2 Connect upgrades.

Preupgrade Tasks for the Siebel Database

1. Review guidelines for configuring DB2 for z/OS. For information, see *Implementing Siebel Business Applications on DB2 for z/OS* .
2. Verify that the Workflow Monitor and Workflow action agents have processed all pending requests.

3. Remove customized database triggers.

   The Siebel upgrade process is not designed to support custom database triggers. If you have created customized triggers for the Siebel schema to be upgraded, you must remove them before starting the Siebel upgrade process. You can re-create these objects once the Siebel upgrade completes successfully.
4. Prepare the storage control file to use in the upgrade. See *Process of Preparing the Storage Layout of the Schema*.
5. Perform the tasks in:
   - *Basic Database Preparations for a Siebel Upgrade*
   - The chapter in *Siebel Database Upgrade Guide* that describes the basic database preparations for a Siebel upgrade
6. Before starting the production test upgrade, ensure that:
   - Siebel database transactional tables with clustering indexes are organized in cluster sequence.
   - Generate database statistics for your Siebel database transactional tables, if required.

Preupgrade Tasks for Application Data

Perform the tasks in the chapter in *Siebel Database Upgrade Guide* that describes how to prepare Siebel application data for upgrade.

Some of these tasks are optional, depending on the currently installed Siebel products and your upgrade path. Review and perform these tasks as necessary.

Preupgrade Tasks for a Production Test Environment Upgrade

1. Review the information in *Requirements for Upgrading the Production Environment*.
2. For instructions on how to set up the Siebel database and Siebel Servers in the production test environment, refer to 477772.1 (Article ID) on My Oracle Support. This document was formerly published as Siebel Technical Note 586.
3. Stop the Siebel Servers.
4. Close all database connections. The only database connection must be the account performing the upgrade.

   Disconnect the Siebel Server from the development environment database and connect it to the production test environment database.
5. Copy application files to the environment:
   - Reports files
   - Custom Style sheets

     See the topic on copying UI files to a new Siebel environment in the chapter in *Siebel Database Upgrade Guide* that describes how to perform the Siebel Repository merge.
6. *About Moving the Customized Repository and Schema Definition Files*.

   If you revised repository objects or schema definitions after performing your development environment upgrade, regenerate the schema.ddl and custrep.dat files before transferring them to the production test environment. For information, see *Regenerating the Siebel Repository Definition Files*.
7. *Preparing for a Siebel Upgrade Without a Development Environment*.

If you do not have a development environment, perform this task.

8. Verify the production test database is either a copy of the current production database or has the same topology and a similar amount of data. This is important for effective performance testing of the upgrade scripts.
9. Back up the production test environment database. To do upgrade tuning, you will restore this database and perform test upgrades on it.

Prepare for Production

1. (Optional) Change the Siebel Database Configuration utilities language. For information on this topic, see the chapter in *Siebel Database Upgrade Guide* that describes how to upgrade the Siebel database.
2. (7.5.3 Upgrades only)Run the Database Configuration Wizard as described in *About Running the Database Configuration Wizard on Windows* or *About Running the Database Configuration Wizard Under UNIX*. Do the following:
   a. Specify the following options:
      - Upgrade Options: Prepare for Production Upgrade
      - Environment Type: Production
   b. Launch the Siebel Upgrade Wizard.

Upgrade the Siebel Database Schema (upgrep + upgphys)

1. Create the staging database by performing the following tasks:
   a. *Required Tasks before Creating the Staging Database*.
   b. *Creating the Staging Database Schema DDL Files*.
   c. *Transferring the Staging DDL to the z/OS Host*.
   d. *Preparing the z/OS Upgrade Environment and Creating the Staging Database*.
2. Generate the upgrade files by performing the following tasks:

   Note: Edit the generated files as required by Siebel Technical Notes, Alerts, *Siebel CRM Update Guide and Release Notes* on My Oracle Support, or other publications before transferring them to the z/OS host.

   a. *Required Tasks for Generating the Upgrade Files*.
   b. *Restarting the Siebel Upgrade Wizard After Pauses*.
   c. *Preparing the Additive Schema and JCL Files on the z/OS Host*.
   d. *Applying the Additive Schema Changes to the Production Staging Database*.
   e. *Restarting the Siebel Upgrade Wizard After Pauses*.
   f. *Preparing and Executing the Nonadditive Schema and JCL Files on the z/OS Host*.
   g. *Restarting the Siebel Upgrade Wizard After Pauses*.
   h. *Processing the Index Schema File*.
   i. *Building JCL Templates for the Target Database*.
3. Upgrade the target database by performing the following tasks:
   a. Read *Process of Upgrading the Target Database*.
   b. *Dropping Partitioned EIM Tables*.

c. *Creating and Loading Siebel Log Tables*
d. *Applying Additive Upgrade Changes to the Target Database*.
e. *Renaming the Production Environment Repository*.
f. *Performing the In-Place Target Database Upgrade*.

4. Extract the storage control file from the target database using the Database Configuration Wizard as follows:
   - Specify the following values when prompted to do so:
     - Extract Options: Extract from Catalog.
     - Storage Control File: Specify the name of the storage control file to be extracted. You must specify the name storage_postupg.ctl.
   - Make sure you specify values for the target database when prompted for the names of the schema Qualifier, ODBC data source, and database user name and password.

   The procedure to extract a storage control file using the Extract from catalog option is described in *Implementing Siebel Business Applications on DB2 for z/OS* . The extracted target database storage control file is used as input to the upgphys upgrade process.
5. Upgrade the repository and import seed data. See *Upgrading the Repository and Importing Seed Data*.
6. *Activating New License Keys After an Upgrade*.
7. *About the Siebel Upgrade Log Files* .
8. If the upgrade contains unacceptable errors, do the following:
   a. Restore the backup of the database.
   b. Correct the errors.
   c. Rerun the Database Configuration Wizard.
9. *Manually Archiving Upgrade Log Files*.
10. Back up the upgraded database.

Postupgrade Tasks for Database and File System

1. Perform the relevant tasks in *Postupgrade Tasks for Siebel Database and File System*
2. Perform the following tasks. For information on these tasks, see the chapter in *Siebel Database Upgrade Guide* that describes postupgrade tasks for the Siebel database and file system:
   - Check for inactivated EIM table columns in the Siebel database
   - Validate dock objects and rule definitions in the Siebel database
3. Reset upgrade-specific database and database server parameters back to their recommended settings for production. See *Siebel Installation Guide* for the operating system you are using and *Implementing Siebel Business Applications on DB2 for z/OS* for recommended parameter settings.
4. If you exported data from interface tables before the upgrade, review the database and import the data as desired.
5. Upgrade unencrypted data and data that was encrypted using the standard encryptor to RC2 or AES encryption. For information on this task, see the chapter in *Siebel Database Upgrade Guide* that describes Siebel database and UI upgrade planning.
6. Ensure Siebel database transactional tables with clustering indexes are organized in cluster sequence, and check whether or not you have to run the REORG utility on new tables.
7. Generate statistics for tables and indexes that were created or rebuild when additive schema changes were applied to the database. You might also have to reorganize these tables and indexes. For further information on generating database statistics, see *Generating RUNSTATS Jobs*.

Note: The production test environment is now upgraded. The remaining sections deal with configuration and validation tasks.

Postupgrade Tasks for Siebel Application Configuration

1. Perform the tasks in the following to prepare for system testing:
   - *Postupgrade Tasks for Siebel Business Applications*
   - The chapter in *Siebel Database Upgrade Guide* that describes the postupgrade tasks for Siebel Business Applications
2. Verify the function of interfaces in integrated applications.
3. Activate and deploy workflows. To perform these tasks, see *Siebel Business Process Framework: Workflow Guide* .
4. If you have set up integrations for transferring data to or from third-party applications using Siebel EAI, verify the integrations are configured correctly. For information on using EAI, see *Overview: Siebel Enterprise Application Integration* .
5. If you have used EIM to set up batch processing jobs, verify EIM is configured correctly. For information on using EIM, see *Siebel Enterprise Integration Manager Administration Guide* .
6. If you customized style sheet or Web template files in the previous release, implement those customizations in the new release again and execute a full publish in Siebel Tools to compile the Siebel Runtime Repository data. Carefully review the UI in the new release before implementing customizations to those files.

Perform System Tests

Use available test data to perform unit testing. Validate application function in the following areas:

- User interface
- Data interfaces
- Integrity of migrated data
- Workflow function

Process of Tuning the Upgrade Performance

Upgrades: All upgrades.

Environments: Production test environment only. Does not apply to production environment.

This process is optional.

This process is part of a roadmap. See *Roadmap for Performing a Siebel Database Upgrade*.

CAUTION: You are required to contact your Oracle sales representative for Oracle Advanced Customer Services to request assistance with tuning your upgrade scripts. If you do not, you might invalidate your support agreement.

Use this process to run test upgrades in the production test environment so you can tune upgrade performance. Improving upgrade performance reduces downtime when you perform the production environment upgrade. The steps in this process cover standard performance tuning. For help with this process and to implement more advanced tuning, contact your Oracle sales representative for Oracle Advanced Customer Services to request assistance.

You can also use this process to test the additive schema changes feature to verify that it does not adversely affect application functionality. The additive schema changes feature allows you to perform part of the upgrade on the production database without taking it offline. This reduces the downtime required to upgrade the production database.

Perform this process in the production test environment. Do not perform this process in the production environment.

Review the following upgrade planning and performance tuning resources before performing this process:

- 478308.1 (Article ID) on My Oracle Support. This document was formerly published as Siebel Technical Note 616. This document describes strategies for minimizing production environment downtime during an upgrade. The steps outlined in this topic are intended primarily for use with the baseline best practices described in Technical Note 616.
- *Tuning the Siebel Production Upgrade Scripts* This chapter provides information on how you can improve the performance of the production environment upgrade by tuning the production upgrade scripts in a production test environment.

Set Up the Target Database

1. Back up and remove the upgraded production test database.
2. In the production test environment, install a recent backup of your production database.

   This database has not been upgraded and is called the target database. You use it to perform test upgrades as part of tuning upgrade performance.
3. Define an ODBC connection to the target database.
4. Verify that the target database is configured for optimum upgrade performance. Review the relevant topics in the following:
   - *Basic Database Preparations for a Siebel Upgrade*
   - The chapter in *Siebel Database Upgrade Guide* that describes the basic database preparations for a Siebel upgrade
5. (Optional) Run statistics on the target database if the catalog statistics require updating.
6. Perform the relevant tasks in the chapter in *Siebel Database Upgrade Guide* that describes how to prepare Siebel Business Applications data for upgrade.

Upgrade the Target Database Schema (upgrep + upgphys)

1. Using the upgrade files you generated during the production test upgrade, upgrade the target database by performing the following tasks:
2. *Dropping Partitioned EIM Tables*.
3. *Applying Additive Upgrade Changes to the Target Database*.
4. *Performing the In-Place Target Database Upgrade*.
5. Upgrade the repository and import seed data. See *Upgrading the Repository and Importing Seed Data*. Specify the storage control file you extracted when you performed the production test upgrade (see *Upgrade the Siebel Database Schema (upgrep + upgphys)*).
6. *Activating New License Keys After an Upgrade*.
7. Note the time required to upgrade the database.
8. Review the upgrade logs for errors. See *About the Siebel Upgrade Log Files* .

9. If the upgrade contains errors that prevented completion or adversely affected performance, correct the errors and rerun the upgrade.
10. *Manually Archiving Upgrade Log Files*.

Tune the Upgrade Files

1. Evaluate upgrade performance, particularly the time required to complete the upgrade.

   During a production mode upgrade, using the /z and /h parameters in the import command will reduce upgrade time and improve the overall repository import process performance.
2. Do one of the following:
   - If the time required to complete the upgrade is acceptable, no further tuning is required. Perform the steps in *Process of Upgrading a Siebel Production Environment*.
   - If the time required to complete the upgrade is too long, perform the remaining steps in this subtopic to continue tuning upgrade performance.
   - If the time required to complete the upgrade is too long and you cannot tune further, contact your Oracle sales representative for Oracle Advanced Customer Services to request assistance in applying advanced tuning.
3. Carefully review target database and database server configuration. Adjust as required to further improve upgrade performance.
4. Tune the upgrade files:
   - *Optimizing Unload and Load Job Performance*.
   - *Adding the Statistics Clause to Load Cards*.
5. Copy the tuned upgrade scripts to a safe location for use in the production upgrade.

Restore the Target Database

Perform these steps if you have made changes to the upgrade environment or to the upgrade files and want to run the upgrade again to verify performance improvement.

1. In the production test environment, restore the target database from backup.

   This returns the target database to its nonupgraded state so that you can perform another test upgrade.
2. In the production test environment, perform another test upgrade and evaluate upgrade performance.
3. Repeat the tuning process and perform test upgrades until upgrade performance is acceptable.
4. When you have completed tuning upgrade performance in the production test environment, delete and remove the target database.

Process of Upgrading a Siebel Production Environment

Upgrades: All upgrades.

Environments: Production environment only. Does not apply to production test environment.

This process is part of a roadmap. See *Roadmap for Performing a Siebel Database Upgrade*.

This topic lists the tasks required to transition your production test environment to production. Print this topic and use it as a checklist for doing the upgrade.

The topic is divided into subtopics, each containing numbered steps. Complete the steps in the order shown.

Searching for Bulletins and Alerts on My Oracle Support

Check My Oracle Support for recently published bulletins and alerts regarding the upgrade.

Upgrade Third-Party Software

Upgrade third-party software that is used by Oracle's Siebel software if required. For example, you might have to upgrade the operating system software. Some database upgrades require newer versions of UNIX or Windows.

Upgrade the Servers

Verify you have identified all the maintenance releases and Siebel Patchset releases for the upgrade.

> **CAUTION:** Do not install a new Siebel database as part of upgrading the Siebel Enterprise Server.

To perform the following steps, see *Siebel Installation Guide* for the operating system you are using and *Implementing Siebel Business Applications on DB2 for z/OS* .

1. Install the Siebel CRM 8.1 Gateway Name Server and Siebel Servers.

   The upgraded Siebel Servers will not work correctly with the RDBMS server until after you have upgraded the Siebel database to the new release.
2. Install the Siebel Database Configuration Utilities files on the Siebel Server you will use to perform the upgrade.
3. Install language packs for your currently deployed languages and any new languages.
4. If you have customized the configuration of Enterprise components, such as Siebel Servers, you must migrate the customizations to the upgraded environment. For information on this task, see *Siebel System Administration Guide* .

Upgrade the RDBMS

If required, upgrade your version of DB2 for z/OS and DB2 Connect middleware. You might also have to upgrade any DB2 clients that connect to the Siebel database. Refer to the IBM documentation to perform the DB2 for z/OS and DB2 Connect upgrades.

Preupgrade Tasks for the Siebel Database

1. Review guidelines for configuring DB2 for z/OS. See *Implementing Siebel Business Applications on DB2 for z/OS* .
2. Verify that the Workflow Monitor and Workflow action agents have processed all pending requests.
3. Stop the Siebel Servers.

4. Verify there are no open database connections.
5. Remove customized database triggers.

   The Siebel upgrade process is not designed to support custom database triggers. If you have created customized triggers for the Siebel schema to be upgraded, you must remove them before starting the Siebel upgrade process. You can re-create these objects once the Siebel upgrade completes successfully.
6. Prepare the storage control file to use in the upgrade. See *Process of Preparing the Storage Layout of the Schema*.
7. Perform the applicable tasks in the following:

   - *Basic Database Preparations for a Siebel Upgrade*
   - The chapter in *Siebel Database Upgrade Guide* that describes the basic database preparations for a Siebel upgrade

Preupgrade Tasks for Application Data

Perform the tasks in the chapter in *Siebel Database Upgrade Guide* that describes how to prepare Siebel application data for upgrade.

Some of these tasks are optional, depending on the currently installed Siebel products and your upgrade path. Review and perform these tasks as necessary.

Preupgrade Tasks for a Production Environment Upgrade

1. Review the information in *Requirements for Upgrading the Production Environment*.
2. Copy application files to the environment:

   a. Reports files.
   b. Custom style sheets. See the topic on copying UI files to a new Siebel environment in the chapter in *Siebel Database Upgrade Guide* that describes how to perform the Siebel Repository merge.
3. *About Moving the Customized Repository and Schema Definition Files*.
4. Preparing for a No-Development-Environment Siebel Upgrade.

   If you do not have a development environment, see *Preparing for a Siebel Upgrade Without a Development Environment* for information on this task.

Upgrade the Siebel Database Schema (upgrep + upgphys)

If you have completed a production test upgrade and have tuned the SQL and JCL upgrade files on the z/OS host, you can use these files to perform the target database upgrade in the production environment. This approach has several advantages:

- You do not have to generate upgrade files in the production environment and then manually transfer customizations to them from the production test environment.
- You do not have to run the Database Configuration Wizard in Prepare for Production mode again.
- You do not have to run the zSeries Staging of Files for Upgrade process using the Database Configuration Wizard to create the staging database and to generate upgrade files again.

- With some exceptions, you do not have to perform database-related configuration tasks required by *Siebel CRM Update Guide and Release Notes* on My Oracle Support or by Alerts again.

Note: Before using the tuned upgrade files that you generated in the production test environment, you must edit the upgrade files to change the production test environment values to production environment values.

To upgrade the Siebel database schema:

1. Verify you have a current backup of the production environment database.
2. On the Siebel Server you used to upgrade the production test environment, create an ODBC to connect to the production environment database.
3. Edit the tuned upgrade files you generated during the production test environment upgrade. Replace any values in the upgrade files that are specific to the production test environment with production environment values. You might have to change the following values in the upgrade files:
   - Host/LPAR name where the target database resides
   - DB2 subsystem name of the target database
   - Schema/Tableowner qualifier name on the target database
   - ODBC data source name of the target database

   You can edit the upgrade files using any utility that allows you to edit partitioned data sets (PDSs). For advice on editing upgrade files, contact your Oracle sales representative for Oracle Advanced Customer Services.
4. Upgrade the target database using the tuned upgrade files, which now contain production environment information, by performing the following tasks:
   a. *Dropping Partitioned EIM Tables*.
   b. *Applying Additive Upgrade Changes to the Target Database*.
   c. *Renaming the Production Environment Repository*.
   d. *Performing the In-Place Target Database Upgrade*.
5. Extract the storage control file from the target database using the Database Configuration Wizard as follows:
   - Specify the following values when prompted to do so:
     - Extract Options: Extract from Catalog.
     - Storage Control File: Specify the name of the storage control file to be extracted. You must specify the name storage_postupg.ctl.
   - Make sure you specify values for the target database when prompted for the names of the schema Qualifier, ODBC data source, and database user name and password.

     The procedure to extract a storage control file using the Extract From Catalog option is described in *Implementing Siebel Business Applications on DB2 for z/OS* . The extracted target database storage control file is used as input to the upgphys upgrade process.
6. Upgrade the repository and import seed data. See *Upgrading the Repository and Importing Seed Data*.
7. *Activating New License Keys After an Upgrade*.
8. *About the Siebel Upgrade Log Files* .
9. If the upgrade contains unacceptable errors, do the following:
   a. Restore the backup of the database.
   b. Correct the errors.
   c. Rerun the Database Configuration Wizard.
10. *Manually Archiving Upgrade Log Files*.

11. Back up the upgraded production database.
12. *Deleting Redundant Upgrade Files*.

Postupgrade Tasks for Database and File System

1. Perform the relevant tasks in *Postupgrade Tasks for Siebel Database and File System*
2. Perform the following tasks. For information on these tasks, see the chapter in *Siebel Database Upgrade Guide* that describes postupgrade tasks for the Siebel database and file system:
    - Check for inactivated EIM table columns in the Siebel database
    - Validate dock objects and rule definitions in the Siebel database
3. Reset upgrade-specific database and database server parameters back to their recommended settings for production. See *Siebel Installation Guide* for the operating system you are using and *Implementing Siebel Business Applications on DB2 for z/OS* for recommended parameter settings.
4. If you exported data from interface tables before the upgrade, review the database and import the data as desired.
5. Upgrade unencrypted data and data that was encrypted using the standard encryptor to RC2 or AES encryption. For information on this task, see the chapter in *Siebel Database Upgrade Guide* that describes Siebel database and UI upgrade planning.
6. Generate database statistics for new or rebuilt tables and indexes. Determine whether or not any tables must be reorganized by running RUNSTATS with the Report Only option specified. For more information about running statistics, see *Generating RUNSTATS Jobs*.

Note: The production environment is now upgraded. The remaining topics in this chapter deal with configuration and validation tasks.

Postupgrade Tasks for Applications Configuration

1. Review the results of the Person and Organization merge, if applicable. Make configuration changes as required. For further information, see the topic about the Siebel Party Model in the chapter in *Siebel Database Upgrade Guide* that describes Siebel database and UI upgrade planning.
2. Perform the tasks in the following:
    - *Postupgrade Tasks for Siebel Business Applications*
    - The chapter in *Siebel Database Upgrade Guide* that describes the postupgrade tasks for Siebel Business Applications
3. Activate and deploy workflows. To perform these tasks, see *Siebel Business Process Framework: Workflow Guide* .
4. If you have set up integrations for transferring data to or from third-party applications using Siebel EAI, verify the integrations are configured correctly. For information on using EAI, see *Overview: Siebel Enterprise Application Integration* .
5. If you have used EIM to set up batch processing jobs, verify EIM is configured correctly. For information on using EIM, see *Siebel Enterprise Integration Manager Administration Guide* .
6. If you customized style sheet or Web template files in the previous release, implement those customizations in the new release again and execute a full publish in Siebel Tools to compile the Siebel Runtime Repository data.

Perform System Tests

Use available test data to perform unit testing. Validate application function in the following areas:

- User interface
- Data interfaces
- Integrity of migrated data
- Workflow function

Deploy to Users

1. Upgrade your Siebel Mobile and Developer Web Clients. See *Siebel Installation Guide* for the operating system you are using for further information.
2. If you have customized the configuration of Siebel Enterprise Server components, such as Siebel Servers, you must manually enter the customizations in the upgraded environments. For information on this task, see *Siebel System Administration Guide* .
3. Use Siebel Anywhere to create distribution kits for deployment. See *Siebel Anywhere Administration Guide* .
4. Generate a Siebel Remote database template. See *Siebel Remote and Replication Manager Administration Guide* .
5. Set up database extraction for Siebel Mobile Web Clients. See *Siebel Remote and Replication Manager Administration Guide* .

5 Planning a Siebel Database Upgrade

Planning a Siebel Database Upgrade

This chapter describes some of the important database-related issues to consider when planning an upgrade to the current Siebel CRM release. Also review the applicable topics in the chapter in *Siebel Database Upgrade Guide* that describes the Siebel database and UI upgrade planning tasks before starting your upgrade. This chapter includes the following topics:

- *Planning Resources for Upgrading to Siebel CRM on z/OS*
- *Planning Changes to the Physical Layout of the Schema*
- *Testing Before a Production Upgrade*
- *Considering Code Page Support*
- *Executing Jobs Using Siebel-Scheduled Mode or Vendor-Scheduled Mode*
- *Staging and Target Database Planning*
- *Obtaining Required Software and Hardware*
- *Obtaining Required IBM Utilities*
- *About Using the DSNTIAUL Utility*
- *Obtaining Required Security Privileges*
- *Planning Backup and Recovery Stages*
- *About Creating a Schedule for the Upgrade*
- *About Estimating Database Size*
- *Upgrading Your DB2 Software*

Planning Resources for Upgrading to Siebel CRM on z/OS

The chapter in *Siebel Database Upgrade Guide* that describes Siebel database and UI upgrade planning tasks also describes the planning resources available to you before you start to upgrade to the current release of Siebel CRM. This topic describes additional resources available if you use Siebel Business Applications with DB2 for z/OS.

Documentation

Read *Implementing Siebel Business Applications on DB2 for z/OS* , available on the *Siebel Bookshelf* , for information on configuring your Siebel application after you have upgraded to the current Siebel CRM release.

About Oracle's Advanced Customer Services

Oracle's Advanced Customer Services offers detailed implementation planning and technical consulting services. Oracle recommends that you engage Oracle's Advanced Customer Services for help in planning your upgrade on DB2 for z/OS. Oracle's Advanced Customer Services can help you to:

- Take advantage of the new features provided by the latest version of Siebel CRM
- Customize the upgrade scripts and the upgrade process as appropriate for your installation
- Carry out performance tuning on the upgrade scripts to minimize production downtime

For further information, see *About Using Oracle's Advanced Customer Services*.

Planning Changes to the Physical Layout of the Schema

In planning your upgrade, you must understand the existing physical layout of your schema and determine whether or not you have to change the layout for the upgrade to the current release of Siebel CRM. Also consider database space requirements and whether or not you have to move table spaces. These issues are discussed in this topic.

New Database Schema Structure Since Siebel CRM Release 7.7.*x*

Upgrades from: Release 7.5.3 only.

In Siebel CRM Release 7.7.*x*, the current database schema structure, referred to as the *1:1:1* model, was introduced. It has the following characteristics:

- One table in each table space
- One table space in each database

Prior to Siebel CRM Release 7.7.*x*, the database schema was built using approximately 20 databases, each of which contained multiple table spaces. Each of these table spaces (if nonpartitioned) contained multiple tables. The current version of Siebel CRM contains thousands of databases. For example, an SIA installation has approximately 2700 databases. Each database has one table space and each table space has one table.

This model meets IBM recommendations and prevents database descriptor (DBD) locking and logging. These issues arise due to the increasing intensity of DB2 DML and DDL operations and the interaction of these operations with the DBD. The DBD is locked when information about the DB2 objects contained by the DBD is requested and accessed. In general, the more objects a DBD contains, the more probable that a DBD lock will be requested when information about a child object of the DBD is accessed.

Locks are acquired on the DBD table space (DBD01) if a DBD is not in memory (EDM pool). If the DBD is in the EDM pool, no lock is acquired on it if the SQL being run is static. However, most SQL executed by the Siebel application is dynamic; this means locks are acquired on the DBD. For more information on DBD locking, refer to the relevant IBM documentation.

The adoption of the *1:1:1* model since Siebel CRM Release 7.7.*x* means that if you are upgrading from Siebel CRM version 7.5.3, you must decide how much of this model to deploy. You have the following options:

- Create all tables in the *1:1:1* model.

New 8.1 or 8.2 tables are created in the *1:1:1* model and the storage control file supplied with Siebel Business Applications is used for the upgrade.

- Create new tables in the *1:1:1* model and maintain existing tables in their current table space if possible.

  The following scenarios arise if you select this latter option:

  - Some existing tables have to be moved to incorporate the addition of new columns.
  - Some existing tables have to be moved because they have been extended and the addition of new columns causes the table's LRECL to exceed that of the table space. This necessitates the use of the extract and merge methodology to create the storage control file. For more information on this methodology, see *Extracting the Storage Control File*.
  - Tables that are to retain the existing format are merged into the template control file which employs the *1:1:1* model.

  For both options, enter existing tables that are to be migrated to the *1:1:1* model in the file override.inp. See *About the Override File* for further information. For more information on using storage control files, see *Implementing Siebel Business Applications on DB2 for z/OS* .

Preparing a Storage Control File

A key task for a successful upgrade is the building of a suitable storage control file for both the development and production upgrade. You must consider space requirements. This is particularly important for the development upgrade, because three new repositories are imported into the database (one extra repository is imported during the production upgrade). Some repository tables will increase significantly in size, so you must provide sufficient space for expected database growth. For information on preparing a storage control file, see *Process of Preparing the Storage Layout of the Schema*.

About Moving Table Spaces

If you want to move tables from one table space to another, you must recreate the tables in the new table space and then drop the existing table space, if it is empty. You cannot change the bufferpool designation in the storage control file to move tables because the page size is associated with the table space.

For example, if you are making changes to an existing table space that is using BP1 or a 4 KB bufferpool and these changes cause you to receive a warning from ddlimp that the table must now be in a 16 KB bufferpool, do not just change the bufferpool designation in the storage control file from BP1 to BP16K1. Doing so can cause any LONG VARCHAR column in the table to be bigger than is necessary, resulting in performance problems.

Testing Before a Production Upgrade

Careful testing is critical for a successful upgrade. In particular, the production upgrade must be thoroughly tested to avoid data-specific issues and gain the best possible performance during your upgrade.

Note: Do not implement your upgraded Siebel CRM production database without exhaustive performance testing.

Considering Code Page Support

Siebel CRM 8.x supports ASCII-, EBCDIC-, and Unicode-based coded character set IDs (CCSIDs) on DB2 for z/OS. Development databases can use EBCDIC code pages. Databases with EBCDIC code pages support the following procedures in a development environment upgrade:

- Merging prior configuration changes into a new custom configuration repository
- Generating the Siebel Runtime Repository data by executing the Full Publish command in Siebel Tools

Some limitations on databases with EBCDIC code pages include the following:

- Siebel Web Client migration is not supported
- Siebel Dun & Bradstreet server components are not supported

Before you conduct an upgrade, carefully read *Siebel CRM Update Guide and Release Notes* on My Oracle Support for information about known restrictions. For guidelines about choosing the code page for your subsystem, see *Implementing Siebel Business Applications on DB2 for z/OS* . In addition, make sure you follow the rules specified by IBM for character conversion as described in the IBM DB2 installation documentation.

About Code Page Conversion

Siebel CRM supports the ASCII 5348 and EBCDIC 1140 code pages on DB2 for z/OS. If your current Siebel CRM release runs on a different code page, you must migrate to one of the supported code pages before upgrading to the current Siebel release.

Since Siebel CRM 7.5, Siebel Business Applications has supported the Unicode character set. On the z/OS platform, Siebel Business Applications only support the Unicode character set on DB2 for z/OS version 8 running in New Function Mode or later releases. Character conversions from Unicode code pages to ASCII and EBCDIC code pages on the z/OS host are performed by the z/OS Unicode Services; these conversions are required if Siebel Business Applications are to function correctly. For information on setting up the z/OS Unicode Services, see the IBM document about using Unicode Services on the IBM z/OS information center Web site at *http://publib.boulder.ibm.com/infocenter/zos/v1r9/index.jsp*

Check the Siebel schema code page before starting the Siebel upgrade to ensure characters on the target schema will display correctly. Schedule sufficient time to perform and test the code page conversion before beginning the upgrade. For advice and assistance on converting DB2 code pages, contact IBM.

> **Note:** To ensure the euro symbol is implemented correctly in the Siebel database on the z/OS host, enable support for the euro symbol by setting the DB2 Connect system environment variable, DB2CONNECT_ENABLE_EURO_CODEPAGE, to YES on all DB2 Connect computers used to connect to the Siebel CRM database. For additional information on the DB2CONNECT_ENABLE_EURO_CODEPAGE variable, see the relevant IBM documentation.

Executing Jobs Using Siebel-Scheduled Mode or Vendor-Scheduled Mode

Before you perform a production upgrade, determine whether you will execute the jobs using Siebel-provided job scheduling or a third-party vendor scheduler. Choose your scheduling mode carefully, because once you begin an upgrade process under a selected mode, you cannot change your scheduling mode or reverse this decision.

Siebel-provided job scheduling is implemented by default. If you want to use a vendor scheduler, you must edit the data set **`DSNHLQ.SIEBEL.EXEC(@PRETPTH)`** and set the Scheduling option to a value of 2 (Vendor Scheduled).

In Siebel Scheduled Mode, the Siebel job scheduler uses job submission EXECs to run the following upgrade jobs:

- Pret
- Pret_FINS
- Household
- Household_FINS
- Preschm
- Preschm-FINS
- Upglss

The Siebel job scheduler automatically submits dependent jobs by their predecessors.

Using Siebel Scheduled Mode, if a job ends abnormally or returns an invalid return code, the upgrade process is halted. You can check the job status by querying the Siebel job log. For further information, see *Reviewing the Siebel Upgrade Log Files*

If you use a third-party job scheduler, jobs are not submitted automatically. In this case, you will find it useful to first generate the upgrade scripts using Siebel scheduling to gain an understanding of job dependencies.

Logging is provided for both Siebel-scheduled and vendor-scheduled jobs using a DB2 table. Each job contains a step that checks whether or not all the other steps in the job completed successfully. An SQL UPDATE statement is then executed against the log table specifying the job status.

Staging and Target Database Planning

When scheduling your upgrade, be aware that the target database schema must not be changed after the staging DDL is produced. If target database schema changes are applied before the upgrade is completed, you must recreate the staging database and generate the upgrade files again.

When planning your upgrade, keep in mind the following:

- The staging database must be in a separate DB2 subsystem to the target database
- The staging database table space names must be same as those in the target database
- The staging database tableowner and storage group names can be the same or different to the target database names

DB2 DSNZPARM Settings For the Target Database

For Siebel Business Applications to run correctly and efficiently, the DSNZPARM parameters for your target database must be set correctly. For a list of the required and recommended DSNZPARM parameter settings for DB2 for z/OS when using Siebel Business Applications, see *Implementing Siebel Business Applications on DB2 for z/OS* .

Obtaining Required Software and Hardware

Because each enterprise has specific requirements for hardware and software resources, it is recommended that you discuss your particular situation with your Siebel technical resource. Make sure your hardware supports the requirements of your Siebel CRM upgrade.

To verify that your computer, operating system platforms, and third-party programs are supported for the current release of Siebel CRM, see the Certifications tab on My Oracle Support *(https://support.oracle.com)*.

Obtaining Required IBM Utilities

Verify that the following IBM utilities are available for your upgrade to the current release of Siebel CRM:

- DSNTEP2. The upgrade uses DSNTEP2 to execute SQL.

  Prepare and bind DSNTEP2 by following the procedures in your IBM installation documentation. If you made local modifications, you might have to prepare and bind a separate version. Also, if you are using a separate version of DSNTEP2, you have to change the SIEBSQL* members to reflect the new plan and program names.
- DFSORT. The utility DFSORT is used to manipulate data for data migration during upgrade.
- LOAD. The IBM DB2 Load utility is used to load data during data migration.
- REBUILD INDEX. The IBM DB2 REBUILD INDEX utility (DSNUTILB) is used to build indexes after they are created using **`DEFER YES`**.
- IEBCOPY. The utility IEBCOPY is used to create members in installation data sets. Sequential data sets contains control information used by IEBCOPY.
- IEBGENER. The utility IEBGENER is used to copy sequential data sets.
- DSNTIAUL. The upgrade uses DSNTIAUL to unload Siebel application data.

  Compile, link-edit, and bind DSNTIAUL by following the procedures in your IBM DB2 installation documentation.

For information on these IBM utilities, see your IBM documentation.

> **CAUTION:** You can choose to use alternative third-party utility products that are preferred for your environment. Evaluate utilities by individual job. Be aware, however, that if you do use utilities other than those recommended, you might have to modify the SQL supplied with Siebel Business Applications to accord with the rules for those utilities. For help with modifying the SQL supplied with Siebel Business Applications, you must contact your Oracle sales representative for Oracle Advanced Customer Services.

About Using the DSNTIAUL Utility

In Siebel CRM releases since 8.0.*x,* the DSNTIAUL utility is used to unload data from tables. However, the SELECT statements that Siebel CRM 8.*x* uses to specify the selected columns to be unloaded cause DSNTIAUL to issue a warning message and return a nonzero return code for every unload job. This makes the process of determining whether an unload job completed successfully or not difficult.

To avoid this problem, Siebel CRM 8.*x* contains a patch for DSNTIAUL which causes a successful unload job to generate a zero return code by changing the selective SELECT warning message to an informational message. Jobs that generate a zero return code require no further consideration. After you apply the patch to DSNTIAUL, all jobs resulting in nonzero return codes must be reviewed. For further information, see *About Applying the DSNTIAUL Patch*.

About Applying the DSNTIAUL Patch

The DSNTIAUL patch, @@TIAUL USERMOD, is packaged as an SMP/E format USERMOD. The patch is a MACUPD (macro update) because DSNTIAUL is delivered as a macro and not as a source object. The @@TIAUL USERMOD updates the DSNTIAUL assembler source code so that nonzero return codes generated solely by the selective SELECT statements are suppressed. The USERMOD is generic in that it applies to known fix levels of the DSNTIAUL utility.

Note: It is recommended that a DB2 systems programmer who has knowledge of SMP/E and your maintenance process applies the patch.

To apply the patch, copy the @@TIAUL USERMOD code, listed in *The @@TIAUL USERMOD Patch*, and apply it to the SMP/E DB2 target zone on z/OS. You can apply the patch using various methods, for example:

- Use the SMP/E APPLY command to apply @@TIAUL USERMOD directly to the z/OS system, then run assemble, link, and bind jobs to specify it as the default program
- Copy the source member containing the original DSNTIAUL code and add the code from @@TIAUL USERMOD to the copy. Then create an executable with a new name for the new source member.

Note: If you use this method, you might have to change the Siebel upgrade scripts to accommodate any changes to the way in which DSNTIAUL is invoked.

Ask your z/OS system administrator for the most appropriate method to use to apply the @@TIAUL USERMOD at your site.

The @@TIAUL USERMOD Patch

This topic lists the @@TIAUL USERMOD for IBM DB2 UDB for z/OS. Before copying the following code and applying the USERMOD, change the modification control statements to reflect the applicable maintenance level of the existing DSNTIAUL utility; comments in the @@TIAUL USERMOD provide specific instructions.

Note: Sequence numbers must start in column 72.

```
++ USERMOD (@@TIAUL) REWORK(2010007)
 /*
 USERMOD @@TIAUL:
```

```
 ALLOW RETCODE 0 EVEN WHEN SELECTING LIMITED COLUMNS.
 THIS USERMOD WILL CAUSE ONE SECTION OF CODE TO BE BYPASSED.

 THIS SECTION SETS RETURN CODE 4 IN THE CASE OF A SELECT NOT BEING A FULL SELECT WITH "*". THE CHANGE WILL
 NO LONGER FORCE A RETURN CODE 4.

 THE CHANGE ALSO INCLUDES AN "ORACLE81" EYECATCHER.

NOTE:
 THE PRE-REQUISITE (PRE) OPERAND <<MUST>> BE CHANGED ON THE
 ++VER CONTROL STATEMENT TO REFLECT CURRENT MAINTENANCE LEVEL.

 MACRO DETAILS:

 MACRO FMID RMID SYSLIB DISTLIB DATE
 DSNTIAUL HDB8810 UK50731 SDSNSAMP ADSNMACS 2010.01.07

 */ .
++ VER (P115)
 FMID(HDB8810)
 PRE (UK50731)
 /*
 ************************************************************
 * DO NOT ADD LINE NUMBERS TO THIS USERMOD! *
 ************************************************************
 * REP LINE WITH SEQ NUMBERS 04600000 *
 * SKIP LINES WITH SEQ NUMBERS 11900000 TO 11930000 *
 ************************************************************
 */ .
++MACUPD(DSNTIAUL) DISTLIB(ADSNMACS) .
./ CHANGE NAME=DSNTIAUL
 SAVE (14,12),,'DSNTIAULORACLE81&SYSDATE.&SYSTIME' @ORACLE 04600000
*** DO NOT SET WARNING RETURN CODE *** @ORACLE 11895000
 AGO .NOSLCT_BYPASS @ORACLE 11895001
.NOSLCT_BYPASS ANOP , @ORACLE 11935000
./ ENDUP
```

About DSNTIAUL CCSID Conversion Errors

DSNTIAUL unloads all Siebel application data in an EBCDIC CCSID. If the data to be unloaded is in ASCII format, conversion errors can occur for characters that are supported in ASCII but that are not supported in EBCDIC, for example, the euro and copyright symbols. CCSID conversion errors generate a return code of 4 and produce an SQLSTATE of 01517.

If the ASCII data contains a character that cannot be converted to EBCDIC, DSNTIAUL stops the unload process at that point. To correct this problem, you can either:

- Update the source data and rerun the unload jobs
- Use a program, such as the IBM DB2 UNLOAD utility, to complete the load and unload processing
- Specify the DSNTIAUL TOLWARN (YES) parameter

CAUTION: It is recommended that you do NOT use the TOLWARN (YES) parameter because it suppresses conversion error messages and can result in data corruption.

The TOLWARN (YES) parameter forces DSNTIAUL to continue the unload process by inserting substitution characters for characters that cannot be converted; this ensures all records are unloaded even if they contain data that cannot be directly converted from ASCII to EBCDIC.

However, using the TOLWARN (YES) parameter can also cause corrupted data in your upgraded Siebel application. DSNTIAUL provides the same substitution character for all ASCII characters that cannot be converted to EBCDIC. When the data is converted back to ASCII, the substituted characters are all converted back to the same ASCII character, for example, the euro and copyright symbols will both be represented by the same character. After the upgrade, your Siebel application will contain corrupted data and you will have to review the source data to determine which symbol a corrupted character corresponds to.

Obtaining Required Security Privileges

For detailed information about security for DB2 for z/OS installations and upgrades, see *Implementing Siebel Business Applications on DB2 for z/OS* .

In Siebel CRM releases since 8.0.*x*, access privileges to database resources such as tables, views, and triggers are granted to a user group. A user group is a definition within the security package (for example, RACF) that has a common set of users attached to it. Access to the DB2 tables is granted to the user group, and user authentication is performed at the group level. All users belonging to the group are allowed access. All users who are not part of the group are denied access.

The user who executes the upgrade must be a member of a qualified group. To grant this user tableowner privileges, the tableowner must be set up as a qualified group, and the DBA who executes DDLs must be a member of this qualified group. The group ID is the qualifier (for example, RACF group ID).

The Siebel installation process allows the installer to specify the group user name for client access (the default is SSEROLE), and the resulting installation scripts generate the appropriate GRANT statements. GRANT statements for additional security groups that might be required must be created manually.

> **Note:** The GRANT statements must be executed by either the tableowner, a database administrator, or a system administrator.

The following privileges are necessary for the user who performs the upgrade:

- Read the DB2 catalog
- Execute stored procedures
- Bind stored procedures

Because each enterprise has specific requirements, it is recommended that you discuss your particular situation with your Siebel technical resource.

Planning Backup and Recovery Stages

In addition to the backup and recovery procedures that are standard for your environment, take a set of DB2 backups at key stages during the upgrade, using your preferred utility. A snapshot of your repositories and environment at these stages protects the progress of your upgrade in the event of a failed subsequent process.

It is recommended that you back up your Siebel schema at these key stages of the upgrade:

- Before any upgrade activity is started
- Before performing unloads

Note: Unloads must be performed when there is no system activity, so that the database is at a point of consistency.

- After upgrading the Siebel database schema
- After the repository merge
- After upgrading the custom database schema

Review the results of all JCL jobs that you execute during the install or upgrade process. You can use a spool viewer such as IBM's SDSF to inspect the output from these jobs. You can review this information in addition to reviewing the upgrade log files.

About Creating a Schedule for the Upgrade

Develop a plan for your upgrade based on the objectives and constraints for your deployment.

If you are migrating multiple languages from a prior version, plan extra time for the repository merge process. The expected merge time can increase with the number of languages in the repository. You also might have to plan for additional installation-related tasks.

The following procedures can reduce the time required for your upgrade:

- Run selected processes in advance of the upgrade.

  Certain preupgrade tasks can be run at any time prior to the upgrade. These procedures can be performed in advance either for testing purposes or to accommodate downtime constraints.

  Examples of procedures that can be performed by a database administrator in advance of your upgrade include *Process of Preparing the Storage Layout of the Schema*.
- Apply additive schema changes to the production database ahead of the target database in-place upgrade. See *About Siebel Additive Schema Upgrade Changes* .
- Prepare select processes to run in parallel.

  If a large table such as **S_EVT_ACT** is partitioned, it can run in parallel by transferring shipped statements into the numbered SQL statement.

  Do not start a new development effort until after the new version has been rolled out.

About Estimating Database Size

Database upgrade is resource intensive. If the upgrade exceeds available resources, the upgrade halts. You must then resolve resource issues before resuming the upgrade.

To help you estimate the database size required when upgrading to the current Siebel CRM release, the following table shows the number of tables in 4-KB, 8-KB, 16-KB, and 32-KB table spaces in a sample Siebel Industry Applications database in a 7.8, 8.0 and 8.1 release. The following table also shows the space required by the tables.

Because Siebel CRM adopted a 1:1:1 database schema structure since Siebel CRM 7.7 (one table in each table space, one table space in each database), these releases require many more 16-KB and 32-KB table spaces than pre 7.7 releases. However, some tables might not require 16-KB and 32-KB table spaces if you convert LONG VARCHAR columns to CLOB columns.

Actual expected growth might also vary widely from these estimates, depending on which Siebel application you are using (Siebel Business Applications or Siebel Industry Applications), database configuration, row size of tables, data content, and code page. The number of tables and space estimates shown in the following table for Siebel CRM are for an EBCDIC database.

Release	4-KB Table Space	8-KB Table Space	16-KB Table Space	32-KB Table Space
8.1	4136 (5,194,752 KB)	375 (828,416 KB)	182 (71,680 KB)	115 (134,144 KB)
8.0	4229 (2,759,008 KB)	331 (312,112 KB)	171 (62,272 KB)	105 (52,160 KB)
7.8	3857 (569,442 KB)	Not applicable	459 (237,735 KB)	86 (224,62 KB)

Note: This table shows the space required by the tables in a release but does not include the space required by indexes. The values shown are adjusted for compression.

Upgrading Your DB2 Software

Upgrades: All upgrades.

Environments: Development environment only.

Before you upgrade, use the Certifications tab on My Oracle Support to verify that you are using currently supported versions of the following DB2 software:

- DB2 for z/OS. If you are using an earlier version of DB2 for z/OS than the versions currently supported, you must migrate to a supported version before you upgrade to the current release of Siebel CRM.
- DB2 Connect. Siebel Developer Web Clients (Siebel Mobile Web Client in connected mode) and Siebel Servers communicate with DB2 for z/OS through DB2 Connect middleware. Verify that you are using the version of DB2 Connect supported for the current release of Siebel CRM.

6 Basic Database Preparations for a Siebel Upgrade

Basic Database Preparations for a Siebel Upgrade

This chapter describes the DB2 for z/OS database tasks you must complete before upgrading to the current Siebel CRM release. Also review the chapter in *Siebel Database Upgrade Guide* that describes the basic database preparations for a Siebel upgrade and perform any applicable tasks before starting your upgrade. This chapter includes the following topics:

- *Verifying Database Configuration*
- *Creating Storage Groups*
- *Updating Table Space Group Names*
- *Process of Preparing the Storage Layout of the Schema*
- *Reviewing EIM Table Partitioning*
- *Converting LONG VARCHAR Columns to CLOB Columns*
- *Rebuilding Target Tables Containing LONG VARCHAR Columns*
- *Backing Up the Database*
- *Granting a Siebel User Upgrade Authorization*

Verifying Database Configuration

Upgrades: All upgrades.

Environments: All environments

Verify that your development Siebel database configuration meets or exceeds Siebel requirements as described in *Implementing Siebel Business Applications on DB2 for z/OS* . Be aware of the following:

- The upgrade sets the TRACKMOD parameter to YES, which is the IBM default value for table space objects. Oracle recommends that you set the TRACKMOD parameter to NO, to reduce data sharing overhead.
- Set the DSNZPARM CMTSTAT to INACTIVE to prevent timeout errors from occurring. If you do not set this DSNZPARM parameter to INACTIVE, then set IDTHTOIN to 0 (Inactive).
- Ensure the z/OS Unicode Conversion Services are correctly installed and configured. For further information on z/OS Unicode Conversion Services, see *Implementing Siebel Business Applications on DB2 for z/OS* .

Before you begin your upgrade, verify your database configuration. The consequence of exceeding available resources is a halted upgrade that requires you to allocate time to adjust the environment and then resume the upgrade.

Before you begin an upgrade or Incremental Repository Merge, you must have a default WLM environment defined for the DB2 subsystem.

When you upgrade from a previous version of Siebel Business Applications to the current release, the size of your database is likely to increase. The amount by which your database grows might vary widely, depending on your database configuration, row size of tables, and data content. For information on estimating the growth, see *About Estimating Database Size*.

The growth percentage will also increase depending on how you size your database and configure default storage for database table spaces. For example, if you set the default storage for your initial or next extent in a given DB2 table space to 10 KB, that table space will grow by a smaller percentage than if you set it to 100 KB.

Creating Storage Groups

Upgrades: All upgrades.

Environments: Development environment only.

Before upgrading the Siebel database, your DBA must create storage groups on the staging database. The names used to define the storage groups for the staging database can be the same or different to those defined on the target database.

Updating Table Space Group Names

Upgrades: All upgrades.

Environments: Development environment only.

Each Siebel table is assigned a group code number, which is stored in the GROUP_CD column of the S_TABLE table in the Siebel Repository. The group code identifies the name of the DB2 table space that is used when the table is created or re-created.

During the upgrade process, if the table space associated with a table does not match the group code defined for the table, errors occur. Therefore, it is recommended that you update S_TABLE with any changes that have been made to table space names, as reflected in the DB2 catalog. By updating S_TABLE, you ensure that the group names in the Siebel Repository and in your physical database environment are synchronized.

The following procedure describes how to update the S_TABLE table.

To update table space group names

- To update the table space group names, execute the following query:

```
UPDATE SIEBEL.S_TABLE A

SET A.GROUP_CD = (SELECT B.TSNAME FROM SYSIBM.SYSTABLES B WHERE A.NAME = B.NAME
AND B.CREATOR = SIEBEL)
WHERE A.INACTIVE_FLG = 'N' and A.REPOSITORY_ID = (SELECT B.ROW_ID FROM
SIEBEL.S_REPOSITORY B
WHERE B.NAME = 'Siebel Repository')
```

where SIEBEL is your Siebel schema qualifier name.

Process of Preparing the Storage Layout of the Schema

Upgrades: All upgrades.

Environments: All environments

Before starting the upgrade, you have to prepare the storage control file you will use during the upgrade.

The storage control file contains information about physical schema attributes, including bufferpools, table space name and database name, that is used as the basis for the storage layout of your new 8.x Siebel database. Even if you are using a preconfigured storage layout, you must make sure that the layout is valid for your schema.

To preparing the storage control file, perform the following tasks:

1. Review the following:
   - *Methods of Modifying the Storage Control File*
   - *Options for Extracting the Storage Control File*
2. *Extracting the Storage Control File*
3. *Validating the Extracted Storage Control File*
4. *Reviewing the Extracted Storage Control File*

Note: You must validate the storage control file after you extract it and after you modify it.

There are different starting points from which you can customize your storage layout:

- Scenario 1. Begin with a Siebel-provided storage layout template, import the template into the Siebel Database Storage Configurator (dbconf.xls), customize it, then export it as your customized layout.
- Scenario 2. Use your current configuration from an existing database layout and merge it with one of the Siebel-provided templates. This can then be imported to the Siebel Database Storage Configurator for further manipulation. For more information on the Siebel Database Storage Configurator, see *Implementing Siebel Business Applications on DB2 for z/OS* .

To prepare the storage control file, use the Database Configuration Wizard to extract the storage layout of your database from the DB2 catalog. As part of the extraction process, you can merge the storage layout information from your existing database with information you already input into a storage template file or information in a template provided with Siebel Business Applications.

As an alternative, instead of extracting the storage layout of your existing database, you can use a template provided with Siebel Business Applications as the storage control file. For more information about templates for the storage control file, see *Implementing Siebel Business Applications on DB2 for z/OS* . Siebel Business Applications provide the templates listed in the following table for the storage control file.

Template	Description
storage_np.ctl	Database storage layout for a nonUnicode Siebel schema with no partitioning scheme
storage_np_u.ctl	Database storage layout for a Unicode Siebel schema with no partitioning scheme
storage_p.ctl	Database storage layout for the Siebel schema with partitioning for a set of tables on an ASCII database

Template	Description
storage_p_e.ctl	Database storage layout for the Siebel schema with partitioning for a set of tables on an EBCDIC database
storage_p_u.ctl	Database storage layout for the Siebel schema with partitioning for a set of tables on a Unicode database

Methods of Modifying the Storage Control File

This topic describes the different ways in which you can configure the storage layout of your schema.

This task is a step in *Process of Preparing the Storage Layout of the Schema*.

There are three methods by which you can configure storage space:

- Method 1. This method consists of performing a standard Siebel database installation by running the Database Configuration Wizard, choosing the Generate DDL into a File installation option, and specifying as input one of the Siebel storage control file templates. This process generates the following:
  - A storage control file, based on the Siebel template file you selected, that incorporates the configuration information you entered when you ran the Database Configuration Wizard. This file is generated in the **dbsrvr\DB2390** (Windows) or **dbsrvr/DB2390** (UNIX) directory
  - A schema.sql file that is applied on the z/OS host to create the Siebel schema. The schema.sql file is based on the customized storage control file generated by the database install

  Using these files, you can then configure storage space in any of the following ways:

  - Amend the storage control file generated during the database install in the **dbsrvr\DB2390** (Windows) or **dbsrvr/DB2390** (UNIX) directory (see also Method 2).
  - Apply the schema.sql file generated by the database install on the DB2 host to create the Siebel schema, then amend the schema using native DB2 tools. Extract the storage control file from the DB2 catalog; the file will include the changes you have made.

    Note: You access the extract utility through the Database Configuration Wizard. This utility allows you to extract information from the DB2 catalog. You can use this extract utility any time you want to create a new storage control file, based on the DB2 catalog.

  - Amend the schema.sql file generated by the database install directly, apply it on the DB2 host to create the schema, and then extract the storage control file, which will include the changes you made.

  For information on installing the Siebel database and extracting storage control files, see *Implementing Siebel Business Applications on DB2 for z/OS* .
- Method 2. This method consists of manipulating the storage control file (storage.ctl) directly by opening it with a text editor program. This method can be used if you understand the file structure.

  You can use this method to amend one of the Siebel-supplied storage control files or to amend a storage control file that you have extracted from another Siebel schema.
- Method 3. This method consists of using the Siebel Database Storage Configurator tool. The Siebel Database Storage Configurator tool is a Microsoft Excel macro (dbconf.xls) that is installed in the **dbsrvr\db2390** (Windows) or

`dbsrvr/db2390` (UNIX) subdirectory of your installation directory. This tool allows you to import a storage control file, amend it, validate the syntax of your changes, and then save it.

UNIX customers must transfer dbconf.xls and the .ctl files to their Microsoft Windows environment. Use BINARY FTP transfer for the dbconf.xls file. For information on using the Siebel Database Storage Configurator, see *Implementing Siebel Business Applications on DB2 for z/OS* .

Note: Validate the storage control file after you modify it. See *Validating the Extracted Storage Control File* for further information.

Options for Extracting the Storage Control File

This topic describes the options available when you run the Database Configuration Wizard to extract the storage control file.

This task is a step in *Process of Preparing the Storage Layout of the Schema*.

The information in your storage control file comes from the target database, that is, the database to be upgraded.

When you extract the storage control file, you can choose one of two methods:

- Extract from Catalog
- Extract from Catalog and Merge with Template

Extract from Catalog

This method extracts the storage layout of your existing database from the DB2 catalog; the output is a representation of the existing target database objects.

Use this option when creating the storage control file that is used to generate the DDL to build the staging database schema. For information on this task, see *Required Tasks before Creating the Staging Database*.

The Extract from Catalog method can also be used to perfect your target database layout by performing a dummy installation, manipulating the schema layout through native utilities, then extracting the customized layout. For information on the Extract from Catalog option, see *Implementing Siebel Business Applications on DB2 for z/OS* .

Extract from Catalog and Merge with Template

This method preserves your existing layout. This method merges storage layout information from your existing database with a storage template file provided with Siebel Business Applications. This preserves your prior layout, and your output is the prior physical layout merged with a storage layout template for the current release.

After you have created the staging database, use the Extract from Catalog and Merge with Template option to extract the storage layout of the Siebel staging database from the DB2 catalog and merge it with a storage control file for the current release so as to preserve any customizations you have made to the database layout in the upgraded database. For information on this task, see *Required Tasks for Generating the Upgrade Files*.

Objects Extracted to the Storage Control File

When you select the Extract from Catalog and Merge with Template option, the extracted storage control file does not list all database objects in the Siebel schema. The following list details scenarios that might occur during the extract and merge process and the behavior you can expect in these cases:

- A database object exists in the existing database but not in the template. The definition of the database object is output to the new storage control file.
- A database object is specified only in the template file. The definition of the database object is output to the new storage control file.
- A database object is specified in both the existing database and the template. The layout of the existing database is extracted as the default. However, you can manually override this behavior by creating a file called override.inp in the `BIN` directory under SIEBEL_ROOT. Place any tables that you want to override into this file.

Note: Index objects are not output to the new storage control file if they are specified in both the existing database and the template and if there are no specific attribute differences between them. In this case, if you import the extracted storage control file into the Siebel Database Storage Configurator (dbconf.xls), the index objects are not displayed and their attributes cannot be edited.

Extracting the Storage Control File

After you have created the staging database but before you begin to generate the upgrade files, you must extract the storage control file from the staging database and merge it with a Siebel CRM template. You do this using the Database Configuration Wizard Extract from Catalog and Merge with Template option. Depending on the type of upgrade you are performing, assign one of the following names to the extracted storage control file:

- Development environment upgrade: storage_upg_dev.ctl
- Production environment upgrade: storage_upg_prod.ctl.

This task is a step in *Process of Preparing the Storage Layout of the Schema*.

To extract the storage control file

1. Run the Database Configuration Wizard.

   For information on running the Database Configuration Wizard, see *About Running the Database Configuration Wizard on Windows* or *About Running the Database Configuration Wizard Under UNIX*.
2. Enter the information shown in *Information Required for the Database Configuration Wizard Extract Option* when prompted by the Database Configuration Wizard. Collect this information and verify it before running the utility.
3. Save the information you have entered and launch the Upgrade Wizard as described in *Running the Database Configuration Wizard to Perform Upgrade Tasks*

   The database catalog is read and your prior custom database layout is merged with one of the Siebel database layout templates for the current release (located in the `DBSRVR_ROOT\db2390` directory). New objects take a layout from one of the layout templates. By default, new tables are created as one-table-per-database to prevent concurrency and locking errors.

Note: If you choose a Siebel storage control file template that includes partitioning, and the existing database schema does not include partitioning, by default, the existing database objects are not partitioned in the storage control file generated (that is, the database catalog overrides the templates) unless you specify the table names in the override input file (override.inp).

Before using the merged storage control file, you must verify it against the staging database. For information on this task, see *Validating the Extracted Storage Control File*.

Information Required for the Database Configuration Wizard Extract Option

The following table lists the information you must enter to run the Database Configuration Wizard Extract and Merge option.

Field Name or Menu	Required Information
Siebel Server Directory	The absolute path of the directory where the Siebel Server is installed, for example, `C:\sba81\siebsrvr` (Windows) or `siebel/siebsrvr` (UNIX). For UNIX, do not enter the string `$SIEBEL_ROOT`.
Siebel Database Server Directory	The absolute path of the directory where the Siebel Database Configuration Utilities are installed, for example `C:\sba81\dbsrvr` (Windows) or `siebel/dbsrvr (UNIX).`
RDBMS Platform	Choose IBM DB2 UDB for z/OS.
Siebel Database Operation	Choose Run Database Utilities.
Database Utilities Selection	Choose Configure Database
Database Configuration Options	Choose Extract Storage File to extract a storage control file.
Extract Options	Choose the Extract from Catalog and Merge with Template option. This option preserves your existing layout. This option merges storage layout information from the database you specify with information that you already entered into a storage control file, only taking objects from the template that do not already exist in the catalog. **Note:** The first time that you run an upgrade, you must use the Extract from Catalog and Merge with Template option, thereby preserving your existing layout.
Base Language	On the Base Language screen, specify which language serves as the primary language for the Siebel database. If you installed a single Siebel language pack, the Base Language screen is not displayed.
ODBC Data Source Name	Verify the ODBC name for connecting to the staging Siebel database.

Field Name or Menu	Required Information
	Windows: To find the name of your ODBC data source, navigate to the Start menu and select Settings, Control Panel, Administrative Tools, and then Data Sources (ODBC). Click the System DNS tab to find the name of your ODBC data source. UNIX: To find the name of your ODBC data source, type: **`vi $ODBCINI.`**
Database User Name Database Password	Enter the user name and password for the Siebel administrator of the staging database. **Note:** The staging database user name (user ID) must have authorization to set the CURRENT SQLID.
Siebel Schema Qualifier	Enter the eight-character identifier that designates the Siebel schema for your staging database. This is also an authorization ID. The schema qualifier must start with a letter, cannot contain special characters, and must be entered in uppercase.
Database Encoding	Specify whether your database is UNICODE or Non-UNICODE. If you select Non-UNICODE, click Next, then indicate whether your DB2 subsystem is ASCII or EBCDIC.
Environment Type	Indicate whether your database environment is production or development.
Select Siebel Schema Layout	Choose Siebel Schema without Partitioning if you want all tables only in segmented table spaces. Choose Siebel Schema with Partitioning if you want a layout that includes a set of tables that is recommended for partitioning. The remaining nonpartitioned tables are in segmented table spaces.
Default Table Space	Enter the name of the default table space.
Storage Group for Table Spaces Storage Group for Indexes	Indicate the values for the following parameters: Storage Group for Tablespaces. Enter the name of the table storage group. Storage Group for Indexes. Enter the name of the index storage group.
4KB Buffer Pool Name 8KB Buffer Pool Name 16KB Buffer Pool Name 32KB Buffer Pool Name Index Buffer Pool Name	Indicate the values for the following parameters: 4KB Buffer Pool Name. Enter the 4-KB buffer pool name for your table spaces or accept the default name, BP1. The DBA must have activated this buffer pool and granted access to it. 8 KB Buffer Pool Name. Enter the 8-KB buffer pool name for your table spaces or accept the default name, BP8K1. The DBA must have activated this buffer pool and granted access to it. 16KB Buffer Pool Name. Enter the 16-KB buffer pool name for your table spaces or accept the default name, BP16K1. The DBA must have activated this buffer pool and granted access to it. 32KB Buffer Pool Name. Enter the 32-KB buffer pool name for your table spaces or accept the default name, BP32K1. The DBA must have activated this buffer pool and granted access to it. Index Buffer Pool Name. Enter the buffer pool name for indexes or accept the default name, BP2. The DBA must have activated this buffer pool and granted access to it.
Database Name Prefix	Enter the prefix to assign to the names of logical Siebel databases on the target database. The default prefix is SIDB.

Field Name or Menu	Required Information
	Note: The prefix can consist of a maximum of four characters in length, it must start with a letter, and it cannot contain any special characters. The database name prefix must be the same for all database objects in the Siebel schema because the prefix identifies an object as belonging to the Siebel schema. Siebel utilities can recognize and use Siebel objects only if they follow Siebel naming conventions.
Storage Control File	Enter the directory path and name for the storage control file created by this process. You must accept the default value displayed in the Storage Control File field; this varies depending on the type of upgrade you are performing: • Development environment upgrade: storage_upg_dev.ctl • Production environment upgrade: storage_upg_prod.ctl.
Log Output Directory	Accept the default directory (dbconfig_extract_merge_mf) or enter a different directory name. If the directory does not exist, it will be created. Do not use special characters such as spaces, slashes, or symbols in the name of the log output.

Validating the Extracted Storage Control File

When you have extracted your existing database storage control file and merged it with a Siebel CRM template in preparation for the upgrade, you must validate the storage control file. (You must also validate the storage control file any time you modify it.) The validation process checks that the tables are the correct length for the target schema. Do not proceed with the upgrade until the validation process runs without error.

This task is a step in *Process of Preparing the Storage Layout of the Schema*.

The following procedure describes how to validate the storage control file you extracted and merged as described in *Extracting the Storage Control File*.

To validate the storage control file

1. Run the Database Configuration Wizard.

   The procedure to validate a storage control file using the Database Configuration Wizard is also described in *Implementing Siebel Business Applications on DB2 for z/OS* .
2. Specify the following values:
   a. On the Database Configuration Options screen, select the Validate Storage File option.
   b. On the Data Transport Method screen, select the Batch - Generate Unload/Load option.
   c. On the following screens, make sure you specify values for the staging database:
      - ODBC Data Source Name
      - Database User Name
      - Siebel Schema Qualifier
   d. On the Schema File screen, specify the following values:

- Schema File: Specify the directory path and filename of the file against which the extracted file is to be validated. For development environment upgrades, specify the ddl.ctl file. For production environment upgrades, specify the schema.ddl file.
- Storage Control File: Specify the name of the storage control file you extracted and merged in *Extracting the Storage Control File*. For development environment upgrades, specify storage_upg_dev.ctl. For production environment upgrades, specify storage_upg_prod.ctl.

3. When you have entered all the required values and reviewed them, launch the Siebel Upgrade Wizard to start the validation process. See *Running the Database Configuration Wizard to Perform Upgrade Tasks*.
4. When validation completes, review the log files, upgwiz.log and schema.log, that are generated in the **`SIEBEL_ROOT\LOG\dbconfig_validate_mf\output`** directory (Windows) or the **`SIEBEL_ROOT/LOG/dbconfig_validate_mf/output`** directory (UNIX).
   If any validation errors occurred, correct them, and then run the validation process again.

   Note: For information about the other files (such as, sql and ldc) that are generated during this process, see *Siebel CRM z/OS Upgrade Files*.

About Validation Errors

Run the validation process until no errors are reported. The most common reason that the validation process fails is because table spaces for the Siebel schema are not large enough to hold the new table definitions. If this error occurs, examine the validation log file and identify the names of the buffer pools associated with the table spaces generating errors. Increase the bufferpool sizes as necessary in the storage.ctl file.

You can amend the storage control file using any of the methods described in *Methods of Modifying the Storage Control File*. To amend buffer pool sizes associated with table spaces generating errors using the Database Storage Configurator (dbconf.xls), perform the following procedure. For further information on using the Database Storage Configurator, see *Implementing Siebel Business Applications on DB2 for z/OS* .

To amend bufferpool sizes using dbconf.xls

1. Open dbconf.xls and select Enable Macros when prompted.
2. Import the storage control file that generated the validation errors:
   a. With the Home tab active, click Import.
   b. Go to the directory where your storage control file is located and double-click the appropriate file.
   c. When the import process is completed, click OK.
3. The following message appears:

   ```
   Please enter default values for your system
   ```

   Either amend the values for the displayed parameters, or accept the default values. (This screen does not appear if you have already set the default values.)
4. Click Set.
5. You are prompted to indicate whether or not you want to import row lengths. Select No.
6. Select the Functions tab, then click the Tools tab.
7. Click the Repair BP Validation button.

8. Select the log file generated by the validation process by double-clicking on the file, or selecting the file and clicking Open. This file lists the names of the buffer pools associated with the table spaces generating errors.
9. The Database Storage Configurator updates the buffer pool sizes for the table spaces generating errors in the storage control file. When the process is completed, the following message is displayed.

   ```
   Bufferpools have been updated successfully!
   ```

10. Click OK.
11. Click the Home tab, and then click Export to save the amended storage control file. Save the file with the same filename. A message is displayed stating that the file will be validated (the syntax is validated).
12. Click OK. When the validation process is completed, a message is displayed if the file contains any values that require review.
13. Click OK. The values in the file that require a review are displayed, such as Error: (highlighted in the color Red) and Warning: (highlighted in the color Yellow).
14. Make a note of the object that is generating the error or warning; the relevant object type tab and the object are highlighted. Click OK.
15. Navigate to the object that generated the validation warning or error by selecting Structures, and then *object type*. Amend the highlighted values if required, then export the file again.
16. When the validation process is completed successfully and you have exported the file, exit from the Database Storage Configurator.
17. Validate the storage control file against the target schema again using the Database Configuration Wizard.

Reviewing the Extracted Storage Control File

After you have extracted the storage control file, you must carefully review and edit it to meet your requirements.

> **Note:** If you extracted the storage control file on a Siebel Server that is on a UNIX operating system platform, and you would like to amend the file using the Siebel Database Storage Configurator utility (dbconf.xls), transfer the storage control file to a Microsoft Windows computer which has Microsoft Excel installed using a BINARY FTP file transfer mode. Using BINARY FTP transfer ensures that carriage returns in the storage control file are maintained and transferred correctly.

This task is a step in *Process of Preparing the Storage Layout of the Schema*.

To review the storage control file

1. Navigate to the storage control file which is located in the directory that you specified when you ran the Database Configuration Wizard to extract the file.
2. Check the following parameters in the control file and modify them as appropriate for your database.

   > **Note:** Do not change the defaults for the following parameters in [Object 1] in the storage control file: IndexStogroup, IndexBp, PriQty, SecQty.

   [Object 1]

   ```
   Type = Defaults
   Name = Defaults
   Database = $DbnamePrefix0000
   Tablespace = SIEBTS00
   Stogroup = $StogroupTables
   IndexStogroup = $StogroupIndexes
   ```

```
IndexBp = $IndexBufferPool
Bufferpool = $4KBufferPool
Locksize = Page
SegSize = 32
LockMax = 0
PriQty = 48
SecQty = 1440
PctFree = 17
FreePage = 0
Compress = Yes
Define = No
Erase = No
CCSID = $DbType
```

[Object 2]

```
Type = Database
Name = $DbnamePrefix0000
LockSize = Page
```

[Object 3]

```
Type = Tablespace
Name = SIEBTS00
Database = $DbnamePrefix0000
Bufferpool = $4KBufferPool
Stogroup = $StogroupTables
LockSize = PAGE
LockMax = 0
SegSize = 32
PriQty = 48
SecQty = 1440
PctFree = 17
FreePage = 0
Compress = No
Partitions = 0
Define = 0
Erase = 0
```

3. Once you have a storage layout that you are satisfied with, you are ready to continue with your upgrade.

   Every time you modify the storage control file, you must validate it again. For additional information, see *Validating the Extracted Storage Control File*.

Related Topic

Process of Preparing the Storage Layout of the Schema

Reviewing EIM Table Partitioning

Upgrades: All upgrades.

Environments: All environments

Partitioning Siebel Enterprise Integration Manager (EIM) tables can improve EIM processing performance. In general, it is recommended that you partition EIM tables based on the IF_ROW_BATCH_NUM column. This method of partitioning allows an EIM batch input to be assigned to one partition, thereby allowing multiple EIM batches to be run in parallel.

Before you begin the database upgrade, review the current method of partitioning EIM tables in your implementation to make sure that it is still appropriate, and modify your partitioning keys if required. If you need help with reviewing the partitioning design of your EIM tables, contact your Oracle sales representative for Oracle Advanced Customer Services to request assistance.

For additional information about EIM table portioning, see *Implementing Siebel Business Applications on DB2 for z/OS* .

Converting LONG VARCHAR Columns to CLOB Columns

Upgrades: Releases 7.5.3, 7.7.

Environments: All environments

This topic is part of an upgrade process. See *How to Perform a Siebel Database Upgrade*.

In Siebel CRM Release 8.*x* and 7.8.*x*, the LONG VARCHAR columns of the following Siebel tables are converted to CLOB columns on z/OS to make sure data truncation problems do not occur:

- S_BITMAP_DATA
- S_DMND_CRTN_PRG
- S_EVT_MAIL
- S_NOTE
- S_NOTE_ACCNT
- S_NOTE_CON
- S_NOTE_OPTY
- S_SCHMST_DBSCPT
- S_SCHMSTEP_SCPT
- S_SERVICE_SCRPT

Before upgrading to Siebel CRM from a pre-7.8.*x* release of Siebel Business Applications, if any of these tables are already in 32 KB buffer pools, convert the LONG VARCHAR columns in these tables to CLOB data types to make sure the columns are not truncated if, for example, a column is added to the table during the upgrade. For additional information, see 556105.1 (Article ID) on My Oracle Support.

CAUTION: For pre-7.8*x* upgrades, you must convert the SCRIPT column of the S_SERVICE_SCRPT table from a LONG VARCHAR data type to a CLOB data type before you begin the upgrade. If you do not, the repository merge process fails because the row length of the table exceeds the DB2 limit. Changing the data type of the SCRIPT column in the S_SERVICE_SCRPT table involves dropping and re-creating the table. Ask your DBA to perform this task or create a service request (SR). You can log service requests by accessing My Oracle Support (Service Request tab), or by using your existing phone support numbers to contact Oracle Global Customer Support.

Rebuilding Target Tables Containing LONG VARCHAR Columns

This topic describes how to rebuild tables in the target database that contain LONG VARCHAR columns.

In previous Siebel CRM releases, LONG columns in the Siebel repository were mapped to LONG VARCHAR columns on z/OS databases. The DDLIMP utility has now been modified so that LONG columns are created on z/OS as VARCHAR columns with a maximum size of 16,350 characters. This change to DDLIMP can result in inconsistencies between the staging database, on which LONG columns are mapped to columns with a maximum size of 16,350, and the target database where a LONG VARCHAR column can be much larger.

The Siebel upgrade process requires that the staging database represents the target schema to be upgraded so differences in column definitions can cause issues during the upgrade. For example, a Siebel target table in a 32-KB table space can have a LONG VARCHAR column whose length exceeds 16,350 characters. However, when the same column is created in the staging database, it has a maximum length of 16,350 characters. In these circumstances, if the upgrade process attempts to add columns to the staging table as an additive change it will succeed, but will fail when the changes are applied to the target database.

To avoid potential issues during the target database upgrade, if a table in the target database resides in a table space within a 32-KB buffer pool, and if the number or size of the table columns will be increased during the upgrade process, then the table must be re-created so that it has the same column definitions as the corresponding staging database table.

Note: You can rebuild target tables at any time before you start the upgrade but you must have completed this task before you apply Additive schema changes to the production staging database.

To rebuild target tables that contain LONG VARCHAR columns

1. Determine which target tables containing LONG VARCHAR columns need to be re-created.

   To do this, edit and then run the sample code listed in *Sample Code for Generating a List of Tables to Rebuild*.
2. Unload data from each non-empty table included in the list.
3. Drop each of the tables included in the list, including empty tables.
4. Synchronize the target database logical and physical schemas by launching the Database Configuration Wizard and selecting the Synchronize Schema Definition option. Specify values as follow:

   - When prompted to enter the database user name and password, specify values for the target database.
   - When prompted for the name of the repository with which the existing Siebel database is to be synchronized, specify the following values:

     - Production upgrades: Siebel Repository
     - Development upgrades: Prior Customer Repository

   The Wizard generates the DDL required to synchronize the Siebel database and the Siebel Repository. If you did not select the Run DDL Automatically installation option, then the Wizard generates files that you must apply on the z/OS database to re-create the tables you dropped in the previous step.
5. Reload the tables with the data that you unloaded in step 2.

For detailed information on running the Synchronize Schema Definition process, see *Implementing Siebel Business Applications on DB2 for z/OS* .

Sample Code for Generating a List of Tables to Rebuild

The following sample SQL code can be used to generate a list of the target tables with LONG VARCHAR columns that need to be re-created before applying ADDITIVE schema changes.

Run this code against the staging schema after the additive changes are applied to the Siebel staging database. If no tables match the selection criteria in the code, then you do not have to rebuild any target tables.

```
--
-- CREATE A DROP LIST FOR LONGVARCHAR TABLES
--
SELECT
SUBSTR(
CONCAT(
CONCAT(' DROP TABLESPACE ' ,
CONCAT(STRIP(T.DBNAME) ,
CONCAT('.',
STRIP(T.TSNAME)
)
)
)
, ' /'
)
, 1, 36) AS STATEMENT
,CONCAT(' -- ', T.NAME) AS COMMENT
FROM SYSIBM.SYSTABLES AS T
WHERE
T.CREATOR = STAGING_TABLE_OWNER --<<< STAGING TABLE OWNER AND
T.NAME NOT LIKE 'EIM_%'
AND
EXISTS (SELECT 1 -- longvarchar table
FROM SYSIBM.SYSCOLUMNS C
WHERE C.TBCREATOR = T.CREATOR
AND C.TBNAME = T.NAME
AND C.COLTYPE = 'VARCHAR'
AND C.LENGTH=16350)
AND
EXISTS (SELECT 1 -- has been altered
FROM SYSIBM.SYSCOLUMNS K
WHERE K.TBCREATOR = T.CREATOR
AND K.TBNAME = T.NAME
AND K.ALTEREDTS != T.CREATEDTS)
ORDER BY 1
;
```

whereSTAGING_TABLE_OWNER is the staging database table owner in your environment.

The following is an example of a list of tables generated by running the query in the sample code:

```
DROP TABLESPACE D0000005.H1000000 / -- S_ORG_EXT
DROP TABLESPACE D0000006.H2000000 / -- S_NOTE_FUL_REQ
DROP TABLESPACE D0000007.H3000000 / -- S_NOTE_MDF
```

Backing Up the Database

Upgrades: All upgrades.

Environments: All environments

Perform a full backup of the database. This backup protects your repositories and environment.

It is a recommended practice that you back up your database at key stages of the upgrade:

- Before any upgrade activity is started
- After upgrading the Siebel Database Schema or Custom Database Schema (upgrep + upgphys)
- After the repository merge

Perform any necessary maintenance on your Siebel database, for example running REORG or RUNSTATS, before backing it up. This ensures that your database is ready for use if you have to perform a database recovery.

Granting a Siebel User Upgrade Authorization

Upgrades: All upgrades.

Environments: All environments

The Siebel user who executes the Database Configuration Wizard and performs the upgrade must be set up as an employee on Siebel. This is the Siebel user whose user ID is entered when the Database Configuration Utility prompts for Database User Name.

The user name (user ID) of the target database must have authorization to set CURRENT SQLID and must have Siebel administrator responsibility. SADMIN is the default administrator user name. If this user does not already exist in your database, or does not have Siebel administrator privileges, then you must add this user to your database before starting the upgrade. For further information on adding Siebel users, see *Siebel Security Guide* .

7 Preparing a Development Environment for a Siebel Upgrade

Preparing a Development Environment for a Siebel Upgrade

This chapter describes the steps in preparing a development environment for upgrade. It includes the following topics:

- *Requirements for Upgrading the Development Environment*
- *About Moving Tables*
- *Checking In Development Repository Projects*
- *Determining Which Template File Was Used During an Extract or Merge*

Requirements for Upgrading the Development Environment

Upgrades: All upgrades.

Environments: Development environment only.

Before you upgrade your development environment, make sure that the development database configuration meets the database requirements outlined in *Verifying Database Configuration*, and meets the requirements depicted in *Siebel Installation Guide* for the operating system you are using.

If your development environment platform is DB2 for Windows and UNIX, see *Siebel Database Upgrade Guide* .

If you have not already done so, copy the Upgrade Planning Worksheet, located in *Siebel Upgrade Planning Worksheet* and fill out the appropriate fields with the information you require to perform the upgrade. Contact your database administrator or systems programmer for help in completing the worksheet. Also, refer to *Information Required by the Database Configuration Wizard* for a description of the information you are required to enter when you run the Database Configuration Wizard to perform upgrade operations.

About Moving Tables

Upgrades: All upgrades.

Environments: Development environment only.

This topic is part of an upgrade process. See *How to Perform a Siebel Database Upgrade*.

Some of the Siebel tables will have columns added to them as part of the upgrade. When this happens, the length of the record will increase, which might cause it to require a larger table space or bufferpool. Moving the identified tables to a new, larger, and differently named table space allows you to maintain the model of multiple tables for each table space which is present for all pre-7.7 schemas.

Before you move the tables, you must remove any standard or custom views using an SQL DROP command.

Note: If you remove an object that you want to reapply to the database after the upgrade is completed, make sure that you can rebuild it. For example, you can obtain a view definition from the DB2 catalog before removing the view so that you can re-create it after the tables have been moved to a larger table space. You can also use third-party products or other methods to preserve objects that are to be reapplied to the upgraded database.

Complete the following procedure to find the views that are defined on a table. The example in the procedure assumes that you are creating a new 16K table space within the same database as the older, smaller table space.

To find views that are defined on a table

- Run the following SQL statement to produce the list of views:

```
select * from sysibm.sysVIEWdep
WHERE Bcreator = 'yourschema'
AND BNAME IN ('S_ASSET', 'S_PROD_INT');
```

This SQL statement produces the drop statements into a sequential data set:

```
 SELECT DISTINCT 'DROP VIEW '||'yourschema.'||V.DNAME||' ;'
FROM SYSIBM.SYSVIEWDEP V
WHERE V.BNAME IN ('S_ASSET', 'S_PROD_INT')
AND V.BNAME = 'S_ASSET'
AND BCREATOR = 'yourschema';
```

To process these drop statements on the z/OS host, you must create a PDS member with the output from the preceding statement. Then submit this member through DSNTEP2 using JCL.

If you are using the preconfigured storage control file, you do not have to move any tables as a preupgrade task. This is because the existing schema is not being preserved and all tables will be recreated in the 1:1:1 model.

Checking In Development Repository Projects

Upgrades: All upgrades.

Environments: Development environment only.

Developers who are using Siebel Tools with a local database must check in their projects to the development repository.

Make sure that all project locks in your current Siebel repository have been released to prevent inadvertent loss of development work during the upgrade.

If you are using Siebel Workflow Manager, you must run the Workflow Monitor Agent and Workflow Action Agent to completion before upgrading to the current Siebel CRM release. The **S_ESCL_REQ** table does not have any rows if Workflow Manager has completed successfully.

Determining Which Template File Was Used During an Extract or Merge

Upgrades: All upgrades.

Environments: Development environment only.

This topic describes how to determine which template file was used for an extract or merge operation when a storage control file is created.

This topic is part of an upgrade process. See *How to Perform a Siebel Database Upgrade*.

To determine the template file that was used for an extract or merge operation

1. Open the dbextract.log file and review the command line that was entered.
2. Check the value for the /i parameter. You can also check the upgwiz.log file for the **strgupgd.exe** command string.

```
 /i D:\18025\dbsrvr\db2390\storage_p_u.ctl

UpgradeLogUpgradeInfo30000000254290624:0 2014-09-29 12:06:59 Executing
(C:\81_23039QF3_390CV\ses\siebsrvr\bin\strgupgd.exe /s
C:\81_23039QF3_390CV\ses\dbsrvr\db2390\storage_p_u.ctl /d
C:\81_23039QF3_390CV\ses\dbsrvr\db2390\SStempstore.txt /i
C:\81_23039QF3_390CV\ses\dbsrvr\db2390\strgvar.inp /m
C:\81_23039QF3_390CV\ses\siebsrvr\bin\master_dbconfig_extract_merge_mf.ucf)
```

8 Preparing a Production Environment for a Siebel Upgrade

Preparing a Production Environment for a Siebel Upgrade

This chapter describes the steps in preparing a production environment for upgrade. It includes the following topics:

- *Requirements for Upgrading the Production Environment*
- *About Moving the Customized Repository and Schema Definition Files*
- *Preparing for a Siebel Upgrade Without a Development Environment*

Requirements for Upgrading the Production Environment

Upgrades: All upgrades.

Environments: Production test, production.

You must be thoroughly familiar with the upgrade process before beginning the production upgrade. Before upgrading your production environment, perform a test upgrade in your production test environment to familiarize yourself with the process and to eliminate errors that can affect upgrade success or performance.

Before beginning the upgrade of your production environment, verify that the production database configuration meets the database requirements outlined in the topic *Verifying Database Configuration*.

If you have not already done so, copy the Upgrade Planning Worksheet, located in *Siebel Upgrade Planning Worksheet* and fill out the appropriate fields with the information you require to perform the upgrade. Contact your database administrator or systems programmer for help in completing the worksheet. Also, refer to *Information Required by the Database Configuration Wizard* and *Additional Information Required for Production Upgrades* for a description of the information you are required to enter when you run the Database Configuration Wizard to perform upgrade operations.

About Moving the Customized Repository and Schema Definition Files

Upgrades: All upgrades.

Environments: Production test and Production environments

This topic is part of an upgrade process. See *How to Perform a Siebel Database Upgrade*.

When you upgraded your development environment, the new customized repository was exported to a file called custrep.dat and the modified schema definition was exported to a file called schema.ddl in the `SIEBEL_ROOT\dbsrvr\db2390\` directory

(Windows) or the `$SIEBEL_ROOT/dbsrvr/db2390/` (UNIX) directory on the Siebel Server client computer from which you ran the upgrade. These files are used as the schema input on the production upgrade.

If the development and production upgrades are run on different midtier computers, then you must copy the schema.ddl and custrep.dat files to the production midtier computer before running the production upgrade.

If you modify repository objects or schema definitions after completing the development upgrade (upgphys), you must regenerate the schema.ddl and custrep.dat files. See *Regenerating the Siebel Repository Definition Files* for further information. You must then copy the files from the development to the production midtier computer again.

In the production environment, the custrep.dat file is used by the Siebel Upgrade Wizard to import the New Customer Repository and the`schema.ddl` file is used by the Siebel Upgrade Wizard to create the new database schema.

Preparing for a Siebel Upgrade Without a Development Environment

Upgrades: All upgrades.

Environments: Production test, production.

Platforms: All platforms.

This topic is part of an upgrade process. See *How to Perform a Siebel Database Upgrade*.

If your installation does not include a development environment, you do not have to merge your Siebel Repository. Instead, you can use the repository and schema definition files included in the Siebel Database installation. Before performing the upgrade, you must move and rename these files.

To prepare for an upgrade without a development environment

1. Navigate to `DBSRVR_ROOT\common` (Windows) or `DBSRVR_ROOT/common` (UNIX) and locate the mstrep.dat file.
2. Copy the mstrep.dat file and rename it custrep.dat.
3. Place the custrep.dat file in the `DBSRVR_ROOT\DB2390` (Windows) or `DBSRVR_ROOT/DB2390` (UNIX) directory.
4. In the `DB2390` directory, copy the ddl.ctl file and paste the copy into the same directory.
5. Rename the copy schema.ddl.
6. In the production test environment create a new database instance and install the Siebel database from the new release in the new database instance. Do not migrate any data to the new database.

   This database is called the reference database.
7. Define an ODBC for the reference database.

9 Running the Database Configuration Wizard to Perform Upgrade Tasks

Running the Database Configuration Wizard to Perform Upgrade Tasks

This chapter describes how to run the Database Configuration Wizard to perform the midtier tasks for an upgrade. Also review the topics in the chapter in *Siebel Database Upgrade Guide* that describes how to upgrade the Siebel database, and perform any applicable topics before starting your upgrade.

Refer to the roadmap for your upgrade in *How to Perform a Siebel Database Upgrade* for a complete list of all the tasks you must perform to upgrade to the current release of Siebel CRM. This chapter contains the following topics:

- *Example of a Siebel Development Environment Upgrade Flow*
- *Information Required by the Database Configuration Wizard*
- *About Running the Database Configuration Wizard on Windows*
- *About Running the Database Configuration Wizard Under UNIX*
- *Starting the Siebel Upgrade Wizard*
- *Upgrading the Repository and Importing Seed Data*
- *Fixing Column Alignment for Custom Objects*
- *Inactivating Unreferenced Repository Objects*
- *Converting Siebel Web Templates with the SWT to OD Conversion Utility*

Example of a Siebel Development Environment Upgrade Flow

This topic presents the flow of steps in part of a typical development environment upgrade. The steps are extracted from an actual driver file. To perform an upgrade, the Upgrade Wizard reads the steps in a driver file and performs the commands the steps contain. The driver file type used in this example is as follows:

- Upgrade: Siebel 15.0 to Siebel 17.0
- Environment: Development
- Upgrade mode: upgrep
- Multilingual: No

Upgrading the Siebel Database Schema (upgrep) is a two-step process, where you select each of the following upgrade processes in turn:

1. zSeries Staging of Files for Upgrade: **`master_upgrep_dev_150_mf_m.ucf`**
2. zSeries Seed/Repository Upgrade: **`master_upgrep_dev_150_mf.ucf`**

Example Steps in a Development Environment Upgrep Staging of Files

The following table shows the steps in the driver file for zSeries Staging of Files for Upgrade.

Step	Script or Input File	Description
1. Generate the DDL file for the staging database.	strgupgd	Generates the DDL file for the staging database.
2. Copy files into the output directory.	strgupgd	Runs the extract and merge process to create the storage control file. The database administrator must perform operations using the files in the $GenDDLDirectory directory. Once the operations are completed, resume the Upgrade Wizard operations by submitting the following command line on the midtier computer: **$GenDDLDirectory\upg_restart**
3. Restart the midtier file generation process.	strgupgd	Restarts the midtier file generation process for the upgrade. If all necessary mainframe tasks completed successfully, click YES to continue, otherwise click NO to terminate this process. If you choose NO, you can resume Upgrade Wizard operations by submitting the following command line on the midtier computer: $GenDDLDirectory\upg_restart
4. Generate the DDL for the additive schema changes.	Ddlimp2	For the DB2390 staging database, run the ddlimp file to generate the schema.additive.sql file.
5. Copy files into the output directory.	strgupgd	Generates a set of files in the $GenDDLDirectory directory. The database administrator must transfer these files from the $GenDDLDirectory directory to the mainframe using the ftp_pause1.txt and perform all required tasks on the DB2 host commands. Once completed, you can resume Upgrade Wizard operations by submitting the following command line on the midtier computer: $GenDDLDirectory\upg_restart
6. Restart the midtier file generation process.	strgupgd	Restarts the midtier file generation process for the upgrade. If all necessary mainframe tasks completed successfully, click YES to continue, otherwise click NO to terminate this process.

Step	Script or Input File	Description
		If you choose NO, you can resume Upgrade Wizard operations by submitting the following command line on the midtier computer: $GenDDLDirectory\upg_restart
7. Generate the DDL for temporary tables.	ddlimp	Creates the temporary tables for the z/OS upgrade.
8. Generate the DDL for Siebel tables.	ddlimp	Creates the schema for the z/OS upgrade.
9. Copy files into the output directory.	strgupgd	Generates a set of files in the $GenDDLDirectory directory. The database administrator must transfer these files from the $GenDDLDirectory directory to the mainframe using the ftp_pause2.txt and perform all required tasks on the DB2 host commands. Once completed, you can resume Upgrade Wizard operations by submitting the following command line on the midtier computer: $GenDDLDirectory\upg_restart
10. Restart the midtier file generation process.	strgupgd	Restarts the midtier file generation process for the upgrade. If all necessary mainframe tasks completed successfully, click YES to continue, otherwise click NO to terminate this process. If you choose NO, you can resume Upgrade Wizard operations by submitting the following command line on the midtier computer: $GenDDLDirectory\upg_restart
11. Generate the DDL for Siebel indexes.	ddlimp	Creates the indexes for DB390 development upgrade.
12. Copy files into the output directory.	strgupgd	Generates a set of files in the $GenDDLDirectory directory. The database administrator must transfer these files from the $GenDDLDirectory directory to the mainframe using the ftp_pause3.txt and perform all required tasks on the DB2 host commands.

Example Steps in a Development Environment Upgrep Seed Repository

The following table shows the steps in the driver file. The Script or Input File column in the table lists the SQL file or input file that is executed in each step. The Comment column provides a brief explanation of what the SQL file or input file does.

Step	Script or Input File	Comment
Verify repository name	rename_existing_repositories.sql	Renames Siebel Repository to Prior Customer Repository.
Preparation of prior customer repository	SWTClob.jar RepCrawler.jar	The SWT to OD Conversion Utility converts Siebel Web Templates to an Object Definition Layout. Converted Web templates are stored in the database. The Repository Sanitization Utility searches the entire repository for unreferenced repository objects. Unreferenced repository objects are deactivated if they are not used by any application.
Import Siebel seed data	dataimp utility seedupg0.inp as input seedupg1.inp as input seedupg_locale.inp as input	Prior to importing seed data, dataimp deletes existing seed data. The seedupg* files contain filters that dataimp uses to prevent deleting seed data that you have modified or seed data meeting specified criteria. Unmodified seed data has a last update date (LAST_UPD) of 1980-01-01. Dataimp does not delete records where LAST_UPD is later than this date.
Upgrade data after seed data import	upg_data_afterseed.sql	For customers who have not converted to UTC time, sets the UTC value in S_SYS_PREF to False. For customers who have converted to UTC time, the script takes no action.
Upgrade data after seed data import SIA	upg_data_afterseed_sia.sql	
Set system preference for codepage for DB	set_codepage.sql	Sets the database codepage in the S_SYS_PREF.
Update version component information	upd_upgcomp.sql	Updates the S_UPG_COMP table with the product release level. The S_UPG_COMP table stores version information for application executable programs.
Encryption Upgrade	EncryptionUpgrade.jar	Siebel Business Applications allow customers to encrypt sensitive information stored in the Siebel database, for example, credit card numbers, Social Security numbers, birth dates. This information cannot be viewed without access to Siebel Business Applications. Sensitive data can be encrypted by using AES (Advanced Encryption Standard). This utility identifies the RC2 encrypted

Step	Script or Input File	Comment
		columns and upgrades their data to the AES. This utility updates the logical layer of data for columns which are candidates for encryption.
Export prior customer repository	repimexp utility	Exports the existing prior customer repository to create the new customer repository.
Import Prior Siebel, New Siebel, and New Customer repositories	repimexp utility	Imports the prior Siebel repository, new Siebel repository, and the new customer repository in parallel to the repository tables.
Install SQL packages	seeduver.sql	Verifies that versions are set correctly in S_APP_VER.
Install SQL packages	ifstrg.sql	Sets storage parameters for Siebel Enterprise Integration Manager tables.
Install SQL packages	ifindxstrg.sql	Sets storage parameters for Siebel Enterprise Integration Manager table indexes.
Install SQL packages	pkgseq.sql	Adds a suffix to row IDs in the S_SEQUENCE table. Ensures that row IDs are unique.
Install SQL packages	pkgldel.sql	Defines s_txn_log_del_proc. Procedure periodically deletes transactions from S_DOCK_TXN_LOG. Also deletes rows from S_DOCK_TXN SET. Prevents need for large rollback segment.
Install SQL packages	trgreset.sql	Ensures that denormalized rows in S_TERR have correct values.
Install SQL packages	ddlseq.sql	Sets sequence numbers for specified tables.
Install SQL packages	pkgvis.sql	Creates function that modifies how Oracle optimizer does visibility check.
Fix column alignment for custom objects	AlignApplet.jar	Applet alignments are executed based on the data type of the field. Alignments, which can be one of the following, are executed across the entire Repository for a similar look and feel of fields: • Consistent Left • Right

Step	Script or Input File	Comment
		• Center
Create temporary indexes for merge performance	crt_temp_indexes_merge.sql	Creates temporary indexes to improve the merge performance.
Take backup of DB and update DB stats	None	Pauses the Siebel Upgrade Wizard to enable a database backup and the execution of database statistics before the merge.
Execute Incremental Repository Merge	siebdev	Starts the incremental repository merge automatically for Windows. If you are using a Windows computer and Siebel Tools is installed for Siebel Enterprise servers in UNIX environment, then you must perform this step manually.
Generate Merge Report	MergeReport.jar	Generates the hierarchical merge report in HTML format. Also creates the file IRM_Merge*_ERROR.txt in **SIEBEL_TOOLS_ROOT\log**, which contains only the errors that are present in the IRM_Merge*.txt file.
Export merge data to CSV	ExportMrgCSV.jar	Exports repository-merge log data to a CSV file for business object, business component, applet, view, and Web page object definitions. This data can be compared with the Usage Pattern Tracking (UPT) CSV files to obtain the intersection data, so that you can focus testing on these objects only. The Siebel Upgrade Wizard exports the log data to CSV files in the following folder: **upgrep_log_directory/** **output/export_csv/csv**
Record Upgrade History	store_history.sql	Stores the upgrade history in the S_INST_UPG_HIST table.

Steps That the upgphys Process Executes

The following table shows the different steps executed by the upgphys process. The Script or Input File column in the table lists the SQL file or input file that is executed in each step. The Description column provides a brief explanation of what the SQL file or input file does.

Step	Script or Input File	Description
1. Check whether the merge and conflict resolution steps are complete	verify_irm.sql	Verifies whether the merge and conflict resolution steps are complete.

Step	Script or Input File	Description
2. Drop temporary indexes created for merge performance	drop_temp_indexes_merge.sql	Removes all the temporary indexes created to improve the merge performance.
3. Export schema definition	None	Exports the schema definition to the file DBSRVR_ROOT **/platform/schema.ddl**. This file is used as an input to the production test and production environments.
4. Generate files to synchronize the physical and logical schema	schema.ddl	Applies the schema.ddl and synchronizes the tables and indexes.
5. Migrate query search controls of list applets into the Siebel database	SrchCntrlMigration.jar	This step migrates query search controls of list applets from files into the Siebel database. This step also exports the entire New Customer Repository to: **$DbsrvrRoot/$DatabasePlatform/custrep.dat**
6. Enable workspace	EnableWorkspace.exe	Enables the workspace on the New Customer Repository for repository content.
7. Encryption Upgrade - Physical	EncryptionUpgrade.jar	This step updates the physical layer data for columns which are encrypted with the RC2 algorithm. This updates the data to AES algorithm.
8. Export repository to a file	None	Exports the New Customer Repository to: **$DbsrvrRoot/$DatabasePlatform/custrep.dat** This step exports the Design Time Repository (DR) to the custrep_dev.dat file and Runtime Repository (RR) to the custrep.dat file. The custrep.dat file contains only the required repository data and is used as an input to the production test and production environments.
9. Import New Customer Repository as Siebel Repository	custrep_dev.dat	Truncates the repository tables and imports the previously exported New Customer Repository as Siebel Repository. This step imports the Design Time Repository (DR) from the custrep_dev.dat file.
10. Enable Workspace for Seed data	EnableWorkspace.exe	Enables the workspace on the New Customer Repository for Seed data (List of Values).
11. Copy files to the output directory.	None	Copies files to the output directory.

Step	Script or Input File	Description
12. Verify repository after upgrade	dbchck dictutl mlovupgd SeedConflict.jar	The repository is optionally verified after you complete the upgphys process. This step is executed if you selected the option Verify Repository After Upgrade in the Database Configuration Wizard.
13. Upgrade history	store_history.sql	Stores the upgrade history in the S_INST_UPG_HIST table.

Information Required by the Database Configuration Wizard

Upgrades: All upgrades.

Environments: All environments

This topic is part of an upgrade process. See *How to Perform a Siebel Database Upgrade*.

Use this topic to identify the information you must enter when running the Database Configuration Wizard. Make sure you have prepared your upgrade environment, and have collected and verified this information before running the wizard.

The Database Configuration Wizard requests information about the upgrade process you want to perform. It then adds this information to a master upgrade file. The Siebel Upgrade Wizard runs after the Database Configuration Wizard exits. The wizard generates the upgrade SQL files and executes some of the SQL files against the Siebel database. For more information on the Database Configuration Wizard, see *About the Siebel Database Configuration Utilities and Database Configuration Wizard*.

The following table lists the information that you must enter in the Database Configuration Wizard when performing the upgrade processes. The table on the following page lists additional information the utility requires when you perform a production environment upgrade.

Field Name or Menu	Required Information
Siebel Server Directory	The absolute path of the directory where the Siebel Server is installed. For UNIX, do *not* enter the string **`$SIEBEL_ROOT`**.
Siebel Database Server Directory	The absolute path of the directory where the Siebel Database Configuration Utilities are installed, for example **`C:\ sba81\ dbsrvr`** (Windows) or **`siebel/dbsrvr`** (UNIX).
RDBMS Platform	Choose IBM DB2 UDB for z/OS.
Siebel Database Operation	Choose Upgrade Database. The other menu choices are for database installation and administration.

Field Name or Menu	Required Information
Environment Type	• Choose Development for development environment upgrades. • Choose Production for production and production test environment upgrades.
Upgrade Options	Choose one of the following options: • Development environments o Upgrade Siebel Database Schema (upgrep) o Upgrade Custom Database Schema (upgphys) • Production Environments o Prepare for Production Upgrade o Upgrade Siebel Database Schema (upgrep + upgphys)
Upgrade Process	If you chose the Upgrade Siebel Database Schema option for either a production or development environment, select one of the following: • zSeries Staging of Files for Upgrade: to create the staging database DDL and to generate upgrade files • zSeries Seed/Repository Upgrade: to automatically populate and upgrade data on the database
Siebel Industry Application	Choose the application you are upgrading from. If you have upgraded to the base Siebel Business Applications as part of upgrading to the new Siebel Industry Applications release, choose Siebel Horizontal Application.
Current Siebel Version	Choose the application version you are upgrading from. If you are upgrading within the same Siebel release, choose the application version you are upgrading from based on the following criteria: • If your Siebel database is currently on version 8.1.1.14, then choose v8_1_1_14. Choose this option if you migrated your Siebel CRM software from version 8.1.1.14. • Choose option v8_1_1SIA_To_v8_1_1_9SIA under the following conditions: o If you are currently on Siebel CRM version 8.1.1.0 to 8.1.1.9 (SIA) and migrating to Siebel 2019 or later (SIA). o If you have installed Siebel SIA 8.1.1.10 binaries only, and have not previously executed incremental repository merge, and are migrating to Siebel 2019 or later. • Choose option v8_1_1_10 under the following conditions: o If you have installed Siebel SIA 8.1.1.10 binaries, but have also previously executed incremental repository merge, and are migrating to Siebel 2019 or later. o If you have performed a new installation of Siebel CRM version 8.1.1.10 (SIA) including database installation previously and are migrating to Siebel 2019 or later. • Choose option v8_1_1_11 under the following conditions: If you are currently on Siebel CRM version 8.1.1.11 (SIA) and are migrating to Siebel 2019 or later.
Siebel Tools Installation Directory Siebel Tools Data Source	• Siebel Tools Installation Directory. The absolute path of the directory where Siebel Tools is installed, such as **`c:\8.x\Tools`**. This entry applies only to the Siebel Server installed on Windows.

Field Name or Menu	Required Information
(Specify both values for Incremental Repository Merge on Windows)	• Siebel Tools Data Source. Provide the data source name that you use to log in using Siebel Tools, such as ServerDataSrc. This entry is in **`SiebelTools Installation Directory\BIN\Language\tools.cfg`**.
Database Encoding	Indicate whether your database uses an ASCII or EBCDIC code page.
Host/LPAR name where Target database resides DB2 Subsystem name of Target database.	• Host/LPAR name where Target database resides: The name of the host or LPAR where the target database is located. You can either specify the same or different Host/LPAR names for the target and staging databases. • DB2 Subsystem name of Target database: The DB2 subsystem name of the target database. You must specify a ***different*** DB2 subsystem name for the target and staging databases.
Schema/Tableowner qualifier name on Target database	Enter the up to eight-character identifier that designates the Siebel schema for your target database. This is also an authorization ID. The schema qualifier must start with a letter, cannot contain special characters, and must be entered in uppercase. The target database tableowner name can be the same or different to the staging database tableowner name.
ODBC Data Source Name of Target database	Verify the ODBC name for connecting to the target Siebel database. The default value of the target database ODBC DSN is the DB2 subsystem name. When you set up the ODBC connection in DB2 Connect, you can use the actual subsystem name for the database alias. **Note:** To find the name of your ODBC data source, navigate to the Start menu, then select Settings, Control Panel, and then ODBC data source. Click the System DSN tab and you will find the name of your ODBC data source. To find the name of your ODBC data source on UNIX, type: **`vi $ODBCINI`**.
Valid/Authorized Target database user name or group name	Enter the target database user name for the Siebel administrator of the target database. For further information on the database user name, see *Granting a Siebel User Upgrade Authorization*.
Valid/Authorized Target database password	Enter the password associated with the username of the Siebel administrator of the target database.
Host/LPAR name where the Staging database resides	The host or LPAR name of the staging database. The staging and target Host/LPAR names can be the same or different.
DB2 Subsystem name where the Staging database resides	The DB2 subsystem name of the staging database. You must specify***different*** DB2 subsystem names for the target and staging databases.
Schema/Tableowner qualifier name for Staging database	Enter the up to eight-character identifier that designates the Siebel schema for your staging database. This is also an authorization ID. The schema qualifier must start with a letter, cannot contain special characters, and must be entered in uppercase. The staging database tableowner name can be the same or different to the target database tableowner name.
Authorized TSO account ID used to connect and FTP files to Enterprise Server(s)	Enter your TSO account ID. This account ID must have the authorization to allocate and create data sets on the z/OS host.
Dataset High-level Qualifier for all Host (Staging and Target) dataset names	Specify the high-level qualifier you want to use for the z/OS upgrade data sets. Follow your organization's naming standards.

Field Name or Menu	Required Information
Security Group ID / Grantee.	Enter the user ID of the group to whom schema access is granted, for example, **SSEROLE**.
Storage Group for Temporary Indexes	Enter the name of the storage group provided by the database administrator for the staging database (the default value is **SYSDEFLT**). The staging database storage group name can be the same or different to the target database storage group name
Storage Control File	Enter the path and name of the storage control file you want to use as follows: • zSeries Staging of Files for Upgrade: When you select this upgrade process, specify the storage control file of the target database. • zSeries Seed/Repository Upgrade: When you select this upgrade process, specify the storage control file that contains the previously customized database storage layout (this is the file you prepared in *Process of Preparing the Storage Layout of the Schema*).
Primary Quantity for Temporary Index Space	Enter the minimum amounts of primary and secondary index space allocated for temporary indexes generated during the upgrade.
Secondary Quantity for Temporary Index Space	
DDL Commit Frequency	Enter the DDL commit frequency for your upgrade.
Output Directory	Accept the default output directory name or enter a new directory name. **Note:** When the upgrade process is complete, this directory contains all of the files necessary to create the staging database or run the upgrade. These files must be manually applied by the database administrator.
Verify Repository after upgrade	Indicate whether you want to execute Verify Repository steps during upgphys. To perform upgphys separately, select the Verify Repository after Upgrade option in the database server configuration.
Upgrep log directory	If you select the Verify Repository After Upgrade option, enter the log directory of the upgrep process. The log directory is of the form **SIEBEL_ROOT/log/upgrep_dev_UpgradeNumber.** For example: **C:/ses/siebsrvr/log/upgrep_dev_811**. The log directory path is a requirement for generating the seed data conflict report.
Log Output Directory	Accept the default output directory for upgrade log files name or enter a new directory name.
Select runupg option	Indicate whether you want to run the operation that you configured or run it at another time.

Additional Information Required for Production Upgrades

If you are upgrading from Siebel CRM version 7.5.3, when you perform a production environment upgrade, you are prompted to enter the additional information shown in the following table when you run the Database Configuration Wizard in Prepare for Production Upgrade mode.

Note that several screens request information about the Siebel database in the development environment, not the production environment.

Screen Name	Required Information
ODBC Data Source Name for Development Database	Windows only. The ODBC name for connecting to the development environment Siebel database. If you are upgrading without a development environment, this is the ODBC of the reference database.
Database User Name for Development Database Database Password for Development Database	Account name and password of the Siebel administrator of the Siebel database in the development environment.
Siebel Schema Qualifier for Development Database	Enter the up to eight-character identifier that designates the Siebel schema for your development database. This is also an authorization ID. The schema qualifier must start with a letter, cannot contain special characters, and must be entered in uppercase.
Repository Name for Development Database	Enter the name of the upgraded Siebel Tools repository in the development environment database. Typically, this is *Siebel Repository*.

About Running the Database Configuration Wizard on Windows

Upgrades: All upgrades.

Environments: All environments

Platforms: Windows only.

This topic is part of an upgrade process. See *How to Perform a Siebel Database Upgrade*.

Run the Database Configuration Wizard to upgrade the Siebel database. The wizard collects information, populates a master configuration file, and calls the SQL generator to create SQL commands. The Siebel Upgrade Wizard then uses the configuration file and SQL commands to generate upgrade files that are applied on the mainframe, and to make upgrade changes to the Siebel database. For more information about the Database Configuration Wizard, see *About the Siebel Database Configuration Utilities and Database Configuration Wizard*.

Requirements:

- Collect the information that the Database Configuration Wizard requires. See *Information Required by the Database Configuration Wizard*.
- (Incremental Repository Merge Only) If you are performing an incremental repository merge and your Siebel Server is installed on Windows, then start the Siebel Database Configuration Wizard from the computer where Siebel Tools is installed. The merge process automatically starts Siebel Tools to execute the incremental repository merge.
- Install the new release's languages packs for all deployed languages. For further information on multilingual upgrades, see the topic on upgrade planning for multilingual Siebel deployments in *Siebel Database Upgrade Guide* .

CAUTION: When you run the Siebel Database Configuration Wizard to upgrade the Siebel Database, the procedure will not complete successfully if you have deployed languages within your system that are not shipped with the current release of Siebel CRM. You receive an error message stating that your present installation is incomplete, and a list of the languages that caused the error is displayed. If this error occurs, you must delete records for unshipped languages from the S_LST_OF_VAL database table. For information on this task, see the topic on running the Database Configuration Wizard in *Siebel Database Upgrade Guide* .

Running the Database Configuration Wizard Under Windows

This topic describes the standard procedure to follow to run the Database Configuration Wizard under Windows.

To run the Database Configuration Wizard under Windows

1. Ensure that no server tasks including the Siebel Gateway Name Service are running in the background. To verify, navigate to Start, Settings, Control Panel, and then Services.

   Note: The Database Configuration Wizard runs in live mode only so you must be connected to the Gateway Name Server to run it. For further information on Siebel Configuration Wizard running modes, see *Siebel Installation Guide* for the operating system you are using.

2. From the Start menu, select All Programs, Siebel Enterprise Server 8.*x*, and then Database Server Configuration. The first screen of the Database Configuration Wizard appears.
3. Enter the information you are prompted for in each screen, and click Next to continue.
4. On the Summary screen, review the configuration values you entered on the previous screens. To change any of the values, click Back to return to the screen with the parameter you want to change. If the values are correct, click Next to continue.
5. Depending on the option you chose on the Select Runupg Option screen, do one of the following:
   - If you selected the No it will apply configuration changes later option, click OK to finish. The configuration information is saved in a master file located in `SIEBEL_ROOT\bin` but the Upgrade Wizard is not launched. You can restart the configuration and run the Upgrade Wizard later. See *Starting the Siebel Upgrade Wizard*.
   - If you selected the Yes apply configuration changes now option, the configuration information you entered is saved. Click OK to launch the Siebel Upgrade Wizard; it calls the SQL generator to create or populate SQL scripts.
6. After configuration is complete, click Exit to exit the Configuration Wizard.
   You can also launch the Database Configuration Wizard from the command line. For information on the command line syntax and on the available options, see *Siebel Installation Guide for Microsoft Windows* .

About Running the Database Configuration Wizard Under UNIX

Upgrades: All upgrades.

Environments: All environments

Platforms: UNIX only.

This topic is part of an upgrade process. See *How to Perform a Siebel Database Upgrade*.

Run the Database Configuration Wizard to upgrade the Siebel database. The wizard collects information, populates a master configuration file, and calls the SQL generator to create SQL commands. The Siebel Upgrade Wizard then uses the configuration file and SQL commands to generate upgrade files that are applied on the mainframe, and to make upgrade changes to the Siebel database. For more information on the Database Configuration Wizard, see *About the Siebel Database Configuration Utilities and Database Configuration Wizard*.

Requirements:

- Collect the information that the Database Configuration Wizard requires. See *Information Required by the Database Configuration Wizard*.
- Install the new release's languages packs for all deployed languages. For further information on multilingual upgrades, see the topic on upgrade planning for multilingual Siebel deployments in *Siebel Database Upgrade Guide* .

CAUTION: When you run the Siebel Database Configuration Wizard to upgrade the Siebel Database, the procedure will not complete successfully if you have deployed languages within your system that are not shipped with the current release of Siebel CRM. You receive an error message stating that your present installation is incomplete, and a list of the languages that caused the error is displayed. If this error occurs, you must delete records for unshipped languages from the S_LST_OF_VAL database table. For information on this task, see the topic on running the Database Configuration Wizard in *Siebel Database Upgrade Guide* .

Running the Database Configuration Wizard Under UNIX

This topic describes the standard procedure to follow to run the Database Configuration Wizard under UNIX.

To run the Database Configuration Wizard under UNIX

1. Verify that the Siebel Server is stopped.

   The Database Configuration Wizard runs in live mode only so you must be connected to the Gateway Name Server to run it. For further information on Siebel Configuration Wizard running modes, see *Siebel Installation Guide for UNIX* .
2. Navigate to the SIEBSRVR_ROOT directory, and source either the dbenv.sh or the dbenv.csh file, according to the type of shell you use:
   - Korn or Bourne shell

     ```
     . ./dbenv.sh
     ```

     Tip: Make sure there is a space between the initial period and `./dbenv.sh`.
   - C shell

     ```
     source dbenv.csh
     ```
3. Review the values of the `$SIEBEL_ROOT` and `LANGUAGE` environment variables and verify that they are correct. If necessary, reset the values as follows:

- Set the **LANGUAGE** variable to the language in which the Database Configuration Wizard prompts appear, for example, **enu** for U.S. English.
- Set the **$SIEBEL_ROOT** variable to the path of your Siebel Server installation directory, for example, **home/siebel/sba8x/siebsrvr**.

4. Navigate to the config subdirectory of the SIEBEL_ROOT directory, for example, **/siebel/sba8x/config**.
5. Start the Database Configuration Wizard by running the following command:

   ```
   install_path/config/config -mode dbsrvr
   ```

   In this path, install_path is the installation path for the installed Siebel Enterprise Server software.

   For a description of the command line syntax and options, see *Siebel Installation Guide for UNIX* .
6. When the first Database Configuration Wizard screen appears, enter the information you are prompted for in this screen, and click next to continue.
7. Enter the information you are prompted for in all subsequent screens. Use the Next and Back buttons to navigate between screens.
8. After you have entered all the requested information, the utility displays the Summary screen listing all the values you have entered.
9. To amend any of the configuration values, click Back to return to the appropriate screen and make changes. Otherwise, click Next.
10. You are prompted as to whether or not you want to execute the configuration:
    - Click Yes, and the configuration information is saved in a master file located in **$SIEBEL_ROOT/bin** but the Upgrade Wizard is not launched. To start the Upgrade Wizard, see *Starting the Siebel Upgrade Wizard*.
    - Click No, and the configuration information you entered is not saved.
11. After configuration is complete, click Exit to exit the Configuration Wizard.

Starting the Siebel Upgrade Wizard

Upgrades: All upgrades.

Environments: All environments

This topic is part of an upgrade process. See *How to Perform a Siebel Database Upgrade*.

The Siebel Upgrade Wizard executes the upgrade of the Siebel database. It takes a master configuration file as input. This file contains environment information and a driver filename. The Upgrade Wizard executes the steps in the driver file to perform the upgrade.

As the Upgrade Wizard performs the steps in the driver file, it lists the steps in a state log. The state log is located in **\siebsrvr\LOG\process\state** where process is the upgrade process, for example upgrep_dev_811 (upgrade from 8.1.1, upgrep process, development environment).

If the Upgrade Wizard encounters an error and exits during an upgrade, you can restart it after correcting the error. The Upgrade Wizard reads the state log and continues the upgrade from the last successfully completed step.

When you run the Database Configuration Wizard under Windows, you are prompted to indicate whether or not you want to start the Upgrade Wizard. When you run the Database Configuration Wizard under UNIX, you must start the Upgrade Wizard manually. For more information on the Siebel Upgrade Wizard, see *About the Siebel Upgrade Wizard and Driver Files*.

Requirements for Starting the Siebel Upgrade Wizard After Errors

If the Siebel Upgrade Wizard stops due to errors, verify that you have met these requirements before restarting the wizard:

- Carefully review the relevant log files to make sure that your upgrade has completed successfully up to that point.
- If you are continuing a previous and incomplete schema upgrade, do not change the Log Output Directory that you previously selected.
- If problems with your environment prevent the upgrade from restarting, you must restore the database from the prior base version (the version from which you are upgrading).

  If you have to restore your database and restart the upgrade, delete or store the upgrade log files. The files are located in the following directory:

  Windows: `SIEBEL_ROOT\log\PROCESS\output`

  UNIX: `$SIEBEL_ROOT/log/PROCESS/output`

  Also delete the `state.log` file. It is located in the following directory:

  Windows: `SIEBEL_ROOT\log\PROCESS\state`

  UNIX: `$SIEBEL_ROOT/log/PROCESS/state`

Starting the Siebel Upgrade Wizard

Use this procedure to start the Upgrade Wizard. See *Restarting the Siebel Upgrade Wizard After Pauses* for the procedure to restart the Upgrade Wizard after it has paused and *Stopping the Siebel Upgrade Wizard* for the procedure to stop the Upgrade Wizard.

To start the Upgrade Wizard

1. Navigate to the following directory:
   - Windows: `SIEBEL_ROOT\bin`
   - UNIX: `$SIEBEL_ROOT/bin`
2. Enter the following command from the command line:
   - Windows:`siebupg /m master_UPGRADEOPTION_ENVIRONMENT_VERSION_MasterFileType.ucf`
   - UNIX: `srvrupgwiz /m master_UPGRADEOPTION_ENVIRONMENT_VERSION_MasterFileType.ucf`

     where `UPGRADEOPTION_ENVIRONMENT_VERSION_MasterFileType` is the portion of the upgrade configuration filename that lists the upgrade process, the upgrade environment, the Siebel release from which you are upgrading, and the master file type. The file is located in `SIEBEL_ROOT\bin` (UNIX: `$SIEBEL_ROOT/bin`). See *About the Siebel Database Configuration Utilities and Database Configuration Wizard* for further information.

     Note: Specify either `mf_m` or `mf` for the MasterFileType value depending on whether you want to start the manual or automatic portion of an Upgrade Wizard process.

The following table lists examples of filenames for an upgrade from Siebel CRM version 8.1.1

Upgrade Option	Master File Generated
Development environment upgrep	master_upgrep_dev_811_mf_m.ucf master_upgrep_dev_811_mf.ucf
Development environment upgphys	master_upgphys_dev_811_mf.ucf
Production environment upgrep and upgphys	master_upgrep_prod_811_mf_m.ucf master_upgrep_prod_811_mf.ucf

3. To begin the upgrade, click OK (Windows) or click Enter (UNIX).

   The Upgrade Wizard resumes from the point at which it stopped.

Restarting the Siebel Upgrade Wizard After Pauses

Use this procedure to restart the Upgrade Wizard after it has paused to allow you to apply files generated on the midtier to the z/OS host.

To restart the Upgrade Wizard

1. Navigate to the **DBSRVR_ROOT\DB2390\dboutput\upgrade** directory (Windows) or the **$DBSRVR_ROOT/DB2390/dboutput/upgrade** directory (UNIX).
2. Do the following:
   - Windows: Double-click on the **upg_restart.bat** file.
   - UNIX: Run **upg_restart.ksh**.

Stopping the Siebel Upgrade Wizard

Do not stop the Upgrade Wizard unless you are confident that an error has occurred, and the Upgrade Wizard or a utility it has called is hung. Some SQL commands issued by the Upgrade Wizard or by its utilities can take considerable time to complete.

If you are unsure whether or not the Upgrade Wizard has stopped responding, create a service request (SR) on My Oracle Support. You can log service requests by accessing My Oracle Support (Service Request tab), or by using your existing phone support numbers to contact Oracle Global Customer Support.

Stopping the Upgrade Wizard can have varying effects on the RDBMS. Before restarting the Upgrade Wizard, review the upgrade log files. Run SQL commands as required to resolve errors found in the logs.

The following procedure describes how to stop the Upgrade Wizard in a Windows environment.

To stop the Upgrade Wizard under Windows

- Do one of the following:
  - If the Upgrade Wizard has launched a separate command window in which a utility is running, close the command window. This terminates the utility and stops the upgrade.
  - In the Upgrade Wizard dialog box, click Cancel.
    The Upgrade Wizard will exit when the current upgrade step is completed. There might be a delay while the step completes.

  The following procedure describes how to stop the Upgrade Wizard in a UNIX environment.

To stop the Upgrade Wizard under UNIX

1. If the Upgrade Wizard has started a utility in a child process, stop the child process.
2. Exit the shell in which the Upgrade Wizard is running.
3. Locate and stop any orphaned child processes started by the Upgrade Wizard.

After the processes terminate, there might be a delay while the RDBMS executes SQL commands that have already been issued.

Upgrading the Repository and Importing Seed Data

Upgrades: All upgrades.

Environments: All environments

This topic is part of an upgrade process. See *How to Perform a Siebel Database Upgrade*.

After you have created the staging database, generated the upgrade files, and upgraded the target database, you must upgrade the repository and import seed data.

Run the Database Configuration Wizard to upgrade the repository and import seed data as described in the following procedure.

To upgrade the repository and import seed data

1. Run the Database Configuration Wizard. See *About Running the Database Configuration Wizard on Windows* and *About Running the Database Configuration Wizard Under UNIX*.
2. Select the following options:
   - Upgrade Options:
     - Development environment: Upgrade Siebel Database Schema (upgrep)
     - Production environment: Upgrade Siebel Database Schema (upgrep + upgphys)
   - Upgrade Process: zSeries Seed/Repository Upgrade
   - Make sure you specify values for the target database when prompted for the names of the Host, DB2 subsystem, schema qualifier, ODBC data source, and database user name and password.
3. Enter configuration information for your environment as described in *Information Required by the Database Configuration Wizard*. The master UCF file is updated with the environment configuration information.

4. Start the Siebel Upgrade Wizard. See *Starting the Siebel Upgrade Wizard*.

Note: The process of importing seed data and upgrading the repository can take several hours.

Restarting the Seed Data Import and Repository Upgrade

If the Upgrade Wizard stops responding during the Repository Data Upgrade process, restart the process using the following procedure.

To restart the repository upgrade and seed data import process

1. From the command line, navigate to the **SIEBSRVR\bin** directory (Windows) or **SIEBSRVR/bin** directory (UNIX).
2. Run the RUNSTATS utility to update statistics on specified database tables by executing the following commands:

```
RSTAT390 /u UserId /p Password /c DatabaseName /d TableownerName /a Y /l rstat.log /T S_COLUMN
RSTAT390 /u UserId /p Password /c DatabaseName /d TableownerName /a Y /l rstat.log /T S_UK_ATTJOIN
```

3. Restart the Upgrade Wizard using one of the methods described in *Starting the Siebel Upgrade Wizard*.

Note: To improve the repository upgrade performance, execute the REORG utility on the tables listed in *About Reorganizing Tables Before the Repository Merge* before performing the repository merge.

Fixing Column Alignment for Custom Objects

The Fixing Column Alignment for Custom Objects Utility sets the standard for list column header and data alignment based on type of fields they are mapped to across all Siebel applications.

The Fixing Column Alignment for Custom Objects Utility does the following:

- List columns mapped to the Currency field type are aligned right (to the far edge of the column).
- List columns having icon maps mapped to them are center aligned.
- List columns mapped to a Numeric field type are center aligned
- List columns mapped to a Boolean field (or CHAR(1)) type are center aligned.
- List columns mapped to any other field type are left aligned (to the near edge of the column).
- List columns data alignment will be same as its header alignment.

Left alignment is the default value for the data and header in list columns. HTML Width for list columns mapped to Date field type will be 185 by default.

The Fixing Column Alignment for Custom Objects Utility runs as part of the upgrade process. Use the procedures in this topic to manually run the Fixing Column Alignment for Custom Objects Utility.

Running the Fixing Column Alignment for Custom Objects Utility

1. Navigate to the following directory:

   Windows: **$DbsrvrRoot \common folder**

UNIX: **$DbsrvrRoot \common folder**

2. Run the following command:

```
java -jar alignapplet.jar /s [Siebel Tool/Server Path, one folder up BIN directory]
/c [DSN] /d [Database Type - Oracle, DB2UDB, MSSQL or DB2390 ] /u [Database User]
/p [Database Password] /o [Log directory] /t [Table Owner] /v "Prior
Customer Repository" /r "New Siebel Repository" /x "New Customer Repository"
```

3. Review the AllignApplet log and verify that AlignApplet ran without errors.

   Windows: **$SiebelLogDir \AlignApplet.log**

   UNIX: **$SiebelLogDir /AlignApplet.log**

4. Review the AllignApplet reports to see the modified objects.
   - AlignApplet.log. A log of all the steps executed in this program.
   - AlignAppelt.html. A report detailing the modified objects.
   - AlignAppletLog.log. A folder that contains all the SQL logs executed during the column alignment process.

Inactivating Unreferenced Repository Objects

The Inactivating Unreferenced Repository Objects Utility identifies the unreferenced objects in the database and deactivates the unreferenced objects. The Inactivating Unreferenced Repository Objects Utility finds unreferenced objects for the following Siebel objects:

- Screen
- View
- Applet
- Business Object
- Business Component
- Integration Objects
- Link
- Pick List
- Task Group
- Task

The Inactivating Unreferenced Repository Objects Utility runs as part of the upgrade process. Use the following procedure to manually run the Inactivating Unreferenced Repository Objects Utility.

Running the Inactivating Unreferenced Repository Objects Utility

1. Navigate to the following directory:

   Windows: **$DbsrvrRoot\common folder**

   UNIX: **$DbsrvrRoot\common folder**

2. Run the following command:

```
java -jar RepCrawler.jar /s [Siebel Tool/Server Path, one folder up BIN directory]
/c [DSN] /d [Database Type - Oracle, DB2UDB, MSSQL or DB2390 ] /u [Database User]
/p [Database Password] /h [Host Name] /o [Log directory] /t [Table Owner] /r "Siebel
Repository"
```

RepCrawler refers to the following files (present in the **dbsrvr/common** folder) to determine whether all active objects for active applications are referenced in the code and repository, and subsequently whether to inactivate those objects or not:

- RepSanitizationRules.xml. This *rules* file defines the relationship between objects. The use of object references will be determined by the relationships defined in this file.
- RefReferenceObjects.txt. This *blacklist* file contains a list of all the default (out-of-the-box) objects used by Siebel. Customers can expand this list by adding objects, which they do not want to inactivate as part of the RepCrawler process, to this list.

After RepCrawler runs, any objects which are not referenced in the code and repository will be considered for inactivation.

3. Review the RepCrawler log and verify that RepCrawler ran without errors.

   Windows: **$SiebelLogDir \RepCrawler.log**

   UNIX: **$SiebelLogDir / RepCrawler.log**
4. Review the RepCrawler reports to see the inactive objects.
   - RepCrawler.html. A report where you can see the inactive objects.
   - RepcrawlerLog.log. A folder that contains all the SQL logs executed during the process of running the Inactivating Unreferenced Repository Objects Utility.
   - repcrawler.js. A data file in JSON format of all inactive objects used in the HTML report.

Converting Siebel Web Templates with the SWT to OD Conversion Utility

The SWT to OD Conversion Utility converts Siebel Web Templates to an Object Definition Layout. Converted Web templates are stored in the database.

The SWT to OD Conversion Utility runs as part of the upgrade process. Use the procedures in this topic to manually run the SWT to OD Conversion Utility.

Running the SWT to OD Conversion Utility

1. Navigate to the following directory:

   Windows: **$DbsrvrRoot \common folder**

   UNIX: **$DbsrvrRoot \common folder**
2. Run the following command:

```
java -jar $DbsrvrRoot\common\SWTClob.jar /s $SiebelRoot /c "$ODBCDataSource" /t
$TableOwner /u $TableOwner /p $TablePassword /o $SiebelLogDir /d $DatabasePlatform
```

```
/r $RepositoryName /j $WebTemplatesDir /w $WSUSerName /x $WorkspaceName /b
$BranchedWS /i $WebTemplateName
```

3. Review the SWTClob log and verify that SWTClob ran without errors.

   Windows: **`$SiebelLogDir \SWTClob.log`**

   UNIX: **`$SiebelLogDir /SWTClob.log`**

   For more information about troubleshooting and verifying the results of the Web template migration process, see Using Siebel Tools.

10 Creating the Siebel Staging Database

Creating the Siebel Staging Database

This chapter describes how to create the staging database used in the development and production database upgrades. It includes the following topics:

- *Process of Creating the Staging Database*
- *Required Tasks before Creating the Staging Database*
- *Creating the Staging Database Schema DDL Files*
- *Transferring the Staging DDL to the z/OS Host*
- *Preparing the z/OS Upgrade Environment and Creating the Staging Database*
- *Removing Interface Tables and Triggers*

Process of Creating the Staging Database

Upgrades: All upgrades.

Environments: All environments

The process of creating the staging database involves performing the following tasks:

1. Perform the prerequisite tasks described in *Required Tasks before Creating the Staging Database*.
2. Create the DDL schema files that will be used to build the staging database by running the Database Configuration Wizard. See *Creating the Staging Database Schema DDL Files*.
3. Transfer the staging DDL files generated in *Process of Creating the Staging Database* to the z/OS host where they are applied. See *Transferring the Staging DDL to the z/OS Host*.
4. Set up the z/OS environment for the staging and target database upgrades and create the staging database. See *Preparing the z/OS Upgrade Environment and Creating the Staging Database*.
5. Drop interface tables and triggers. See *Removing Interface Tables and Triggers*.

Required Tasks before Creating the Staging Database

Upgrades: All upgrades.

Environments: All environments

Before you create the staging database, complete the following tasks:

1. Select a schema owner for the staging database. Make sure the staging schema owner does not own any objects within the staging DB2 subsystem. The staging schema owner can be the same as the target schema owner.
2. Do the following:

a. Make sure you have a valid storage control file for the database to be upgraded. This contains the storage definitions of the existing database and is used to generate the DDL to build the staging database schema.
b. Name this storage control file storage_target_extonly.ctl.

   If you do not have a valid storage control file, create one by running the Database Configuration Wizard and selecting the Extract from Catalog option. Specify database details for your existing Siebel database (the database to be upgraded). For further information on this task, see *Implementing Siebel Business Applications on DB2 for z/OS* .

   The Extract from Catalog option extracts the storage layout of the database you specify from the DB2 catalog and creates a new storage control file that contains a copy of the storage definitions of the database.

3. Make sure the logical repository definitions and the physical schema definitions of the database to be upgraded match by running the Database Configuration Wizard, and specifying the following options:
   - Siebel Database Operation: Run Database Utilities.
   - Database Utility Selection: Synchronize Schema Definition.
   - Repository Synchronization Mechanism: Generate DDL into Files.
   - Storage Control File: Specify the file you extracted in the previous step.
4. Depending on the outcome of the synchronization process, do one of the following:
   - If the logical and physical schema database definitions match, no DDL is generated in the schema.sql file from the Synchronize Schema Definition process and no further action is required.
   - If the logical and physical schema database definitions do not match, the synchronization log file indicates the specific actions that are required to synchronize the schema definitions, such as rebuild tables, and the synchronization process generates the DDL required to perform the actions. Proceed to step 5.
5. Click Yes to exit from the Wizard, then do the following

   a. Navigate to the directory you assigned as the Output Directory.
   b. Transfer the schema.sql file to the z/OS host and ask your DBA to apply the DDL contained in the file.

For detailed information on running the Synchronize Schema Definition process, see *Implementing Siebel Business Applications on DB2 for z/OS* .

Creating the Staging Database Schema DDL Files

To create the staging database, you must generate schema DDL files from the target database. You then use these files and the storage control file you extracted from the target database to create the staging database. The following procedure describes how to generate the DDL files.

To generate the DDL files used to create the staging database

1. Run the Database Configuration Wizard. See *About Running the Database Configuration Wizard on Windows* and *About Running the Database Configuration Wizard Under UNIX*.
2. Specify the following options:

   a. Upgrade Options:

      - Development environment: Upgrade Siebel Database Schema (upgrep).

- Production environment: Upgrade Siebel Database Schema (upgrep + upgphys).

b. Upgrade Process: zSeries Staging of Files for Upgrade.

c. Storage Control File: Specify the name of the storage control file you extracted in *Required Tasks before Creating the Staging Database*.

d. DB2 Subsystem Name:

- The DB2 subsystem name you specify for the staging database must be different to the DB2 subsystem name of the database to be upgraded (target database).
- It is recommended that the DB2 subsystem name you specify for the staging or target database is the same as the ODBC Data Source Name (DSN) you specify for the database. If the database ODBC DSN is not the same as the DB2 subsystem name, you can create a new ODBC DSN for the staging or target database or amend the existing ODBC DSN.

  See *Information Required by the Database Configuration Wizard*.

3. Launch the Siebel Upgrade Wizard. See *Starting the Siebel Upgrade Wizard*.

   SQL commands are executed on your existing database to generate the staging database files. The Upgrade Wizard then stops (Pause #0). For a list of the files generated on the midtier by the Siebel Upgrade Wizard, see *Upgrade Files for Siebel Business Applications*.

Transferring the Staging DDL to the z/OS Host

When the Upgrade Wizard stops at Pause # 0, you must transfer the SQL and JCL templates and other staging DDL that has been generated on the midtier to the z/OS host where they can be executed. To do this, perform the following procedure.

To transfer the staging DDL to the z/OS host

1. Navigate to the **`\DB2390\dbsrvr\dboutput\upgrade`** directory (Windows) or the **`/DB2390/dbsrvr/dboutput/upgrade`** directory (UNIX) and double-click the ftp_stg.bat file (Windows) or issue the following command (UNIX):

   ```
   ftp -vn < ftp_stg.txt > ftp_stg.log
   ```

2. Enter your TSO password and press Enter.

   All the files required to create the staging database are transferred from the midtier to the z/OS host.

3. Review the ftp_stg.log file which is created in the upgrade directory and verify that all the files listed in the ftp_stg.txt file transferred successfully to z/OS staging data sets.

Preparing the z/OS Upgrade Environment and Creating the Staging Database

You must transfer the staging database and other upgrade files generated on the midtier by the Upgrade Wizard into data sets on the z/OS host. These files must then be processed and prepared for use. These files include the REXX code that contains all the panels and programs for running the upgrade processes, and files for creating the staging database.

To prepare your z/OS upgrade environment and create the staging database, complete the following procedures:

- *Authorization Requirements for Performing Upgrade Procedures on the z/OS Host*
- *Customizing the JCL UNIT Parameter Value*
- *Creating the z/OS Setup Data Sets*
- *Preparing the Upgrade Environment and Building the Staging Database*
- *Removing Interface Tables and Triggers*

Authorization Requirements for Performing Upgrade Procedures on the z/OS Host

The user who performs upgrade procedures on the z/OS host requires the following authorities and access:

- A thorough understanding of zSeries architecture, JCL, and TSO functions and navigation.
- A TSO account with the authorization to allocate/create data sets on the z/OS host using the high-level qualifier specified in the FTP script.
- Access to the DB2 staging and target system.
- DB2 authorities to create DB2 objects and create DB2 VSAM data sets.
- Grant and Bind authority.
- DB2 Workload Manager refresh authority.

The default JOBCLASS is Q. Make sure you use the correct job class in the generated jobcards.

Customizing the JCL UNIT Parameter Value

If appropriate for your environment, you can amend the **UNIT=SYSDA** parameter setting for all of the JCL generated for the Siebel upgrade before you run any jobs on the mainframe. The **UNIT=SYSDA** parameter can be amended in the following data sets:

- JOB0
- Any of the VSTG000*n* or VSTG00*nn* data sets

To amend the UNIT parameter setting

1. Navigate to the data set you want to amend. Make a backup copy of the data set.
2. Go to Edit mode on the data set.
3. To change the UNIT=SYSDA parameter, enter the following command on the command line:

   ```
   c sysda sgunit all
   ```

   where sgunit is the unit name you want to specify.
4. Press PF3 to save your changes.

   All the JCL generated by the data set will use the new value you specified.

If you want to revert to the default **UNIT** parameter settings, either restore the backup copy of the data set you made in step 1 or transfer the staging data sets from the midtier again.

Note: Any amendments you make to the UNIT parameter are not applied to data sets that are allocated using REXX routines.

Creating the z/OS Setup Data Sets

Perform the steps in the following procedure to create the z/OS setup data sets.

To define and allocate z/OS setup data sets

1. After you have successfully transferred the staging files generated by the Upgrade Wizard up to Pause #0, log on to the host/LPAR where the staging database is to be created.
2. To create the REXX, CNTL and JCLLIB data sets, navigate to the **DSNHLQ.SIEBEL.JOB0** data set.
3. Go to Edit mode on the data set and submit the job using the JCL in the **DSNHLQ.SIEBEL.JOB0** data set.
4. After submitting the job, enter **cancel** on the command line or press PF3 to save changes.
5. Verify that the job ran successfully (return code is 0) and that the following data sets were created:
   - **DSNHLQ.SIEBEL.EXEC**
   - **DSNHLQ.SIEBEL.JCLLIB**
   - **DSNHLQ.SIEBEL.SP.SPCNTL**
6. Verify that the following PDS members contain information that you defined in the Database Configuration Wizard on the midtier:
   - **DSNHLQ.SIEBEL.EXEC(@TBOSTG)** contains the value for the staging schema qualifier.
   - **DSNHLQ.SIEBEL.EXEC(@TBOTAR)** contains the value for the target schema qualifier.

Preparing the Upgrade Environment and Building the Staging Database

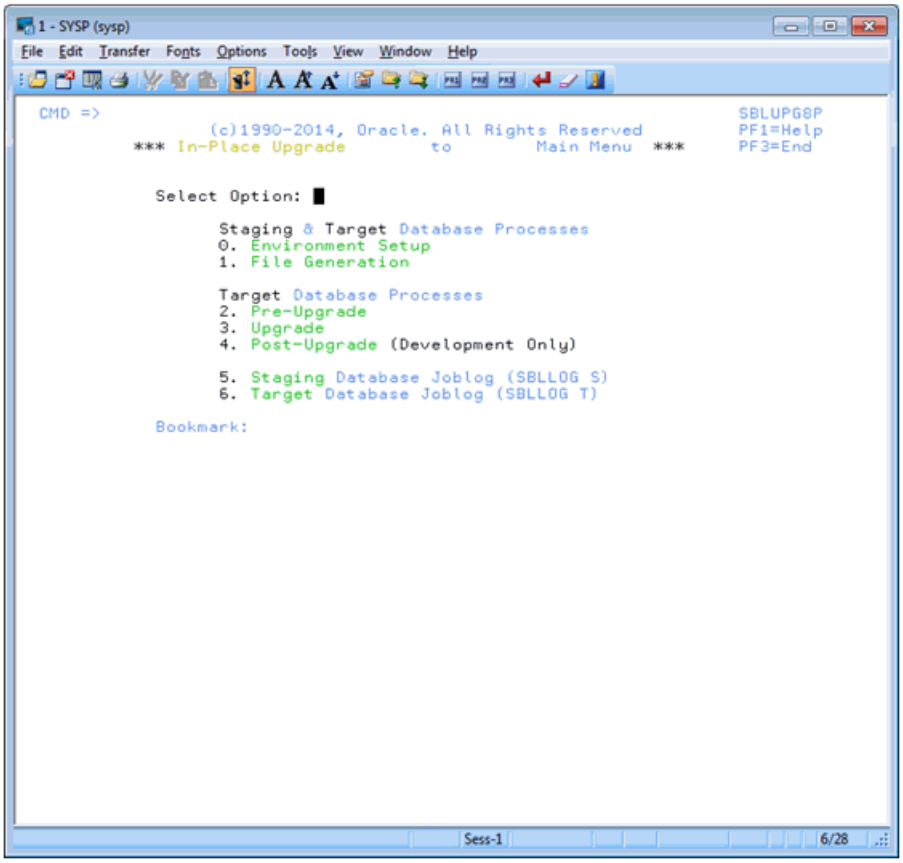
After the files transferred from the midtier have been defined and allocated, you must set up the z/OS system environment variables, receive the files (uncompress the files), create JCL libraries, create the staging database, and assign jobname prefixes. The following procedure describes how to perform these tasks.

To set up the z/OS upgrade environment and build the staging database

1. Use the following command to display the Siebel In-Place Upgrade Main Menu:

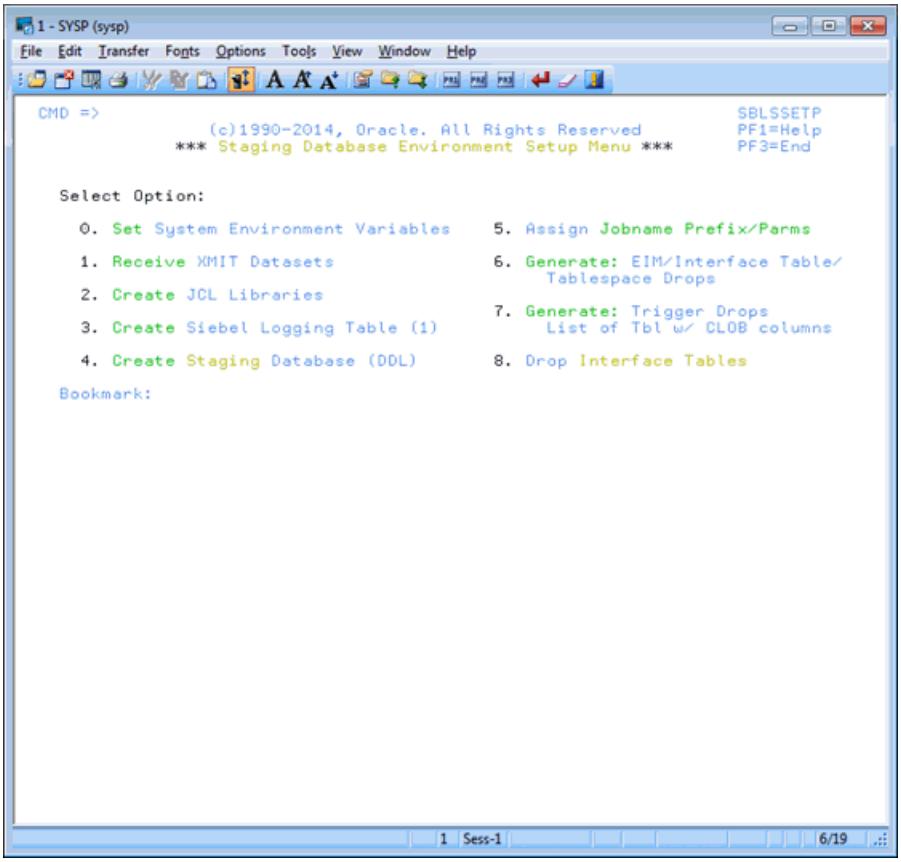
```
EXEC 'DSNHLQ.SIEBEL.EXEC'
```

   The Main Menu is displayed. The panel ID is SBLUPG8P.



2. On the Siebel Upgrade Main Menu, select option 0: Environment Setup, and press Enter.

   The Staging Database Environment Setup Menu is displayed. The panel ID is SBLSSETP. The options on this panel allow you to prepare files and set environment variables to create the staging database.



3. On the Staging Database Environment Setup Menu, select option 0: Set System Environment Variables.

   The Staging System Variable Definitions panel appears. The panel ID is SBLSETVP.
4. Enter the following information and then press Enter:
   - WLM Name. Enter the DB2 WLM name, for example, **DB28WLM**.
   - WLM Load Library. Enter the DB2 WLM load library name.
   - Extract DB2 Libraries: Enter the DB2 load / runlib library names for the target subsystem. (These are the libraries where the DSN, DSNTEP2, and DSNTIAUL programs are located.)
   - Staging DB2 Libraries. Enter the DB2 load / runlib library names for the staging subsystem.

   > **Note:** The libraries you enter must exist (that is, they must be cataloged) and the library names must not be blank. Blank library names terminate concatenation.
5. Press Enter.

   Messages appear indicating that the DSNHLQ and DB2 load library information was written to individual PDS members in the **DSNHLQ.SIEBEL.JCLLIB** library.
6. Press PF3 to return to the Staging Database Environment Setup menu.
7. Select option 1: Receive XMIT Datasets, and press Enter.
8. Submit the JCL in data set **DSNHLQ.SIEBEL.install.jcl(SPXMITR)**.

9. After submitting the job, enter cancel on the command line or press PF3 to save changes.
   This job receives XMIT format files. Three PDS data sets are allocated and populated with members. The three PDS data set names are:
   - **DSNHLQ.SIEBEL.LOAD**
   - **DSNHLQ.SIEBEL.SP.SPDDL**
   - **DSNHLQ.SIEBEL.DBRMLIB**
10. Verify that the job ran successfully.
    Review the output in SDSF or another job output facility and verify that the job RC is 0. Verify that all three data sets (and members) were received properly. If the job ends abnormally with a return code of User 99, fix the failed job before proceeding with the upgrade. For information on restarting failed jobs, see *Restarting Upgrade Jobs That Fail*.
11. Press PF3 to return to the Staging Database Environment Setup menu.
12. Select option 2: Create JCL Libraries, and press Enter. This option builds and allocates the install JCL libraries.
    You are placed in edit mode for data set **DSNHLQ.SIEBEL.VSTG0000**.

    Note: If you want to change the job card, do so at this time.

13. Run the job using the JCL in data set **DSNHLQ.SIEBEL.VSTG0000**. The install JCL libraries are built and allocated and path-specific panels are added to the **DSNHLQ.SIEBEL.EXEC** library.
14. Verify that the job ran successfully as described in *Verifying JCL Upgrade Jobs*.
    Verify that this job allocated and populated data set **DSNHLQ.SIEBEL.INSTALL.JCL**. This job also adds path-specific panels to the **DSNHLQ.SIEBEL.EXEC** library.
15. After submitting the job, enter cancel on the command line or press PF3 to save changes.
16. On the Staging Database Environment Setup menu, select option 3: Create Siebel Logging Table (1). This option allows you to create and load the logging table for the staging jobs and to create the staging TMPTBL_ADDR table.
    You are placed in edit mode for data set **DSNHLQ.SIEBEL.INSTALL.JCL(LOADLOG1)**.

    Note: If you want to change the job card, do so at this time.

17. Run the job using the JCL in data set **DSNHLQ.SIEBEL.INSTALL.JCL(LOADLOG1)**.
    This job runs the DDL to create the TMP_SBLLOG_STG table in the staging environment and loads an initial set of log entries for logging batch job execution.
18. Verify that the job ran successfully as described in *Verifying JCL Upgrade Jobs*.
    Verify that this job created the TMP_SBLLOG_STG table on the staging database and loaded an initial set of log entries for logging batch job execution.
19. After submitting the job, enter cancel on the command line or press PF3 to save changes.
20. On the Staging Database Environment Setup menu, select option 4: Create Staging Database (DDL), and press Enter to execute the DDL necessary to create the staging database.
    You are in edit mode for data set **DSNHLQ.SIEBEL.INSTALL.JCL(STGDDL)**.

    Note: If you want to change the job card, do so at this time.

21. Run the job using the JCL in data set `DSNHLQ.SIEBEL.INSTALL.JCL(STGDDL)`.
22. Verify that the job ran successfully as described in *Verifying JCL Upgrade Jobs*.

    This job executes the staging database DDL to create an exact schema version of the target database (database to be upgraded) in a staging environment using the Host/LPAR, DB2 subsystem and tableowner values you specified when you ran the Database Configuration Wizard.

    Only the schema exists; it does not have to be populated with data. All objects must contain the DDL syntax DEFINE NO. Index definitions include the DEFER YES syntax.
23. Press PF3 to return to the Environment Setup menu.
24. Select option 5: Assign Jobname Prefix/Parms, and press Enter to assign unique jobname prefixes to JCL upgrade jobs by job type.

    The Staging Jobname Prefix/Parm Definitions Jobcard parameters panel is displayed. The panel ID is SBLJPXP.
25. Enter a three-character job name prefix for all upgrade job types for items 1 through 20.

    It is recommended that the three-character prefix is unique to make it easier to find your jobs in the queue, but it is only required for the nonunique index and obsolete index job prefixes (which cannot be the same). The remaining five characters of the job name (which do not appear and cannot be modified) are defined by Oracle and are unique for all upgrade jobs.
26. You can change the NOTIFY value from `&SYSUID` to your TSO ID or leave it as `&SYSUID`.

    Note: If you want to remove the notify parameter from the job card, replace the symbolic parameter `&sysuid` with spaces.
27. Review the job card parameters and make any necessary changes. Verify that you are using the correct accounting, job class, and message class.
28. Press Enter after entering the job name prefix and parameter definitions. The JCL template files are updated. Messages indicate when each step is completed.

Verifying JCL Upgrade Jobs

After running each JCL upgrade job, you must verify that the job ran successfully by reviewing the output in SDSF or another job output facility. All jobs must complete successfully before you proceed to the next step.

Once you have run the job Receive XMIT Datasets as described in *Preparing the Upgrade Environment and Building the Staging Database*, all jobs contain one of the following JCL INCLUDE members to check job step return codes. If condition codes are not met, then the job ends abnormally, with a return code of User 99, and the job must be rerun.

Acceptable return codes for each step of each job is controlled by the following three JCL test condition checks:

- JCLTEST requires that the return code is less than or equal to 4
- JCLTEST0 requires that the return code is 0
- JCLTEST8 requires that the return code is less than or equal to 8

For example, if a job that includes the JCLTEST member generates a return code that is less than or equal to 4, the JCLTEST step is not processed and the JCLTEST return code is FLUSH. If the same job generates a return code that is greater than 4, the JCLTEST step is processed and the job ends abnormally.

Verify that the return code for each job is 0, 4, or 8 (depending on the job) and that the JCLTEST return code is FLUSH. If you do not see the FLUSH return code, you can verify the condition codes by searching for the condition code IEF206I.

Note: You must fix any failed jobs before proceeding with the upgrade. For information on restarting failed jobs, see *Restarting Upgrade Jobs That Fail*.

Removing Interface Tables and Triggers

Once you have build the staging database and prepared the upgrade environment on the z/OS host, the final task to complete before you generate the upgrade files is to remove triggers and EIM/Interface tables from the staging database. The following procedure describes this task.

To remove EIM/Interface tables and triggers from the staging database

1. On the Staging Database Environment Setup Menu, select option 6: Generate EIM/Interface Table/Tablespace Drops, and press Enter.
2. Submit the JCL in the data set **`DSNHLQ.SIEBEL.pregen.jcl(PREGEN1)`**. This job generates the EIM, Interface table, and table space DROP statements.
3. Verify that the job ran successfully as described in *Verifying JCL Upgrade Jobs*.
4. After submitting the job, enter cancel on the command line or press PF3 to save changes.
5. On the Staging Database Environment Setup Menu, select option 7. Generate Trigger Drops List of Tbl w/ CLOB columns, and press Enter.
6. Submit the JCL in the data set **`DSNHLQ.SIEBEL.pregen.jcl(PREGEN2)`**. A list of trigger drops and tables with CLOB columns is generated.
7. Verify that the job ran successfully.
8. After submitting the job, enter cancel on the command line or press PF3 to save changes.
9. On the Staging Database Environment Setup Menu, select option 8 Drop Interface Tables, and press Enter.
10. Submit the JCL in the data set **`DSNHLQ.SIEBEL.install.jcl (INFDRPJS)`** to drop EIM and Interface tables from the staging database.
11. Verify that the job ran successfully as described in *Verifying JCL Upgrade Jobs*.
12. After submitting the job, enter cancel on the command line or press PF3 to save changes.

This completes the process of creating a staging database. You can now generate the upgrade files.

11 Performing the Siebel Repository Merge

Performing the Siebel Repository Merge

This chapter lists the steps involved in performing a repository merge during a development environment upgrade which are specific to DB2 for z/OS upgrades. You also have to perform the relevant tasks in the chapter in *Siebel Database Upgrade Guide* that describes how to perform the Siebel Repository merge. This chapter includes the following topics:

- *About Backing Up the New Customer Repository or Database Schema*
- *About Reorganizing Tables Before the Repository Merge*
- *Performing a Siebel Repository Merge*
- *Regenerating the Siebel Repository Definition Files*
- *Generating the Runtime Repository Data*

About Backing Up the New Customer Repository or Database Schema

Upgrades: All upgrades.

Environments: Development environment only.

This topic is part of an upgrade process. See *How to Perform a Siebel Database Upgrade*.

The process of merging repositories to create the final customized repository used in the upgrade is time-intensive and resource-intensive. As a result, a merge might sometimes fail because of environmental factors, for example, space constraints. When this happens, the merge process continues, even if there is a fatal database error, and the errors might not be detected for some time.

If the merge fails, you must restore the database environment to its premerge state and run the merge again. There are two methods you can use to preserve the premerge environment so that you can restart the merge again if necessary:

- Back up the entire database. Prior to the merge, back up the entire database, then, if the merge fails, you can restore the database to its premerge state and rerun the merge operation. This is the recommended method of recovering from a failed merge.
- Export the New Customer Repository. Prior to the merge, export the New Customer Repository to create a backup copy; this preserves existing workflows. If the merge fails, you can delete the failed repository, then import the backup copy of the New Customer Repository. If you use this method of recovering from a failed merge, you also have to truncate the following merge log tables: S_MERGE_LOG, S_MERGE_LOG_OBJ, and S_MERGE_LOG_ATTR. See *Using Siebel Tools* for information on exporting and importing repositories using the Database Configuration Wizard.

About Reorganizing Tables Before the Repository Merge

Upgrades: All upgrades.

Environments: Development environment only.

This topic is part of an upgrade process. See *How to Perform a Siebel Database Upgrade*.

During the repository merge process, objects from four separate repositories are read and compared. Because this is a memory-intensive process, it is recommended that you execute the REORG utility on certain tables before performing the repository merge to improve performance.

> **Note:** Before executing the REORG utility, delete extra repositories from the database using Siebel Tools. Running the repository merge on a database with more than the four repositories which are required for the repository merge degrades repository merge performance. Before deleting extra repositories, make backups. Deletion of extra repositories can take a few hours.

The following tables receive a large number of inserts during each repository import; running REORGs on each of the following table's ROW_ID column will significantly increase the performance of the merge:

- S_APPLET
- S_APPLET_INTL
- S_APPLET_METH_MI
- S_APPL_WEB_TMPL
- S_APPL_WTMPL_IT
- S_BOCOMP
- S_BUSCOMP_UPROP
- S_COLUMN
- S_CONTROL
- S_CONTROL_INTL
- S_CONTROL_UPROP
- S_DDOWN_OBJECT
- S_EIM_FK_MAPCOL
- S_FIELD
- S_INDEX
- S_INDEX_COLUMN
- S_INTFLD_UPROP
- S_INT_CKEY_FLD
- S_INT_COMP
- S_INT_FIELD
- S_JOIN
- S_JOIN_SPEC
- S_LIST

- S_LIST_COL_INTL
- S_LIST_COLUMN
- S_PICKMAP
- S_SCREEN_VIEW
- S_UK_ATTJOIN
- S_USER_KEY_ATT
- S_VIEW_WTMPL_IT
- S_EIM_ATT_MAP

Note: After you reorganize tables, it is recommended that you run the RUNSTATS utility to update DB2 catalog statistics.

Performing a Siebel Repository Merge

Upgrades: All upgrades.

Environments: Development environment only.

This topic is part of an upgrade process. See *How to Perform a Siebel Database Upgrade*.

During the repository merge, objects from the Prior Siebel Repository, Prior Customer Repository, and New Siebel Repository are compared by name to identify the total set of object differences. The process also determines how conflicts between repository changes are resolved as they are merged into the New Customer Repository. There are three basic categories of object differences:

- New
- Deleted
- Modified

The repository merge executes the following processing steps to identify object differences:

- New or deleted objects. Identify objects that the customer has added by comparing their names in the Prior Customer Repository with the Prior Siebel Repository.

  All new customer objects are carried over from the Prior Customer Repository to the New Customer Repository. The repository merge typically avoids deletion of objects. Most of the objects that are deleted in the Prior Customer Repository reappear after the merge. The merge does this to avoid accidental deletion of objects which might be required. It does, however, allow deletion of specific types of objects. Such objects are deleted from the New Customer Repository during the merge.

  Objects of the following types are deleted from the New Customer Repository:
  - Control
  - Chart
  - List Column
  - Page Tab
  - Applet Web Template Item

    - View Web Template Item

- Objects with altered attributes. Identifies objects that exist in both the Prior Customer Repository and the New Siebel Repository, and compares the attributes of each object to determine if they have been modified. Attribute comparisons are of interest only for those attributes which were changed by the customer.

  If an object attribute was altered in the Prior Customer Repository, but not in the New Siebel Repository, the customer's attribute value is merged into the New Customer Repository.

  A conflict occurs, however, if an object attribute was altered in both the Prior Customer Repository and the New Siebel Repository, in which case the values in all three repositories would be different. In this event, the repository merge process uses the setting of the object attribute's StandardWins flag to determine how to resolve the conflict. If this is set to `Y`, the attribute value from the New Siebel Repository is used; if this is set to N, the attribute value from the Prior Customer Repository is used. Conflict resolutions can be overridden for each object attribute in the New Customer Repository. For additional information, see the chapter about performing the Siebel Repository merge in *Siebel Database Upgrade Guide* that describes Siebel repository object property conflicts and how to merge the repository.

About the Repository Merge

The configuration utility that you ran while upgrading your development environment loaded two standard repositories. You must now use Siebel Tools to merge your existing custom configuration into one of these new repositories, creating a custom configuration that includes all of your previous configuration changes.

The four repositories that currently exist in your development database are listed in the following table.

Repository Name	Description
Prior Siebel Repository	Standard repository, depending on the version from which you are upgrading.
Prior Customer Repository	Customized repository, depending on the version from which you are upgrading.
New Siebel Repository	Newly loaded standard repository.
New Customer Repository	Newly loaded repository into which your custom configuration is merged.

Follow the guidelines provided in *Optimizing Performance of the Repository Merge* and *Optimizing Foreground Performance of the Repository Merge* to improve performance of the repository merge.

The repository merge is a memory-intensive process that fails if insufficient memory is available on the Siebel Tools workstation. Before beginning a repository merge, make sure that the following preparations have been completed on the developer workstation. Make sure that the developer workstation on which Siebel Tools is running has been upgraded to the newest available version.

The method you use to perform a repository merge depends on whether your database uses an ASCII or EBCDIC encoding scheme:

- For ASCII databases, perform the procedure, *Merging the Repositories for an ASCII Database*.
- For EBCDIC databases, perform the procedure, *Merging Repositories for an EBCDIC Database*.

Optimizing Performance of the Repository Merge

There are several ways in which you can reduce the time required to complete the repository merge.

- Optimize the computer on which you are running the repository merge as follows:
  - Use a workstation with a minimum of 512 megabytes (MB) of RAM.
  - Allocate at least 2 GB of virtual memory, and a 2 GB page file. If the amount of virtual memory on the computer on which you are running the repository merge is too low, performance degrades significantly.
  - If necessary, increase the swap space, using the Control Panel System applet, and then restart the development workstation before proceeding.
  - Allocate plenty of 32K work space for the Sort utility.
  - Make sure you have a high-performing network connection.

    Note: A slow network connection significantly increases the time required for the repository merge.

  - Close all other applications.
  - Close all Siebel services.
- Defragment the disk. Fragmentation significantly affects system performance.
- On the workstation, check that the environment variable SIEBEL_LOG_EVENTS is set to zero. To check, enter the following command at the MS DOS prompt:

  ```
  echo %SIEBEL_LOG_EVENTS%
  ```

  If the command returns a value other than zero, you must set the SIEBEL_LOG_EVENTS variable to zero by performing the following steps:
  - Close Siebel Tools and any other Siebel client applications.
  - From the Start menu, select Settings, Control Panel, System, and then Environment.
  - In the Environment dialog box, in the System Variables box, select SIEBEL_LOG_EVENTS. Enter `0` in the Value box, and click Set. Click OK.
  - Relaunch Siebel Tools. The new setting becomes active.

    Note: The steps required to set this variable can vary depending on the operating system you are using.
- Optimize your database, because database performance can cause the repository merge to slow down considerably. Check the following:
  - Make sure that temporary table space has enough space allocated.
  - Make sure the database has enough space allocated.

- Make sure that the topmost logging applet in tools has no extra rows from previous repository merge runs when starting the repository merge.
- Make sure that the database is not loaded with users when the repository merge is run; no other users must be connected.

Optimizing Foreground Performance of the Repository Merge

To improve the foreground performance of the repository merge, use the following procedure.

To increase the foreground performance of the repository merge

1. From the Start menu, choose Control Panel, and then the System menu option.
2. Select the Advanced tab.
3. Select the Performance Options button.
4. In the Application Response box, click the Applications radio button and click OK.
5. While the repository merge process is running, click on the title bar of the Siebel Tools application to verify that the Siebel Tools application is the foreground application on the computer.

Note: After the repository merge process has finished, set the Performance setting back to its former value.

Merging the Repositories for an ASCII Database

Perform the following task to merge the development repositories for an ASCII database.

CAUTION: This procedure does not support EBCDIC databases. If you are upgrading a DB2 database that uses an EBCDIC encoding scheme, see *Merging Repositories for an EBCDIC Database*.

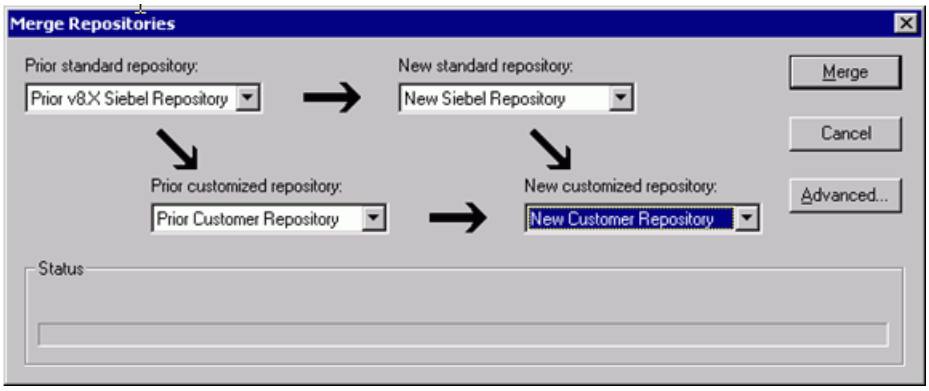
To merge the repository for an ASCII database

1. Log in to Siebel Tools.
2. From the Tools menu, choose View, Options, and then the Language Settings menu option.
3. Verify that the language mode setting is set as desired.
4. Choose File, and then Open Repository to open the Prior Customer Repository.

   Note: Open the Prior Customer Repository, not another repository. *Later steps in the repository merge process fail if you open the wrong repository.*

5. Choose Tools, Upgrade, and then Upgrade Application.

   The Merge Repositories dialog box appears.



The Merge Repositories dialog box provides the following options:

- Merge. This button merges the repositories you specify to produce a New Customer Repository.
- Cancel. This button cancels the repository merge and exits the Merge Repositories dialog box.
- Advanced. This button opens the Merge Options dialog box described in Step 8.

6. In the Merge Repositories dialog box, choose the appropriate (repository name) value from each drop-down list - the following table specifies the repository name values.

Drop-Down List Item	Value to Choose
Prior Standard Repository	Prior 7.*x* or 8.0 Siebel Repository, as appropriate for the version from which you are upgrading
Prior Customized Repository	Prior Customer Repository
New Standard Repository	New Siebel Repository
New Customized Repository	New Customer Repository

7. Review the settings in the Merge Repositories dialog box, then click Advanced.

   The Merge Options dialog box appears.

8. In the Merge Options dialog box, click the following check boxes as appropriate:

   - Abort merge if more than n errors occur.

     This option aborts the repository merge automatically if more than a designated number of errors occur.

     Note: The typical repository merge generates many benign errors. If you select this option, set the number of errors to a large value. This will help prevent the repository merge from aborting due to benign errors.

   - Incorporate Custom Layout.

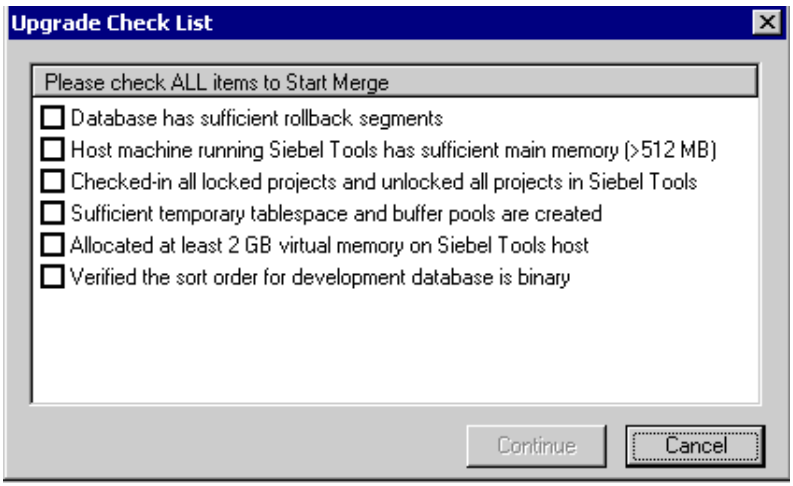
     Activate this option to help preserve field and button placement on prior custom or modified forms, views, and screens. Select a prior release and style for label placement.

The Prior Release is the release you are upgrading from. The Placement of Labels controls where labels are placed in forms. As of Siebel CRM version 7.7, label alignment of fields changed. Label vertical alignment changed from top (where labels align to the upper part of a cell) to middle (where labels align to the centre of a cell), font weight changed from bold to normal, and text alignment changed from left (first character alignment) to right (last character alignment). Select Labels on Top and Labels on Left to preserve the look and feel of releases prior to Siebel CRM version 7.7.

9. To continue, click OK.
10. Click Merge on the Merge Repositories dialog box.

    The Upgrade Check List dialog box appears.
11. In the Upgrade Check List dialog box, you must confirm that your environment meets the requirements for a successful repository merge. The Upgrade Check List has the following (check box) options:
    - Database has sufficient rollback segments.
    - Host machine running Siebel Toolss has sufficient main memory (>512 MB).
    - Checked-in all locked projects and unblocked all projects in Siebel Tools.
    - Sufficient temporary tablespace and buffer pools are created.
    - Allocated at least 2 GB virtual memory on Siebel Tools host.
    - Verified the sort order for development database is binary.

    Review each requirement and select the check box if your configuration meets or exceeds the requirement.



12. To continue, click Continue. The merge process begins.

    The repository merge process can take eight hours or more to complete. Timings can vary greatly depending on the kind of computer, the hardware configuration, virtual memory allocation, the use of the upgrade inheritance feature, and the level of customizations in the customer repository, such as new records or changed attributes. In addition to merging the base repository, all locales are merged. Additional time must be planned for each language, including the base language.

    Customizations are moved to the New Customer Repository, which results in a large number of database operations (inserts and updates). For each of these operations, logging records are created, and these log records also affect performance. If the repository is large, or the database setup is not optimal, this might take much longer.

13. After the merge completes, a dialog displays requesting that you make a backup of the New Customer Repository. Back up the New Customer Repository, then click OK in the dialog box.

To determine if the repository merge was successful, review the merge log files. You can then run the Siebel Postmerge Utilities. For information on both of these tasks, see the chapter in *Siebel Database Upgrade Guide* that describes how to perform a Siebel Repository merge.

Merging Repositories for an EBCDIC Database

Perform the following task to complete a repository merge for an EBCDIC database.

To perform a repository merge for an EBCDIC database

1. Use the Import/Export Repository option in the Database Configuration Wizard to export the following repositories from your prior EBCDIC database:
   - Prior Standard Repository
   - Prior Customized Repository
   - New Standard Repository
   - New Customer Repository

   See *Using Siebel Tools* for information on exporting repositories using the Database Configuration Wizard.
2. Prepare a new Siebel CRM ASCII database on which you will perform the repository merge. In the storage control file, the following tables must be defined with CLOBS set to Yes:
   - `S_SCHMST_DBSCPT`
   - `S_BITMAP_DATA`
   - `S_SERVICE_SCRPT`
3. Use the Import/Export Repository option in the Database Configuration Wizard to import the repositories exported from the EBCDIC database in step 1 into the ASCII database prepared in step 2.

   Note: Make sure you select the Import Custom Repository option to import all languages used.

   See *Using Siebel Tools* for information on importing repositories using the Database Configuration Wizard.
4. Launch Siebel Tools against the ASCII database.
5. Run the repository merge using the procedure, *Merging the Repositories for an ASCII Database*.
6. Generate Siebel EIM temporary columns. This task is described in the chapter in *Siebel Database Upgrade Guide* that describes how to perform the Siebel Repository merge.
7. Review the repository merge results to determine if the merge was successful. This task is described in the chapter in *Siebel Database Upgrade Guide* that describes how to perform the Siebel Repository merge. Verify that the repository merge was successful, and that all reported validation messages are either acceptable or fixed.
8. Use the Database Configuration Wizard to export the merged repository (the New Customer Repository) from the ASCII database.
9. Rename the existing New Customer Repository in the EBCDIC database.
10. Use the Database Configuration Wizard to import the merged New Customer Repository back into the EBCDIC database.

11. From the Tools application, pointing to the ASCII database, click *Repository* in the Object Explorer and copy the value against the Comments column for the New Customer Repository.
12. Connect to the EBCDIC database through the DB2 command line and update the Comments column with the copied value on the table **S_REPOSITORY** for the following value:

```
name= "New Customer Repository"
```

For example, if you copied a *Comments* value of:

```
APPLIED_PATCHES:Grid,UINavUpgrade,MVGUpgPatch77,UINavUpgrade,PCLWebTemplSwap,WFD,PM8.1;UpgEimCol,
```

Then, execute the following command against the EBCDIC database:

```
Update s_repository set comments='APPLIED_PATCHES:Grid,
 UINavUpgrade,MVGUpgPatch77,UINavUpgrade,PCLWebTemplSwap,WFD,PM8.1;UpgEimCol'
Where name=New Customer Repository'
```

Regenerating the Siebel Repository Definition Files

Upgrades: All upgrades.

Environments: Development environment only.

Platforms: All platforms.

This topic is part of an upgrade process. See *How to Perform a Siebel Database Upgrade*.

If you have modified repository objects after the development environment upgrade (upgphys) and before upgrading the production test environment, you must regenerate the schema.ddl and custrep.dat files. These files were created during the upgphys process:

- Schema.ddl. This file contains the logical definition of the Siebel database.
- Custrep.dat. This file contains the definition of repository objects.

These files are used as input to the production test and production environment upgrades. These files contain only the Runtime Repository and required Design Time Repository which is required for production environments. There is an additional custrep_dev.dat that contains the entire development repository. This can be created for backup. If you modify the object definitions or the schema definitions in the repository after these files have been created, you must regenerate the files.

Regenerating the schema.ddl File

Use this procedure to regenerate the schema.ddl file.

To regenerate the schema.ddl file

1. On the Siebel Server where the Siebel Database Server files are installed, navigate to the following location:

   Windows: **SIEBEL_ROOT\bin**

   UNIX: **$SIEBEL ROOT/bin**

2. Run the following command:

```
ddldict /u DatabaseOwner /p Password /c "ODBCDataSource" /d TableOwner /f DBSRVR_ROOT\DatabasePlatform
\schema.ddl /e y /a y /l SiebelLogDir\sch_dict.log /n "Siebel Repository" /t dcir
```

   where:

   - DatabaseOwner is the Siebel database Administrator account name.
   - Password is the Siebel database Administrator account password.
   - ODBCDataSource is the ODBC name for connecting to the database. Enclose the name in quotes.
   - TableOwner is the Siebel table owner name.
   - DBSRVR_ROOT is the absolute path to the Siebel Database Configuration Utilities installation directory.
   - DatabasePlatform is the Siebel Database Configuration Utilities directory name for the database, that is, DB2390. The example shows Windows path syntax. On UNIX systems, use UNIX path syntax.
   - SiebelLogdir is the path to the directory where you want the output log placed (log output directory). The example shows Windows path syntax. On UNIX systems, use UNIX path syntax.

3. After the command completes, review the output logs for errors. If the log indicates there are errors, create a service request (SR) on My Oracle Support. You can log service requests by accessing My Oracle Support (Service Request tab), or by using your existing phone support numbers to contact Oracle Global Customer Support.

Regenerating the custrep.dat File

Use this procedure to regenerate the custrep.dat file.

To regenerate the custrep.dat file

1. On the Siebel Server where the Siebel Database Configuration Utilities files are installed, navigate to the following location:

   Windows: `SIEBEL_ROOT\bin`

   UNIX: `$SIEBEL ROOT/bin`

2. Run the following command:

```
repimexp /a e /u DatabaseOwner /p Password /c "ODBCDataSource" /d TableOwner /r "New Customer
Repository /f DBSRVR_ROOT\DatabasePlatform\custrep.dat /l SiebelLogDir\exprep.log
```

   where:

   - DatabaseOwner is the Siebel database Administrator account name.
   - Password is the Siebel database Administrator account password.
   - ODBCDataSource is the ODBC name for connecting to the database. Enclose the name in quotes.
   - TableOwner is the Siebel table owner name.

- DBSRVR_ROOT is the absolute path to the Siebel Database Configuration Utilities installation directory. The example shows Windows path syntax. On UNIX systems, use UNIX path syntax.
- DatabasePlatform is the Siebel Database Configuration Utilities directory name for the database, that is, DB2390.
- SiebelLogdir is the path to the directory where you want the output log placed. The example shows Windows path syntax. On UNIX systems, use UNIX path syntax.

3. After the command completes, review the output logs for errors. If the log indicates there are errors, create a service request (SR) on My Oracle Support. You can log service requests by accessing My Oracle Support (Service Request tab), or by using your existing phone support numbers to contact Oracle Global Customer Support.

Generating the Runtime Repository Data

Upgrades: All upgrades.

Environments: Development environment only.

Once the Incremental Repository merge is complete and after all merge conflicts have been resolved and before starting upgphys you must generate the Siebel Runtime Repository data. To generate the Siebel Runtime Repository data, you must execute the Full Publish command in Siebel Tools. For more information about executing the Full Publish command in Siebel Tools, see *Using Siebel Tools* .

Full publish has to be executed against the New Customer Repository. Make sure to change the DockRepositoryName in tools.cfg to New Customer Repository and verify that Siebel tools launches against the correct Repository.

Note: This is a mandatory step and not executing this successfully will have consequences in the further steps of upgrade.

The full Publish command is the following:

```
siebdev /c tools.cfg /TL ENU /d ServerDataSrc /u <username> /p <password> /
FullPublish
```

The TL `<lang_code>` parameter is a mandatory argument for Full Publish because it specifies the published languages for the database. You can add multiple languages separated by a comma. For example:

```
TL ENU,DEU,JPN
```

Depending on the number of the languages specified, the Full Publish process spans the number of Siebdev processes to compile objects in the specified language and write the data to the database.

Siebdev silently closes after completion of a Full Publish, which indicates there are no errors. If there are errors during the Full Publish process, the Siebdev process throws errors and stops.

In the log file, Failure Reported For indicates an error with an object. The log file lists the object name and type for Failure Reported For errors. Any Workflow Process errors in the log file can be ignored. In addition, the following warning errors in the log file (are acceptable and) can be ignored:

```
SBL-DAT-00144: Could not find '<?>' named '<?>'. This object is inactive or nonexistent.
SBL-DAT-00398: Field 'Extension Flag' does not exist in definition for business component ''
SBL-DAT-00388: Table 'S_RR_TABLE' defined multiple times.
SBL-DAT-60292: Root workspace is not editable.
```

12 Performing the Siebel Incremental Repository Merge

Performing the Siebel Incremental Repository Merge

This chapter provides guidelines for performing an incremental upgrade of the Siebel database. It includes the following topics:

- *About the Siebel Incremental Repository Merge*
- *Process of Performing an Incremental Upgrade of the Siebel Database from Siebel CRM Version 8.1.1.x*
- *Before You Begin*
- *Performing the Incremental Repository Merge*
- *Editing the Siebel Tools Configuration File After the Development Environment Merge*

Note: Use this chapter if you are upgrading from Siebel CRM version 8.1.1.0 and later (SIA repository) to Siebel Innovation Pack 2016 or later.

About the Siebel Incremental Repository Merge

If you are upgrading from Siebel CRM version 8.1.1.*x* (SIA repository) to Siebel 2019 or later, you perform an incremental merge of the Siebel database. Performing an incremental repository merge is required if you intend to use the new features included in the Siebel 2019 or later.

The process of performing an incremental repository merge is described in detail in *Siebel Database Upgrade Guide* . This chapter describes tasks that are specific to the z/OS platform. Where necessary, you are directed to *Siebel Database Upgrade Guide* for information on tasks that are common to all database platforms.

Process of Performing an Incremental Upgrade of the Siebel Database from Siebel CRM Version 8.1.1.*x*

To perform an incremental upgrade of the Siebel database from Siebel CRM Version 8.1.1.*x*, perform the following tasks:

1. *Before You Begin*.
2. Perform the following required tasks for the incremental repository upgrade.

   For information on completing these tasks, see the Incremental Repository Merge chapter in *Siebel Database Upgrade Guide*

   - Preparing Siebel Tools for ODBC data source names

- Editing the Siebel Tools configuration file
- Testing your Siebel Tools login
- Setting a primary non-ENU language
- Copying ancestor repositories.

3. Preparing to run the Siebel Database Configuration Wizard.

   Identify the information you must enter when running the Database Configuration utilities to perform the incremental repository upgrade. For information, see *Information Required by the Database Configuration Wizard*.
4. Upgrade the Siebel Database schema in the development environment by performing all of the tasks listed in the topic *Upgrade Siebel Database Schema (upgrep)* .

   To upgrade the Siebel Database schema, you must run the Database Configuration Wizard upgrade option, Development environment: Upgrade Siebel Database Schema (upgrep), on two occasions, selecting each of the following upgrade processes in turn:

   a. zSeries Staging of Files for Upgrade
   b. zSeries Seed/Repository Upgrade

   Note: You do not need to perform the task to install new license keys. This step is not required when performing a 8.1.1.*x* upgrade to Siebel Innovation Pack 2016 or later.
5. *Performing the Incremental Repository Merge*.
6. Review the Siebel Repository merge log files and resolve any errors, such as object property conflicts. If the incremental repository merge stops because of errors, resolve the errors then restart the merge.

   For information on these tasks, see the Incremental Repository Merge chapter in *Siebel Database Upgrade Guide* .
7. Upgrade the custom database schema in the development environment by performing all of the tasks in *Upgrade Custom Database Schema (upgphys)*.

   To upgrade the custom Database schema, you must run the Database Configuration Wizard upgrade option, Development environment: Upgrade Custom Database Schema (upgphys).
8. *Editing the Siebel Tools Configuration File After the Development Environment Merge* .
9. Prepare for the production upgrade by performing the following tasks, if applicable:

   - *About Moving the Customized Repository and Schema Definition Files*.
   - *Regenerating the Siebel Repository Definition Files*.
10. Upgrade the Siebel Database schema in the production or production test environments by performing all of the tasks listed in the following topics:

    - (Production Test) *Process of Upgrading a Production Test Environment*
    - (Production) *Process of Upgrading a Siebel Production Environment*

    To upgrade the Siebel Database schema in either a production or production test environment, you must run the Database Configuration Wizard upgrade options:

    - Prepare for Production Upgrade
    - Upgrade Siebel Database Schema (upgrep + upgphys). Select the following upgrade processes, as applicable.

      - zSeries Staging of Files for Upgrade

- zSeries Seed/Repository Upgrade

Before You Begin

Before starting the incremental upgrade process, you must have installed the Siebel Enterprise Server, which includes the Siebel Gateway Name Server, the Siebel Server, and the Siebel Database Server. For installation information, see *Siebel Installation Guide for the operating system you are using* .

This task is a step in *Process of Performing an Incremental Upgrade of the Siebel Database from Siebel CRM Version 8.1.1.x*.

Note: Before running incremental repository merge, you must have one and only one repository in your development instance and that repository must be named Siebel Repository. Also, if you must delete any additional repositories, the only acceptable way to do so is to select the repository record in Siebel Tools and delete it. It is not acceptable to delete repositories using direct SQL.

About the Siebel Server and Siebel Tools on Windows

It is recommended that the Siebel Server and Siebel Tools be installed on the same Windows computer. If your Siebel Server is installed on Windows, then the merge process automatically starts Siebel Tools to execute the incremental repository merge. For this reason, the Siebel Database Configuration Wizard must be started from the computer where Siebel Tools is installed.

If the Siebel Enterprise server is not installed on the same computer as Siebel Tools, then map a network drive from the computer where Siebel Tools is installed to the computer where Siebel Enterprise Server is installed. Use this mapped drive to specify the location of the Siebel Server when you run the Siebel Database Configuration Wizard.

Performing the Incremental Repository Merge

This topic describes how to perform the incremental repository merge to upgrade the Siebel database in your development environment.

This task is a step in *Process of Performing an Incremental Upgrade of the Siebel Database from Siebel CRM Version 8.1.1.x*.

To perform the incremental repository merge

1. After you have run the Siebel Database Configuration Wizard to upgrade the Siebel repository and import seed data in the development environment (this is the last step in the upgrep process in *Process of Performing an Incremental Upgrade of the Siebel Database from Siebel CRM Version 8.1.1.x*), the Wizard pauses and prompts you to backup the database and run database statistics. Perform these tasks as follows:
   - *About Backing Up the New Customer Repository or Database Schema*
   - *Generating RUNSTATS Jobs*
2. Return to the Siebel Database Configuration Wizard and either click Yes to continue with the upgrade or click No to stop at this step and restart the Wizard later.

- (Windows) If you click yes, then provided that Siebel Tools is also installed on Windows, the Wizard automatically starts the incremental repository merge.
- (UNIX) If you selected Y to continue with the upgrade, the Wizard displays a message directing you to perform the incremental repository merge. Enter N to pause the Wizard, then perform the steps in *Executing the Incremental Repository Merge Under UNIX*.

  To resume the upgrade at a later point, see *Starting the Siebel Upgrade Wizard*.

3. After the incremental repository merge has completed, review the merge log files in **`Siebel Tools installation directory\LOG`**.

   For information on reviewing merge log files and Siebel repository merge errors, see the chapter in *Siebel Database Upgrade Guide* that describes how to perform the Siebel incremental repository merge and reviewing the merge report.

   Note: If the merge fails, or contains unacceptable errors, you can restart the merge as described in *Siebel Database Upgrade Guide* .

4. Perform the following postmerge tasks. For information on performing these tasks, see *Siebel Database Upgrade Guide* :
   - Review Siebel object property conflicts
   - Review conflicts at the attribute level
   - Mark conflict resolution as complete using Siebel Tools
5. Return to the upgrade wizard, then do one of the following:
   - (Windows) After you mark conflict resolution as complete, the Wizard automatically executes the last step in the upgrade, then finishes. Click OK.
   - (UNIX) Restart the upgrade wizard as described in *Starting the Siebel Upgrade Wizard*. The Wizard completes the upgrade, then finishes.

Executing the Incremental Repository Merge Under UNIX

Use the following task to execute the incremental repository merge if you are running the Siebel Database Configuration Wizard on UNIX, or if Siebel Tools is installed on UNIX.

Incremental repository merge is started automatically under Windows, but under UNIX you must initiate the process manually. You begin executing the incremental merge when the Upgrade Wizard pauses and notifies you to execute the manual merge.

To execute incremental repository merge under UNIX

1. Copy the irm_sav_file.ssf from **`SIEBEL_ROOT\bin`** from the UNIX computer to **`Tools_ install_directory\bin`** on the Windows computer.
2. Execute the following command to start the incremental repository merge: **`siebdev /u UserName /p Password /d "ToolsDataSource" /c"SiebelToolsRoot\BIN\$Language\tools.cfg" /iPackmode /IRM UpgDeltaMerge`**
3. Click Yes to continue.

   To pause now and resume later, click No. To resume, see *Starting the Siebel Upgrade Wizard*.

Editing the Siebel Tools Configuration File After the Development Environment Merge

After you have completed the upgphys process to upgrade the custom database schema in the development environment (see *Process of Performing an Incremental Upgrade of the Siebel Database from Siebel CRM Version 8.1.1.x*), then edit the Siebel Tools configuration file as described in this topic.

This task is a step in *Process of Performing an Incremental Upgrade of the Siebel Database from Siebel CRM Version 8.1.1.x*.

Note: You set the prefix back to X_ from the changed value of SBL_ to enable you to create your own custom symbolic strings after the merge.

To change the Sym Str Prefix value in tools.cfg file

1. Navigate to `Tools_install_directory\bin\lang` , and open the tools.cfg file.
2. Make the following changes in the tools.cfg file:
   a. Change the SymStrPrefix value from `SBL_` back to the default value of `X_`.
   b. Make sure the Set EnableToolsConstrain value is set to the default value of False. If it is not, then set the value to False.
   c. Change the DockRepositoryName value from New Customer Repository to Siebel Repository.
3. Save the Tools.cfg file.

13 Generating the Siebel Upgrade Files

Generating the Siebel Upgrade Files

This chapter describes how to generate the Siebel CRM upgrade files using the staging database. It includes the following topics:

- *About Generating the Upgrade Files*
- *Process of Generating the Upgrade Files*
- *Required Tasks for Generating the Upgrade Files*
- *Preparing the Additive Schema and JCL Files on the z/OS Host*
- *Applying the Additive Schema Changes to the Production Staging Database*
- *Preparing for Table Creation on the Staging Database*
- *Preparing and Executing the Nonadditive Schema and JCL Files on the z/OS Host*
- *Processing the Index Schema File*
- *Building JCL Templates for the Target Database*

About Generating the Upgrade Files

Upgrades: All upgrades.

Environments: All environments

After you have created the staging database, you generate the upgrade files by running the Upgrade Wizard against the staging database. The upgrade files are then transferred to the z/OS host where the JCL preparation process is done. The JCL preparation process constructs all the JCL to run the preupgrade and upgrade (in-place) processes for both the staging and target databases.

The midtier file generation process can be performed ahead of the in-place target database upgrade provided no further changes are made to the target database schema.

> **Note:** The procedures in this chapter use Siebel-Scheduled job execution, but you can also choose to use a third party job scheduler. For information on choosing a scheduler, see *Executing Jobs Using Siebel-Scheduled Mode or Vendor-Scheduled Mode*.

Process of Generating the Upgrade Files

Upgrades: All upgrades.

Environments: All environments

When the staging database has been created, you run the Database Configuration Wizard to generate the upgrade files. This process involves the following tasks:

1. Complete the tasks described in *Required Tasks for Generating the Upgrade Files*.
2. Restart the upgrade process from the midtier to generate upgrade files. See *Restarting the Siebel Upgrade Wizard After Pauses* for further information. The Upgrade Wizard stops at Pause #1.
3. Transfer the files generated up to Pause #1 to the z/OS host and apply them. See *Preparing the Additive Schema and JCL Files on the z/OS Host*.
4. (Production environment only) If you are upgrading a production database, apply the additive schema changes to the staging database. See *Applying the Additive Schema Changes to the Production Staging Database* for further information.
5. Restart the Upgrade wizard as described in *Restarting the Siebel Upgrade Wizard After Pauses*. After generating further files, the Upgrade Wizard stops at Pause #2.
6. Transfer the files generated up to Pause #2 to the z/OS host and run the jobs against the staging database. See *Preparing and Executing the Nonadditive Schema and JCL Files on the z/OS Host*.
7. Return to the midtier and restart the Upgrade wizard as described in *Restarting the Siebel Upgrade Wizard After Pauses*. The Upgrade Wizard generates the SCINDX.SQL file on the midtier and stops at Pause #3.
8. Transfer the SCINDX.SQL file to the z/OS host and apply it to drop old schema indexes and create new Siebel CRM schema indexes. See *Processing the Index Schema File*.
9. Build the JCL Templates that will be used to upgrade the target database. See *Building JCL Templates for the Target Database* for further information.

This completes the File Generation Process.

Required Tasks for Generating the Upgrade Files

Upgrades: All upgrades.

Environments: All environments

This topic is part of an upgrade process. See *How to Perform a Siebel Database Upgrade*.

Complete the following tasks before starting to generate the upgrade files:

1. After you have created the staging database, you must extract the storage layout of the Siebel staging database from the DB2 catalog and merge it with a Siebel CRM storage control file so as to preserve any customizations you have made to the database layout in the upgraded database. To do this, run the Database Configuration Wizard and select the Extract from Catalog and Merge with Template option.

   Name the extracted storage control file as follows:

   - Development environment upgrade: storage_upg_dev.ctl
   - Production environment upgrade: storage_upg_prod.ctl

   For further information on this task, see *Extracting the Storage Control File*.
2. Validate the merged storage control file generated in Step 1 against the staging database. For information on this task, see *Validating the Extracted Storage Control File*. If there are validation errors, you must correct them before proceeding with the upgrade.
3. Rebuild tables in the target database that contain LONG VARCHAR columns. For information on this task, see *Rebuilding Target Tables Containing LONG VARCHAR Columns*.

You can rebuild target tables at any time before you start the upgrade but you must have completed this task before you apply ADDITIVE schema changes to the production staging database.

Preparing the Additive Schema and JCL Files on the z/OS Host

Upgrades: All upgrades.

Environments: All environments

This topic is part of an upgrade process. See *How to Perform a Siebel Database Upgrade*.

When you restart the Upgrade Wizard after creating the staging database, it generates SQL and JCL templates for the file generation process. Specifically, the following files are generated:

- Additive upgrade files
- Pret files
- Data migration files

When the Upgrade Wizard stops at Pause # 1, you must transfer these files to data sets on the z/OS host. These data sets are then used to create the SQL and JCL templates used to perform the upgrade. These tasks are described in this topic.

Perform the following procedures:

- *Transferring the Additive Schema, PRET, and Data Migration Files to the z/OS Host*
- *Preparing the z/OS Data Sets*
- *Preparing the Additive Schema SQL and JCL Templates*

Transferring the Additive Schema, PRET, and Data Migration Files to the z/OS Host

Use the following procedure to transfer the schema DDL files and the PRET and data migration files generated by the Upgrade Wizard on the midtier up to Pause #1 to the z/OS host.

Note: Before transferring the generated files to the z/OS host, edit them as required by relevant publications such as bulletins, alerts, and *Siebel CRM Update Guide and Release Notes* on My Oracle Support.

To transfer the files generated on the midtier

1. Navigate to the **`\DB2390\dbsrvr\dboutput\upgrade`** directory (Windows) or the **`/DB2390/dbsrvr/dboutput/upgrade`** directory (UNIX) and double-click the ftp_pause1.bat file (Windows) or issue the following command (UNIX):

   ```
   ftp -vn < ftp_pause1.txt > ftp_pause1.log
   ```

2. Enter your TSO password and press Enter.

   All the Pause #1 files are transferred from the midtier to the z/OS host.

3. Review the ftp_pause1.log file which is created in the upgrade directory and verify that all the files listed in the ftp_pause1.txt file transferred successfully to z/OS staging data sets.

Note: If the FTP script fails because the password prompt is suppressed, then add the password after the user name in the ftp_pause1.txt, ftp_stg1.txt, ftp_pause1.txt, ftp_pause2.txt, and ftp_pause3.txt files and repeat the this procedure.

Preparing the z/OS Data Sets

When you have transferred the files generated by the Siebel Upgrade Wizard up to Pause #1 from the midtier to the z/OS host, allocate and populate the data sets used to execute the upgrade jobs as described in the following procedure.

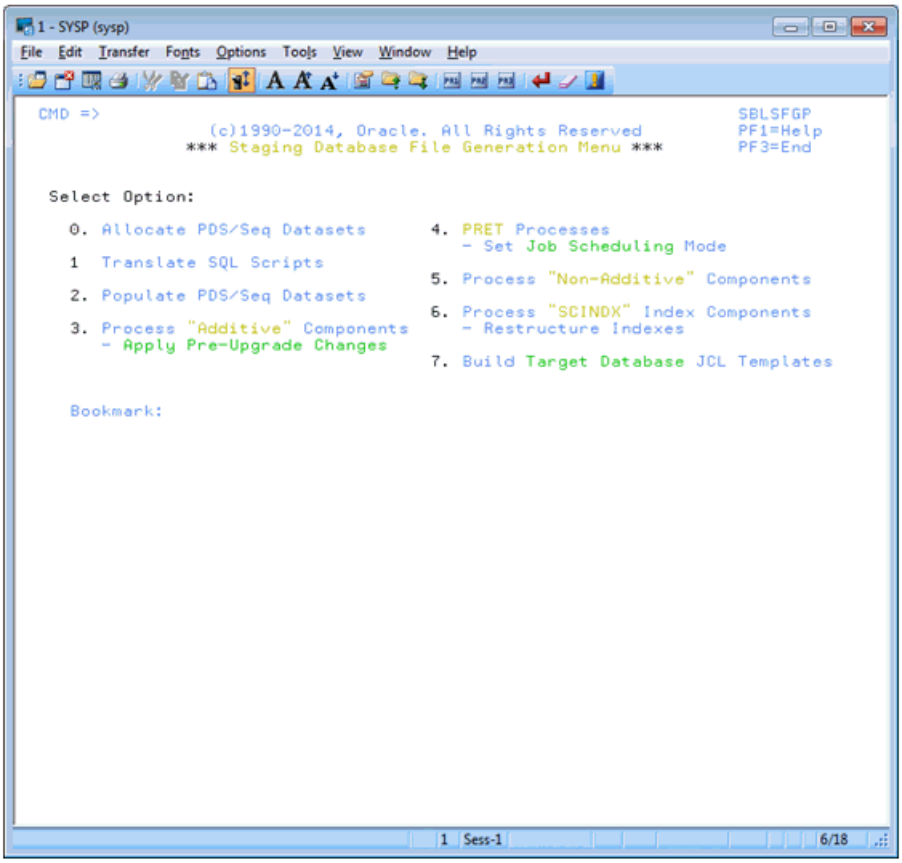
To prepare the z/OS data sets

1. Go to the Siebel Upgrade Main Menu by entering the following command:

```
TSO EXEC 'DSNHLQ.SIEBEL.EXEC'
```

   The panel ID is SBLUPG8P. You can find the panel ID in the lower corner of the screen.
2. On the Siebel Upgrade Main Menu, select option 1: File Generation, and press Enter.

   The Staging Database File Generation Menu is displayed. The panel ID is SBLSFGP.



3. Select option 0: Allocate PDS/SEQ Datasets, and press Enter.
4. Run the job using the JCL in data set **`DSNHLQ.SIEBEL.INSTALL.JCL(CREATEDS)`** to allocate data sets.
5. Verify that the job ran successfully and allocated data sets. For information, see *Verifying JCL Upgrade Jobs*.
6. After submitting the job, enter **`cancel`** on the command line or press PF3 to save changes.
7. On the Staging Database File Generation Menu, select option 1: Translate SQL Scripts, and press Enter.

   This option is used to run the JCL to translate SQL scripts. Language-specific data migration SQL types are translated for PRESCHM, UPGIDSS and Gen Primary jobs.
8. Run the job using the JCL in data set **`DSNHLQ.SIEBEL.SP.CNTL(REC1147)`** where 1147 varies according to your upgrade path and language. If your primary language is ENU, the job runs in foreground mode. If your primary language is not enu, the job runs in batch mode. RECF1147 is used in the case of French language support.
9. Verify that the job ran successfully as described in *Verifying JCL Upgrade Jobs*. Check the Bookmark field to verify that the job translated the SQL scripts.
10. On the Staging File Generation Menu, select option 2: Populate PDS/SEQ Datasets, and press Enter.
11. Run the job using the JCL in data set **`DSNHLQ.SIEBEL.INSTALL.JCL(UNPACK01)`**.
12. Verify that the job ran successfully as described as described in *Verifying JCL Upgrade Jobs*. The job return code must be 0, although a return code of 4 is acceptable if the data set is empty.

    Verify that this job populates (unpacks) all PDS members into corresponding PDS data sets and sequential files. It is acceptable to have some empty data sets.

> **Note:** PDS data sets are populated using IEBUPDTE, sequential files are populated using IEBGENER.

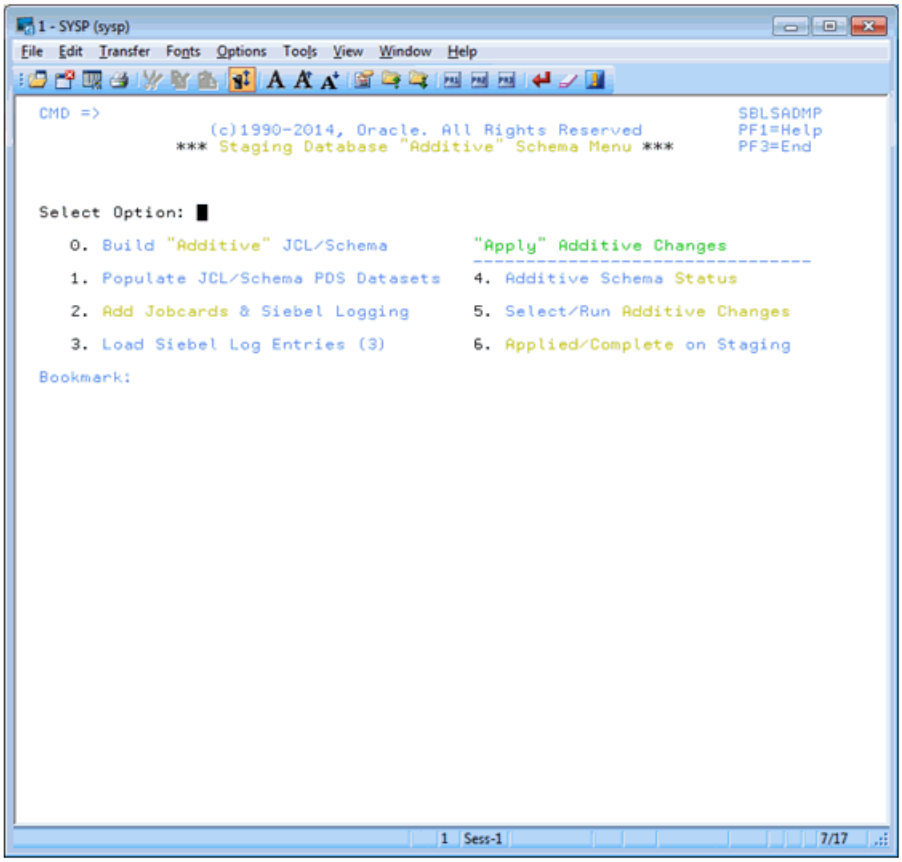
Preparing the Additive Schema SQL and JCL Templates

Perform the following procedure to prepare the additive schema files.

To prepare additive schema SQL and JCL templates

1. On the Staging Database File Generation Menu, select option 3: Process Additive Components, and press Enter.

   The Staging Database Additive Schema Menu is displayed. The panel ID is SBLSADMP.



2. Select option 0: Build Additive JCL/Schema, and press Enter,

   Status messages are displayed as the additive components are built.
3. On the Staging Database Additive Schema Menu, select option 1: Populate JCL/Schema PDS Datasets, and press Enter.
4. Run the job using the JCL in data set **`DSNHLQ.SIEBEL.INSTALL.JCL(UNPKADD)`**.
5. Verify that the job ran successfully as described in *Verifying JCL Upgrade Jobs*. Verify that the return code is **`0`** and that the job populated the JCL and schema PDS data sets.
6. After submitting the job, enter **`cancel`** on the command line or press PF3 to save changes.
7. On the Staging Database Additive Schema Menu, select option 2: Add Jobcards & Siebel Logging, and press Enter.

   A message appears, asking you to confirm that the **`DSNHLQ.SIEBEL.PROC(ISPBAT)`** (ISPF batch procedure) is correctly configured.

8. Verify that the ISPF batch procedure, `dsnhlq.siebel.proc(ispbat)`, is modified to your installation standards, then enter Y to confirm and press Enter.
9. Run the job using the JCL in data set `DSNHLQ.SIEBEL.INSTALL.JCL(SUBJCL12)`. This job takes some time to complete.
10. Verify that the job ran successfully with a return code of 0. For information, see *Verifying JCL Upgrade Jobs*.

    The JCL job card counts are displayed by job type. The number of jobs that are build for the additive components varies according to your upgrade path.
11. After submitting the job, enter `cancel` on the command line or press PF3 to save changes.
12. On the Staging Database Additive Schema Menu, select option 3: Load Siebel Log Entries (3), and press Enter. This option runs the job to load the Siebel logging table with additive entries for staging jobs.
13. Run the job using the JCL in data set `DSNHLQ.SIEBEL.INSTALL.JCL(LOADLOG2)`.
14. Verify that the job ran successfully with a return code of 0. For information, see *Verifying JCL Upgrade Jobs*.

    Verify that additional log entries have been loaded to the TMP_SBLLOG_TAR table on the staging database.
15. After submitting the job, enter `cancel` on the command line or press PF3 to save changes.
16. On the Staging Database Additive Schema Menu, select option 4: Additive Schema Status, and press Enter.

    The Additive Schema Status panel is displayed. The panel ID is SBLSADLP. A list of the additive schema members is displayed and their staging status, either PENDING or COMPLETED.
17. To view a member in browse mode, select the member by entering any nonblank character in the Opt column for the member (you can select more than one member to view on each panel).
18. Press Enter. If you selected more than one member to view, press PF3 to move to the next member.

Applying the Additive Schema Changes to the Production Staging Database

Upgrades: All upgrades.

Environments: Production test, production.

> **Note:** For development environment upgrades, all schema changes are processed as nonadditive, therefore this step is not required.

This topic is part of an upgrade process. See *How to Perform a Siebel Database Upgrade*.

When you are upgrading the production staging database, you can apply all or a subset of the additive schema upgrade files ahead of the in-place upgrade. Only the additive upgrade files that you choose to apply to the staging database can be applied as additive changes to the target database before the in-place upgrade. Any additive changes you do not apply become part of the nonadditive changes that are applied later. See *Applying the Nonadditive Schema Changes* for further information.

> **Note:** You must rebuild tables in the target database that contain LONG VARCHAR columns before you apply additive schema changes to the production staging database. For information, see *Rebuilding Target Tables Containing LONG VARCHAR Columns*.

To apply additive schema changes

1. On the Staging Database Additive Schema Menu, select option 5: Select / Run Additive Changes, and press Enter.

   The Staging Pending ADDITIVE Job Submission Menus is displayed. The panel ID is SBLSADDP.
2. Choose whether you want to apply all, none, or a subset of the additive schema changes:

   - If you decide not to apply any of the additive schema changes, enter N for the Apply All (Y/N) prompt. Press PF3 until you return to the Staging Database File Generation menu.
   - To apply all of the additive schema changes, do the following:
     - Enter Y for the Apply All (Y/N) prompt, and press Enter.
     - Run the job using the JCL in data set `DSNHLQ.SIEBEL.INSTALL.JCL(ADDVSCHS)`.
   - To apply a subset of the additive schema changes, enter either J, S, or SUB in the Opt column of the appropriate member, and press Enter:
     - Typing SUB in the Opt column for a member automatically submits the JCL to apply the additive change in the member: `DSNHLQ.SIEBEL.ADD.JCL(member)`
     - Typing J in the Opt column for a member places you in edit mode in the JCL for the member: `DSNHLQ.SIEBEL.ADD.JCL(member)`
     - Typing S in the Opt column for a member places you in edit mode in the SQL for the member: `DSNHLQ.SIEBEL.ADD.SQL(member)`

     Note: If you choose to selectively apply additive schema changes, bear in mind that some schema changes might require that other additive database, table space or table changes are applied first. In general, submit additive schema changes in database, table space, table hierarchical order.
3. Verify that the jobs ran successfully as described in *Verifying JCL Upgrade Jobs*.

   You can view the Siebel staging database job log to check whether an additive job completed successfully or not by navigating to the In-Place Upgrade Main Menu and selecting option 5: Staging Database Joblog. See *Viewing the Siebel Job Log Status* for further information.
4. On the Staging Database Additive Schema Menu, select option 6: Applied / Complete on Staging, and press Enter.

   A screen is displayed that lists the status of each of the additive schema changes you applied. Do not proceed until the additive schema changes you chose to apply complete successfully. Any additive changes you do not apply become part of the nonadditive changes that are applied during the in-place database upgrade.

Preparing for Table Creation on the Staging Database

Upgrades: All upgrades.

Environments: All environments

This topic is part of an upgrade process. See *How to Perform a Siebel Database Upgrade*.

The PRET (pre-table) jobs are run against the staging database tables at the beginning of the upgrade; a small number of tables are altered by the PRET step to prepare the database for upgrading. There are two types of PRET jobs: jobs that you

submit manually and jobs that run automatically. The manual PRET jobs perform the following tasks (this list varies according to your upgrade path):

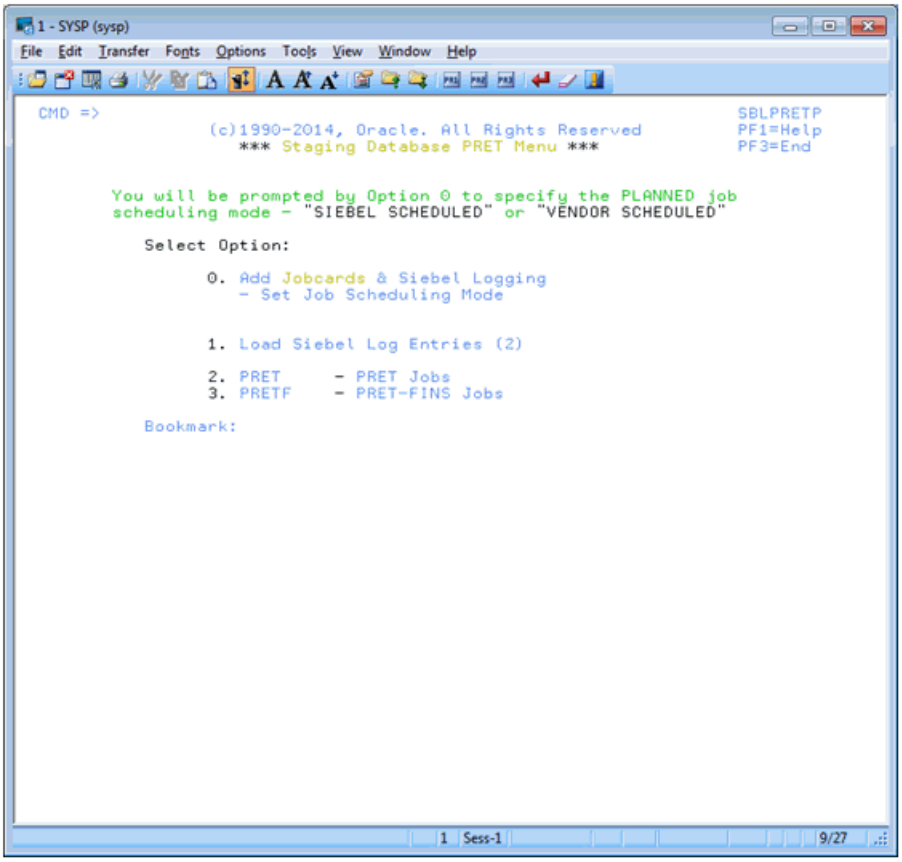
- Determine whether there are CLOBs in the schema
- Query catalog tables for clustering index information

The automatic jobs drop some indexes, rename table(s) and add columns to tables. If you are using Siebel Scheduling, the automatic jobs use the unique job name prefixes you previously specified.

Complete the following procedures to prepare the staging database to generate unload, load, and schema files:

To run the PRET jobs

1. On the Staging Database File Generation Menu select option 4: PRET Processes. The Staging Database PRET Menu is displayed. The panel ID is SBLPRETP.



2. To build job cards for the PRET and pretfins job types, on the Staging Database PRET menu, select option 0: Add Jobcards & Siebel Logging, and press Enter.

> **Note:** It is not necessary to set your preferred job scheduling method if you are using Siebel Scheduled mode which is implemented by default. If you want to use Vendor Scheduling mode, you must set the Scheduling option in the data set `DSNHLQ.SIEBEL.EXEC(@PRETPTH)` to a value of 2. For additional information, see *Executing Jobs Using Siebel-Scheduled Mode or Vendor-Scheduled Mode*.

The pretfins jobcards are only built if you are upgrading a Siebel Industry Application. If you executed Household scripts on the midtier and transferred those files to the z/OS host, household jobcards are also built.

Messages are displayed indicating the job type (PRET, pretfins, or Household), the number of jobs built and the jobcards added.

3. To load Siebel logging tables for the staging database upgrade jobs, on the Staging Database PRET Menu, select option 1: Load Siebel Log Entries (2), and press Enter.
4. Submit the job using the JCL in data set `DSNHLQ.SIEBEL.INSTALL.JCL(LOADLOG3)`.
5. After submitting the job, verify that the job ran successfully with a return code of 0. For information, see *Verifying JCL Upgrade Jobs*. Verify that additional log entries have been loaded to the TMP_SBLLOG_TAR table on the staging database.
6. To run the staging PRET processes, on the Staging Database PRET menu, select option 2: PRET - PRET Jobs, and press Enter.
7. Submit the job using the JCL in data set `DSNHLQ.SIEBEL.INSTALL.JCL(STGPRET)`.

   This triggers the first PRET job, which then automatically submits the next PRET job in sequence. The number of PRET jobs that are automatically submitted varies according to your upgrade path.
8. After submitting the job, verify that the job ran successfully with a return code of 0. For information, see *Verifying JCL Upgrade Jobs*.
9. To run the staging pretfins jobs, on the Staging Database PRET menu, select option 3: PRETF - PRET-FINS Jobs, and press Enter.

   Note: You only have to perform this step if you are performing an Siebel Industry Applications (SIA) upgrade.
10. Submit the job using the JCL in data set `DSNHLQ.SIEBEL.INSTALL.JCL(STGPRETF)`. This triggers the first PRET-FINS job, which then automatically submits the next PRET job in sequence. The number of PRET jobs that are automatically submitted varies according to your upgrade path.
11. After submitting the job, verify that the job ran successfully with a return code of 0. For information, see *Verifying JCL Upgrade Jobs*.
12. You have now completed the additive schema staging file generation process. You must now return to the midtier and restart the Siebel Upgrade Wizard to generate the nonadditive schema files, Temp table DDL files, and the load and unload files.

Preparing and Executing the Nonadditive Schema and JCL Files on the z/OS Host

Upgrades: All upgrades.

Environments: All environments

This topic is part of an upgrade process. See *How to Perform a Siebel Database Upgrade*.

When the Upgrade Wizard stops at Pause # 2, you must transfer the nonadditive schema files, Temp table DDL files, and the load and unload files that were generated on the midtier to data sets on the z/OS host. You then prepare the files, and apply them to the staging database. Perform the following tasks:

- *Transferring the Nonadditive Schema, Temp Table, and Load and Unload Files to the z/OS Host*

- *Preparing the Nonadditive Schema SQL and JCL Templates and Executing the DDL*
- *Applying the Nonadditive Schema Changes*
- *Creating the Data Migration Indexes*

Transferring the Nonadditive Schema, Temp Table, and Load and Unload Files to the z/OS Host

Use the following procedure to transfer the nonadditive schema DDL files, the Temp table DDL files, and the Load and Unload control cards generated by the Upgrade Wizard on the midtier up to Pause #2 to the z/OS host.

Note: Edit the generated files as required by Siebel Technical Notes, Siebel Alerts and *Siebel CRM Update Guide and Release Notes* on My Oracle Support, or other publications before transferring them to the z/OS host.

To transfer the files generated on the midtier

1. Navigate to the **\DB2390\dbsrvr\dboutput\upgrade** directory (Windows) or the /**DB2390/dbsrvr/dboutput/upgrade** directory (UNIX) and double-click the ftp_pause2.bat file (Windows) or issue the following command (UNIX):

   ```
   ftp -vn < ftp_pause2.txt > ftp_pause2.log
   ```

2. Enter your TSO password and press Enter.

   All the Pause #2 files are transferred from the midtier to the z/OS host.
3. Review the ftp_pause2.log file which is created in the upgrade directory and verify that all the files listed in the ftp_pause2.txt file transferred successfully to z/OS staging data sets.

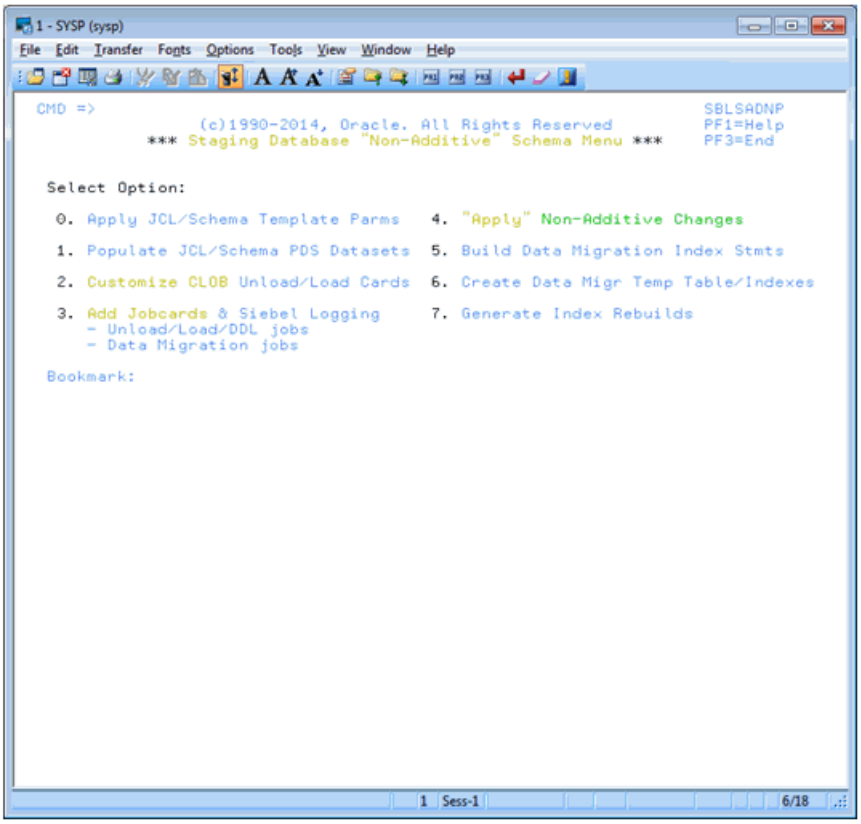
Preparing the Nonadditive Schema SQL and JCL Templates and Executing the DDL

Perform the following procedure to prepare the nonadditive schema files.

To prepare nonadditive schema SQL and JCL templates

1. On the Staging Database File Generation Menu, select option 5: Process Non-Additive Components, and press Enter.

   The Staging Database Non-Additive Schema Menu is displayed. The panel ID is SBLSADNP.



2. On the Staging Database Non-Additive Schema Menu, select option 0: Apply JCL/Schema Template Parms, and press Enter.

   If you are performing a production environment upgrade, you are prompted to confirm that you have applied all planned additive changes to the staging database. Enter Y and press Enter.

   Messages are displayed indicating that changes are being applied to the Unload and Load data sets.
3. On the Staging Database Non-Additive Schema Menu, select option 1: Populate JCL/Schema PDS Datasets, and press Enter.
4. Submit the JCL in data set **`DSNHLQ.SIEBEL.INSTALL.JCL(UNPACK02)`**.

   This job unpacks the JCL and schema files into members in their corresponding PDS data set.
5. After submitting the job, verify that the job ran successfully with a return code of 0. For information, see *Verifying JCL Upgrade Jobs*.
6. On the Staging Database Non-Additive Schema Menu, select option 2: Customize CLOB Unload/Load cards, and press Enter.

   If the target database does not have CLOB columns on any tables, one of two message types appears:

   - A message box that indicates that this step is not required.
   - **`SADN0037: No CLOB`**

   If CLOBs exist on the target system, a series of messages appear. Read them carefully. This option will run in the foreground and then place you in edit mode in the following data set:

```
DSNHLQ.SIEBEL.INSTALL.JCL(CLOBCOPY)
```

7. After submitting the job, verify that the job ran successfully with a return code of 0 or 4. For information, see *Verifying JCL Upgrade Jobs*.
8. On the Staging Database Non-Additive Schema Menu, select option 3: Add Jobcards & Siebel Logging to Unloads/ Loads and Data Migration Jobs, and press Enter.

   A message appears, asking you to confirm that the `DSNHLQ.SIEBEL.PROC(ISPBAT` (ISPF batch proc) is correctly configured.

   You can choose to modify the Unload/Load and data migration jobs in either TSO foreground mode or batch mode. It is recommended that you perform the procedure in batch mode.

   In foreground mode, messages are displayed on the screen as the JCL-Prep progresses. This mode will lock up your session until the option is complete. Each option can take an extended period of time (more than thirty minutes), depending on the user's dispatching priority.

   Note: It is recommended that you perform the procedure in batch mode. Before doing so, make sure you modify the ISPF batch procedure, `dsnhlq.siebel.proc(ispbat)`, to your installation standards. If you perform the procedure in foreground mode, make sure your logon region size is at least 7092.
9. Enter Y to confirm that the ISPF batch proc is correctly configured, and press Enter.
10. Press Enter again and you are placed in edit mode in the following data set:

```
DSNHLQ.SIEBEL.INSTALL.JCL(SBLJCL23)
```

11. After submitting the job, verify that the job ran successfully with a return code of 0 or 4. For information, see *Verifying JCL Upgrade Jobs*.

    Note: If you are using Siebel-Scheduled mode, the data migration JCL includes a jobstep that automatically submits dependent jobs in the data migration flow until all jobs are completed for that data migration job type.

Applying the Nonadditive Schema Changes

Perform the following procedure to apply the nonadditive schema changes to the staging database.

If you are performing a development database upgrade, or if you are performing a production database upgrade but chose not to apply any additive changes in advance, all the Siebel CRM schema upgrade changes for the current release are now applied to the staging database.

To apply nonadditive schema changes

1. On the Staging Database Non-Additive Schema Menu, select option 4: Apply Non-Additive Changes, and press Enter.

2. Run the job using the JCL in data set `DSNHLQ.SIEBEL.INSTALL.JCL(SCHEMAS)`.
3. After submitting the job, verify that the job ran successfully with a return code of 0 or 4. For information, see *Verifying JCL Upgrade Jobs*.
4. After submitting the job, enter cancel on the command line or press PF3 to save changes.

Creating the Data Migration Indexes

Perform the following procedure to create temporary tables and indexes for the data migration scripts and to rebuild indexes.

To create data migration indexes

1. On the Staging Database Non-Additive Schema Menu, select option 5: Build Data Migration Index Statements, and press Enter.

   Messages are displayed on screen indicating that data migration CEATE INDEX and DROP INDEX statements are being generated. The messages you receive depends on your upgrade path.
2. On the Staging Database Non-Additive Schema Menu, select option 6: Create Data Migration Temp Table/Indexes, and press Enter.

   This job creates COMMON temp tables and indexes used by upgrade data migration SQL scripts.
3. Submit the JCL in one of the following data sets:
   - For Siebel Industry Application (SIA) upgrades, use `DSNHLQ.SIEBEL.INSTALL.JCL(DMXSIA7)`.
   - For Siebel Business Applications upgrades, use `DSNHLQ.SIEBEL.INSTALL.JCL(DMXHOR)`.
4. Verify that the job ran successfully with a return code of 0, 4, or 8. For information, see *Verifying JCL Upgrade Jobs*
5. After submitting the job, enter cancel on the command line or press PF3 to save changes.
6. On the Staging Database Non-Additive Schema Menu, select option 7: Generate Index Rebuilds, and press Enter.

   A message appears, asking you to confirm that the `DSNHLQ.SIEBEL.PROC(ISPBAT)` (ISPF batch proc) is correctly configured.

   Make sure that the ISPF batch procedure `dsnhlq.siebel.proc(ispbat)` is modified to your installation standards.
7. Enter Y to confirm that the ISPF batch procedure is correctly configured, then press Enter.
8. When the following message appears, specify the number of indexes to be included in each rebuild job, and press Enter:

   ```
   NUMBER OF INDEXES PER REBUILD JOB.
   ```

   The maximum number of indexes that can be included in a job is 10. It is recommended that you specify 3.

   > **CAUTION:** Consider your objective before choosing a maximum number of indexes for each job. Increasing this number results in fewer jobs but requires more memory and sort work. Reducing this number results in more jobs, which reduces resource requirements but causes fewer indexes to be built in parallel.

9. Press Enter, and you are placed in Edit mode in the `DSNHLQ.SIEBEL.INSTALL(SBLJCL24)` data set.
10. Submit the job and verify that the job ran successfully with a return code of 0 or 4. For information, see *Verifying JCL Upgrade Jobs*.
11. Press PF3 twice to return to the Staging Database File Generation Menu.

Processing the Index Schema File

Upgrades: All upgrades.

Environments: All environments

This topic is part of an upgrade process. See *How to Perform a Siebel Database Upgrade*.

When the Upgrade Wizard stops at Pause # 3, you must transfer the SCINDX.SQL file to the z/OS host and apply it to prepare the Siebel CRM index DDL and to build DROP statements for old schema indexes.

Perform the following procedures:

- *Transferring the SCINDX.SQL File to the z/OS Host*
- *Restructuring the Index DDL*

Transferring the SCINDX.SQL File to the z/OS Host

Use the following procedure to transfer the SCINDX.SQL file generated by the Upgrade Wizard on the midtier up to Pause #3 to the z/OS host.

Note: Edit the generated files as required by Siebel Technical Notes, Siebel Alerts and *Siebel CRM Update Guide and Release Notes* on My Oracle Support, or other publications before transferring them to the z/OS host.

To transfer the file generated on the midtier

1. Navigate to the **\DB2390\dbsrvr\dboutput\upgrade** directory (Windows) or the /**DB2390/dbsrvr/dboutput/upgrade** directory (UNIX) and double-click the ftp_pause3.bat file (Windows) or issue the following command (UNIX):
   ftp -vn < ftp_pause3.txt > ftp_pause3.log
2. Enter your TSO password and press Enter.
   The SCINDX.SQL file is transferred from the midtier to the z/OS host.
3. Review the ftp_pause3.log file which is created in the upgrade directory and verify that the SCINDX file transferred successfully to z/OS staging data sets.

Restructuring the Index DDL

Perform the following procedure to prepare the Index JCL.

To restructure the index DDL

1. On the Staging Database File Generation Menu, select option 6: Process SCINDX Index Components - Restructure Indexes, and press Enter.
   A message appears, asking you to confirm that the **DSNHLQ. SIEBEL.PROC(ISPBAT)** (ISPF batch proc) is correctly configured.

You can choose to generate index rebuilds in either TSO foreground mode or batch mode. It is recommended that you perform the procedure in batch mode.

2. Enter Y to confirm that the ISPF batch proc is correctly configured, and press Enter.
3. When the following message appears, specify the number of indexes to be included in each rebuild job, and press Enter:

   ```
   NUMBER OF INDEXES PER REBUILD JOB.
   ```

   The maximum number of indexes that can be included in a job is 10. It is recommended that you specify 3.

   CAUTION: Consider your objective before choosing a maximum number of indexes for each job. Increasing this number results in fewer jobs but requires more memory and sort work. Reducing this number results in more jobs, which reduces resource requirements but results in fewer indexes being built in parallel.

4. Press Enter, and you are placed in Edit mode in the `DSNHLQ. SIEBEL.INSTALL(SBLJCL31)` data set.
5. Submit the job and verify that the job ran successfully with a return code of 0 or 4. For information, see *Verifying JCL Upgrade Jobs*.
6. Press PF3 twice to return to the Staging Database File Generation Menu.

Building JCL Templates for the Target Database

Perform the following procedure to build the JCL templates for the target database.

To build JCL templates for the target database

1. On the Staging Database File Generation Menu, select option 7: Build Target Database JCL Templates, and press Enter.

   This option applies target database LPAR, Tableowner and STORGROUP values to the JCL templates that were created to run the preupgrade and upgrade (in-place) processes for the staging database so they are appropriate for the target database upgrade.
2. Submit the JCL in one of the following data sets:
   - For Siebel Industry Application (SIA) upgrades, use `DSNHLQ.SIEBEL.INSTALL.JCL(ALLSIAS.`
   - For Siebel Business Applications upgrades, use `DSNHLQ.SIEBEL.INSTALL.JCL(ALLHORS).`
3. Verify that the job ran successfully with a return code of 0 or 4. For information, see *Verifying JCL Upgrade Jobs*.
4. After submitting the job, enter cancel on the command line or press PF3 to save changes.
5. Press PF3 twice to return to the Staging Database File Generation Menu.

   When you successfully complete the target database file generation process, the File Generation option (1) on the Siebel In-Place Upgrade Main Menu is no longer available. You are now ready to start the target database pre-upgrade and upgrade processes.

14 Upgrading the Target Database

Upgrading the Target Database

This chapter describes how to upgrade your database to the current release of Siebel CRM using the upgrade files you generated against the staging database. It includes the following topics:

- *Process of Upgrading the Target Database*
- *Dropping Partitioned EIM Tables*
- *Creating and Loading Siebel Log Tables*
- *Applying Additive Upgrade Changes to the Target Database*
- *Renaming the Production Environment Repository*
- *Performing the In-Place Target Database Upgrade*
- *Restarting Upgrade Jobs That Fail*

Process of Upgrading the Target Database

Upgrades: All upgrades.

Environments: All environments

This topic is part of an upgrade process. See *How to Perform a Siebel Database Upgrade*.

After you have generated upgrade files against the staging database and prepared the JCL used to run the upgrade processes, you are ready to perform the target database upgrade. This involves the following steps:

1. *Dropping Partitioned EIM Tables*
2. *Creating and Loading Siebel Log Tables*
3. (Production upgrades only) *Applying Additive Upgrade Changes to the Target Database*
4. (Production upgrades only) *Renaming the Production Environment Repository*
5. *Performing the In-Place Target Database Upgrade*

For production database upgrades, the additive changes applied to the staging database are applied to the production target database as part of the preupgrade process. The remaining nonadditive, schema, unload, load and data migration processes are then applied to the target database as part of the critical path in-place upgrade.

For development database upgrades, upgrade changes are applied in one step to the target database during the in-place upgrade.

> **Note:** The procedures in this chapter use Siebel-Scheduled job execution. For information on job scheduling options, see *Executing Jobs Using Siebel-Scheduled Mode or Vendor-Scheduled Mode*.

Dropping Partitioned EIM Tables

During the target database upgrade, EIM tables are dropped after additive changes are applied to the database and are later re-created when the nonadditive schema changes are applied to the database.

When a *partitioned* EIM table is dropped, however, the table space is also dropped. Because table space creation is considered an additive change, the upgrade attempts to create EIM table spaces for partitioned EIM tables when other additive changes are applied to the target database, that is, before the partitioned EIM tables and related table spaces have been dropped.

To avoid processing errors during the target database upgrade, therefore, you must manually change the sequence in which partitioned EIM tables are dropped. Drop partitioned EIM tables before you apply additive schema changes to the target database.

The following procedure describes how to change the sequence in which partitioned EIM tables are dropped.

To drop partitioned EIM tables

1. Run the sample code listed in *Sample Code for Generating a List of Table Spaces to Drop* to generate a list of the table spaces that contain partitioned EIM tables.

   A DROP command is also generated for each of the table spaces.
2. Run the generated DROP commands against the target database before you apply additive schema updates.

   The table spaces are re-created when you apply additive upgrade changes to the database.
3. Edit the data set **SIEBEL.INSTALL.JCL(INFDRPT)** and delete the steps that drop the table spaces containing partitioned EIM tables, that is, delete the steps that drop the table spaces you previously dropped in Step 2.

   The data set **SIEBEL.INSTALL.JCL(INFDRPT)** is run as part of the process of *Preparing the Target Database for the Upgrade*.

Sample Code for Generating a List of Table Spaces to Drop

The following sample SQL code can be used to generate a list of the table spaces that must be dropped before applying additive schema changes.

The table spaces can be determined with the following SQL:

```
--
-- CREATE DROP STATEMENTS FOR EIM PARTITIONED TABLES
--
SET CURRENT SQLID='xxxxxxxx' ; <-- set to current TARGET tableowner
SELECT
SUBSTR(
CONCAT(
CONCAT(' DROP TABLESPACE ' ,
CONCAT(STRIP(S.DBNAME) ,
CONCAT('.',
STRIP(S.NAME)
)
)
)
, ' /'
)
```

```
, 1, 36) AS STATEMENT
FROM SYSIBM.SYSTABLES T
, SYSIBM.SYSTABLESPACE S
WHERE T.CREATOR = CURRENT SQLID
AND T.NAME LIKE 'EIM_%'
AND T.DBNAME=S.DBNAME
AND T.TSNAME=S.NAME
AND T.TYPE='T'
AND S.PARTITIONS>0
ORDER BY 1;
```

The following is an example of a list of tables generated by running the query in the sample code:

```
DROP TABLESPACE D0020004.H0004000 /
DROP TABLESPACE D0020010.H0010000 /
DROP TABLESPACE D0020031.H0031000 /
DROP TABLESPACE D0020065.H0065000 /
DROP TABLESPACE D0020102.H0102000 /
DROP TABLESPACE D0020194.H0194000 /
DROP TABLESPACE D0020255.H0255000 /
DROP TABLESPACE D0020309.H0309000 /
```

Creating and Loading Siebel Log Tables

Upgrades: All upgrades.

Environments: All environments

This topic is part of an upgrade process. See *How to Perform a Siebel Database Upgrade*.

Perform the following procedure to create Siebel log tables and load them on the target database before you begin the target database upgrade.

To load the target log table

1. Use the following command to display the Siebel In-Place Upgrade Main Menu:

   ```
   EXEC 'DSNHLQ.SIEBEL.EXEC'
   ```

2. Select option 2: Target Database Processes - Pre-Upgrade, and press Enter.
3. Select option 0: Create & Load Target Siebel Log, and press Enter.
4. Run the job using the JCL in data set **DSNHLQ.SIEBEL.INSTALL.JCL(LOADTAR)**.

   This loads the target Siebel log table using the **DSNHLQ.SIEBEL.JOBLOG.LOADFILE**.
5. Verify that the job ran successfully with a return code of 0 or 4. For information, see *Verifying JCL Upgrade Jobs*.
6. After submitting the job, enter cancel on the command line or press PF3 to save changes.

Applying Additive Upgrade Changes to the Target Database

Upgrades: All upgrades.

Environments: Production test, production.

For development database upgrades, all schema changes are processed as nonadditive so this step does not apply.

This topic is part of an upgrade process. See *How to Perform a Siebel Database Upgrade*.

Before you can perform the in-place target database upgrade, you must first apply all of the additive schema changes that you previously applied to the production staging database. See *Applying the Additive Schema Changes to the Production Staging Database* for further information.

When applying additive changes, you can either:

- Apply one, or a few of the additive changes to the target database during one or more sessions.
- Apply all of the additive changes as one job, provided that you applied all of the additive changes to the staging database.

Both methods of applying additive changes are described in this topic.

Note: You must rebuild tables in the target database that contain LONG VARCHAR columns before you apply additive schema changes to the target database. For information, see *Rebuilding Target Tables Containing LONG VARCHAR Columns*.

Applying Additive Changes Individually

You can apply individual additive changes to the target database using the following procedure.

To apply selected additive changes to the target production database

1. If you are not on the Siebel Upgrade Main Menu, enter the following command:

   ```
   EXEC 'DSNHLQ.SIEBEL.EXEC'
   ```

2. Select option 2: Target Database Processes - Pre-Upgrade, and press Enter.
3. Select option 1: Schedule/Run PENDING Jobs (Target), and press Enter.

   The Target Additive PENDING Job Status Menu is displayed. The panel ID is SBLSADTP.

   This panel lists all the pending additive jobs, that is, all the jobs that were applied as additive jobs to the staging database and which have not been applied to the target database.
4. Do one of the following:
   - To apply all the additive changes together, enter Y, then follow the procedure in *Applying the Additive Changes in One Job*.

- To apply or view individual additive schema changes, enter either J, S, or SUB in the Opt column of the appropriate member, and press Enter:
  - Typing SUB in the Opt column for a member automatically submits the JCL to apply the additive change in the member: `DSNHLQ.SIEBEL.ADDTAR.JCL(member)`
  - Typing J in the Opt column for a member places you in edit mode in the JCL for the member: `DSNHLQ.SIEBEL.ADDTAR.JCL(member)`
  - Typing S in the Opt column for a member places you in edit mode in the SQL for the member: `DSNHLQ.SIEBEL.ADDTAR.SQL(member)`

  Note: You can selectively submit additive schema changes according to the amount of time you have available. You must bear in mind, however, that some schema changes might require that other additive database, table space or table changes are applied first. Review the additive changes before submitting them and, in general, submit additive schema changes in database, table space, table hierarchical order.

5. After submitting the JCL to apply the additive changes in a member, verify that the job ran successfully with a return code of 0, 4, or 8. For information, see *Verifying JCL Upgrade Jobs*.

   You can view the Siebel target database job log to check whether an additive job completed successfully or not by navigating to the In-Place Upgrade Main Menu and selecting option 6: Target Database Joblog. See *Viewing the Siebel Job Log Status* for further information.

   Do not proceed until all the pending additive schema jobs are run successfully.

Applying the Additive Changes in One Job

You can apply all the additive schema upgrade changes to the target database using the JCL in the data set `DSNHLQ.SIEBEL.INSTALL.JCL(ADDVSCHT)` provided you also applied all of the additive changes to the staging database using the JCL in the `DSNHLQ.SIEBEL.INSTALL.JCL(ADDVSCHS)` data set.

CAUTION: If you applied only a subset of the additive schema upgrade changes to the staging database, you must not apply the additive schema upgrade changes to the target database using the JCL in the data set `DSNHLQ.SIEBEL.INSTALL.JCL(ADDVSCHS)`. If you do, you will corrupt the target database.

To apply all additive changes to the target production database

1. Navigate to the ISPF Primary Option Menu, and select option 2: Edit.
2. Specify `DSNHLQ.SIEBEL.INSTALL.JCL(ADDVSCHT)` as the name of the data set member you want to edit on the Edit Entry Panel.
3. Submit the job in the `ADDVSCHT` member.

   All of the additive schema changes are automatically submitted and applied to the target database.

Note: You must choose to either apply all of the additive changes in one job, or apply them all individually. If you apply any of the additive changes to the target database individually, as described in *Applying Additive Changes Individually*, you cannot use the `DSNHLQ.SIEBEL.INSTALL.JCL(ADDVSCHT)` member to apply additive changes; attempting to do will cause an error in your upgrade.

4. To ensure performance is not adversely affected when additive changes are applied in one job using the **ADDVSCHT** member, all of the indexes are created using the DEFINE YES, DEFER YES syntax. After applying the additive changes, you can rebuild the indexes for each index created by the **ADDVSCHT** member by submitting the JCL in the **DSNHLQ.SIEBEL.INSTALL.JCL(SUBADDIX)** data set.

   You can submit the index rebuild jobs all together, or individually. To submit the rebuild index jobs in one step:

   a. Navigate to the ISPF Primary Option Menu, and select option 3.4.
   b. On the Data Set List Utility (DSLIST) panel, type **EXEC** on the line next to the @SUBADDIX member. Press Enter.

      All of the rebuild index jobs are submitted.

   To submit each index rebuild job individually:

   a. Edit the **DSNHLQ.SIEBEL.INSTALL.JCL(SUBADDIX)** member by typing **e** before the member name. Press Enter.
   b. Select the job you want to run, type **submit** on the command line, and press Enter.

      The rebuild index job is submitted.

Renaming the Production Environment Repository

Upgrades: All upgrades.

Environments: Production test, production.

This topic is part of an upgrade process. See *How to Perform a Siebel Database Upgrade*.

Two separate repositories are used during the production upgrade process:

- Your existing production repository
- New Customer Repository

The New Customer Repository is loaded when you run the Siebel Upgrade Wizard.

To prevent a naming conflict, before you take your production database offline to run the in-place target database upgrade, rename your existing production repository (*Siebel Repository*) to *Prior Customer Repository*. After the upgrade, your new Siebel CRM production repository is given the name *Siebel Repository*.

Rename your existing production repository using the procedure described in the chapter in *Siebel Database Upgrade Guide* that describes how to upgrade the Siebel database.

CAUTION: Your upgrade will encounter errors if you have more than one existing repository for a production upgrade. Export, archive, and delete from the Siebel schema to be upgraded any redundant repositories before you upgrade your production environment.

For further information about renaming repositories, see *Configuring Siebel Business Applications* .

Performing the In-Place Target Database Upgrade

Upgrades: All upgrades.

Environments: All environments

This topic is part of an upgrade process. See *How to Perform a Siebel Database Upgrade*.

Before performing the in-place target database upgrade, make sure you have completed the appropriate preupgrade tasks. See *Process of Upgrading the Target Database* for further information.

To execute the in-place target database upgrade, perform the following tasks in the sequence shown:

- *Preparing the Target Database for the Upgrade*
- *Running the PRET Jobs for the Target Database*
- *Applying Nonadditive Schema Upgrade Changes to the Target Database*
- *Creating and Deploying Stored Procedures on the Target Database*
- *Migrating Data on the Target Database*
- *Creating Schema Indexes*
- *Running the Gen_Primary SQL to Update Data in Target Database Tables*
- *Generating RUNSTATS Jobs*

Accessing the Target Database In-Place Upgrade Menu

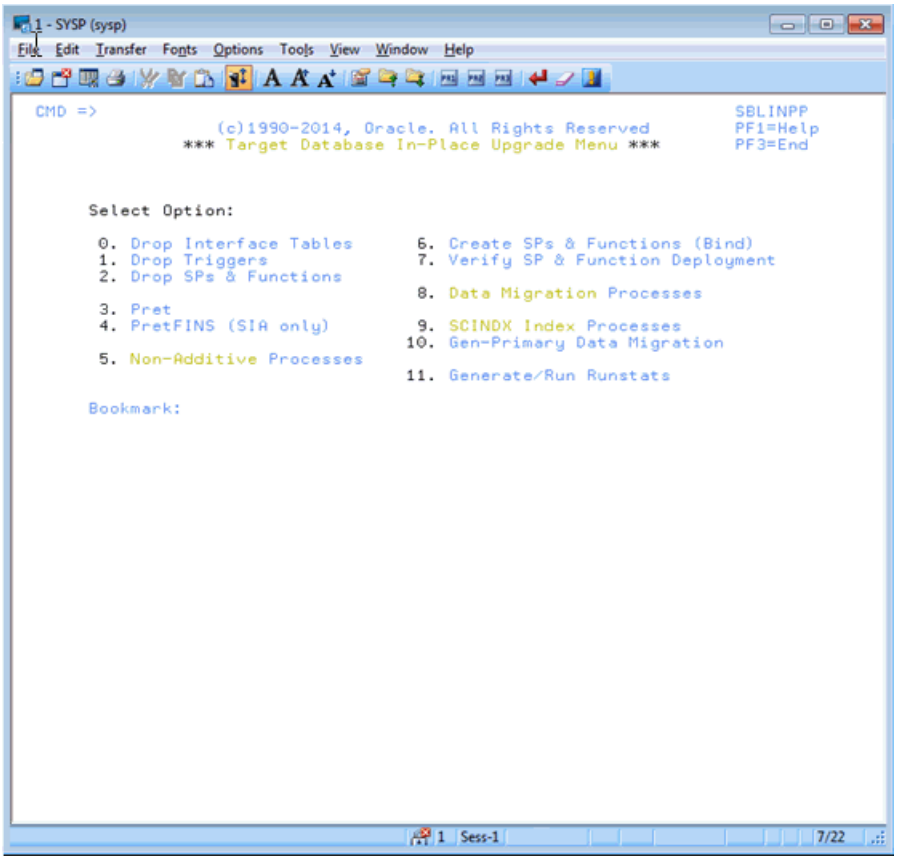
The Target Database In-Place Upgrade Menu provides options that allow you to perform all of these tasks. Perform the following procedure to access this menu:

1. Access the Siebel In-Place Upgrade Main Menu by entering the following command:

   ```
   EXEC 'DSNHLQ.SIEBEL.EXEC'
   ```

2. Select option 3: Target Database Processes - Upgrade, and press Enter.

   The Target Database In-Place Upgrade Menu is displayed. The panel ID is SBLINPP.



Preparing the Target Database for the Upgrade

Perform the following procedure to drop interface tables, triggers, and stored procedures from the target database to prepare for the upgrade.

To remove interface tables, triggers and stored procedures from the database

1. On the Target Database In-Place Upgrade Menu, select option 0: Drop Interface Tables, and press Enter.

   This option runs the job to remove interface tables from the target database.
2. Run the job using the JCL in data set `DSNHLQ.SIEBEL.INSTALL.JCL(INFDRPJT)`.

   Note: If your Siebel database contains partitioned EIM tables, before running the job, you must edit the data set SIEBEL.INSTALL.JCL(INFDRPT) to delete the steps that drop table spaces containing partitioned EIM tables. For information, see *Dropping Partitioned EIM Tables*.
3. Verify that the job ran successfully with a return code of 0. For information, see *Verifying JCL Upgrade Jobs*.
4. After submitting the job, enter cancel on the command line or press PF3 to save changes.
5. On the Target Database In-Place Upgrade Menu, select option 1: Drop Triggers, and press Enter.
6. Run the job using the JCL in data set `DSNHLQ.SIEBEL.INSTALL.JCL(TRGDRPJT)` to remove triggers from the target database.
7. Verify that the job ran successfully with a return code of 0. For information, see *Verifying JCL Upgrade Jobs*.

8. After submitting the job, enter cancel on the command line or press PF3 to save changes.
9. On the Target Database In-Place Upgrade Menu, select option 2: Drop SPs and Functions, and press Enter.
10. Run the job using the JCL in data set `DSNHLQ.SIEBEL.INSTALL.JCL(SPFDRPT)`.
11. Verify that the job ran successfully with a return code of 0, 4, or 8. For information, see *Verifying JCL Upgrade Jobs*.
12. After submitting the job, enter cancel on the command line or press PF3 to save changes.

Running the PRET Jobs for the Target Database

Perform the following procedure to run the PRET jobs to prepare the target database for table creation during the in-place upgrade.

To run the PRET jobs

1. On the Target Database In-Place Upgrade Menu, select option 3: Pret, and press Enter.
2. Run the job using the JCL in data set `DSNHLQ.SIEBEL.INSTALL.JCL(SUBPRET)`.

   This triggers the first PRET job, which then automatically submits the next PRET job in sequence. The number of PRET jobs that are automatically submitted varies according to your upgrade path.
3. Verify that the job ran successfully with a return code of 0. For information, see *Verifying JCL Upgrade Jobs*.
4. After submitting the job, enter `cancel` on the command line or press PF3 to save changes.

   All jobs must complete successfully before you proceed to the next step.
5. On the Target Database In-Place Upgrade Menu, select option 4: PretFINS, and press Enter.
6. Run the job using the JCL in data set `DSNHLQ.SIEBEL.INSTALL.JCL(SUBPRETF)`.

   This triggers the first PRET job, which then automatically submits the next PRET job in sequence. The number of PRET jobs that are automatically submitted varies according to your upgrade path.

   Note: You only have to perform this step if you are performing an Siebel Industry Applications upgrade.
7. Verify that the job ran successfully with a return code of 0. For information, see *Verifying JCL Upgrade Jobs*.
8. After submitting the job, enter cancel on the command line or press PF3 to save changes.

   All PretFINS jobs must complete successfully before you proceed to the next step.

Applying Nonadditive Schema Upgrade Changes to the Target Database

Perform the following procedures to apply the nonadditive schema upgrade changes to the target database. Perform the procedures in the sequence in which they are listed.

- *Removing Target Database Views*
- *Running Unload Jobs on the Target Database*
- *Creating the Schema on the Target Database*
- *Loading the Schema on the Target Database*
- *Executing Index DDL and Rebuilding Indexes*

- *Creating and Rebuilding Obsolete Indexes*

Removing Target Database Views

Perform the following procedure to remove views from the target database.

To remove views from the target database

1. On the Target Database In-Place Upgrade Menu, select option 5: Non-Additive Processes, and press Enter.

   The following message appears:

   ```
   Before proceeding, make sure ALL "Pret-FINS jobs completed. Re-enter option 5 to continue.
   ```

2. Reselect option 5: Non-Additive Processes, and press Enter.

   The Target Database Non-Additive Processes menu appears. The panel ID is SBLNONP.
3. Select option 0: Drop Views, and press Enter.
4. Run the job using the JCL in data set `DSNHLQ.SIEBEL.INSTALL.JCL(SUBDRPV)`.
5. Verify that the job ran successfully with a return code of 0 or 4. For information, see *Verifying JCL Upgrade Jobs*.
6. After submitting the job, enter cancel on the command line or press PF3 to save changes.

Running Unload Jobs on the Target Database

Perform the following procedure to run unload jobs on the target database.

To run unload jobs on the target database

1. On the Target Database Non-Additive Processes menu, select option 1: Unload Schema, and press Enter.
2. Run the job using the JCL in data set `DSNHLQ.SIEBEL.INSTALL.JCL(SUBUNLD)`.

   This job submits all the Unload jobs to run in parallel. The number of Unload jobs run varies according to your upgrade path.
3. Verify that each Unload job ran successfully.
   - Verify that each job ran successfully with a return code of 0. For information, see *Verifying JCL Upgrade Jobs*.
   - Review unload jobs that generate a return code of 4. A return code of 4 might be returned if a table is empty but it can also indicate that an unload job has failed as a result of DSNTIAUL utility CCSID conversion errors. For additional information, see *About DSNTIAUL CCSID Conversion Errors*.

     If the DSNTIAUL utility encounters an unload job that generates a CCSID conversion error, it generates a return code of 4 and stops the unload process at that point. Exit from the upgrade process and use a program, such as the IBM DB2 UNLOAD utility, to complete the load and unload processing.

     You must fix any failed jobs before proceeding with the upgrade. For information on restarting failed jobs, see *Restarting Upgrade Jobs That Fail*.
4. After submitting the job, enter cancel on the command line or press PF3 to save changes.
5. View the job status log.

   You can view the job status log by completing the procedure described in *Running SQL in Siebel Logs*.

Creating the Schema on the Target Database

Perform the following procedure to create the Siebel CRM schema for the current release on the target database.

To create the Siebel CRM schema on the target database

1. On the Target Database Non-Additive Processes menu, select option 2: Create Schema, and press Enter.
   The following message appears:
   ```
   Before proceeding, make sure ALL "UNLOAD jobs completed. Re-enter option 2 to
   continue.
   ```
2. Reselect option 2: Create Schema, and press Enter.
3. Run the job using the JCL in data set `DSNHLQ.SIEBEL.INSTALL.JCL(SCHEMAT)`.
4. Verify that each job ran successfully with a return code of 0 or 4. For information, see *Verifying JCL Upgrade Jobs*
5. After submitting the job, enter cancel on the command line or press PF3 to save changes.

Loading the Schema on the Target Database

Perform the following procedure to run Load jobs on the target database.

To run the Load jobs on the target database

1. On the Target Database Non-Additive Processes menu, select option 3: Load/Re-Load Schema, and press Enter.
2. Run the job using the JCL in data set `DSNHLQ.SIEBEL.INSTALL.JCL(SUBLOAD)`.
   This submits all the Load jobs to run in parallel. The number of upgrade Load jobs varies by upgrade path.

   Note: If your database layout allows multiple tables for each table space, Loads for the same table space are stacked in the input job queue using the same job name to guarantee serialized loading.
3. Verify that the job ran successfully with a return code of 0 or 4. For information, see *Verifying JCL Upgrade Jobs*.
4. After submitting the job, enter cancel on the command line or press PF3 to save changes.

Executing Index DDL and Rebuilding Indexes

Perform the following procedure to execute the index DDL for Siebel CRM, and to rebuild indexes on the target database.

To execute the index DDL and to rebuild indexes

1. On the Target Database Non-Additive Processes menu, select option 4: Create Restructured Indexes (DDL), and press Enter.
   The following message appears:
   ```
   Before proceeding, make sure ALL "LOAD jobs completed. Re-enter option 4 to
   continue.
   ```
2. Reselect option 4: Create Restructured Indexes (DDL), and press Enter.
3. Run the job using the JCL in data set `DSNHLQ.SIEBEL.INSTALL.JCL(SCHEMAT2)`.
   This job runs DDL Create Index statements to build nonunique indexes for the old schema.
4. Verify that the job ran successfully with a return code of 0 or 4. For information, see *Verifying JCL Upgrade Jobs*.
5. After submitting the job, enter cancel on the command line or press PF3 to save changes.
6. On the Target Database Non-Additive Processes menu, select option 5: Rebuild Indexes, and press Enter.
7. Run the job using the JCL in data set `DSNHLQ.SIEBEL.INSTALL.JCL(SUBNONIX)`.
   This job automatically submits all nonunique 8.1 and 8.2 index rebuild jobs.
8. Verify that the job ran successfully with a return code of 0 or 4. For information, see *Verifying JCL Upgrade Jobs*.

You must fix any failed jobs before proceeding with the upgrade. For information on restarting failed jobs, see *Restarting Upgrade Jobs That Fail*.

Creating and Rebuilding Obsolete Indexes

If you choose, you can create and rebuild the old schema obsolete indexes. This step is optional.

The procedure to create and rebuild obsolete indexes differs, depending on whether you perform this task during the target database upgrade process, or after you have completed the target database upgrade (recommended). Both procedures are described in this topic.

Perform the following procedure to create and rebuild obsolete indexes on the target database during the target database upgrade process.

To create and rebuild obsolete indexes during the database upgrade

1. On the Target Database Non-Additive Processes menu, select option 6: Create Obsolete Indexes, and press Enter.
2. Run the job using the JCL in data set `DSNHLQ.SIEBEL.INSTALL.JCL(SCHEMATO)`.
   This job automatically builds the old-schema obsolete indexes.
3. Verify that the job ran successfully with a return code of 0 or 4. For information, see *Verifying JCL Upgrade Jobs*.
4. After submitting the job, enter cancel on the command line or press PF3 to save changes.
5. On the Target Database Non-Additive Processes menu, select option 7:Rebuild Obsolete Indexes, and press Enter.
6. Run the job using the JCL in data set `DSNHLQ.SIEBEL.INSTALL.JCL(SUBOBSIX)`.
   This job automatically rebuilds the old-schema obsolete indexes.
7. Verify that the job ran successfully with a return code of 0 or 4. For information, see *Verifying JCL Upgrade Jobs*.
8. After submitting the job, enter cancel on the command line or press PF3 to save changes.

Perform the following procedure to create and rebuild obsolete indexes on the target database after the target database upgrade is completed.

To create and rebuild obsolete indexes after the database upgrade is completed

1. To create the obsolete indexes, run the SQL in the `DSNHLQ.SIEBEL.DDLOIND` data set.
2. Verify that the jobs ran successfully with a return code of 0. For information, see *Verifying JCL Upgrade Jobs*.
3. Review the list of obsolete indexes created; rebuild only those indexes that you require.
4. Rebuild the obsolete indexes by submitting the appropriate JCL in the `DSNHLQ.SIEBEL.OBSIX.JCL` data set.
   The control cards for the rebuild index jobs are located in the `DSNHLQ.SIEBEL.OBSIX.SQL` data set.
5. Verify that the jobs ran successfully with a return code of 0. For information, see *Verifying JCL Upgrade Jobs*.

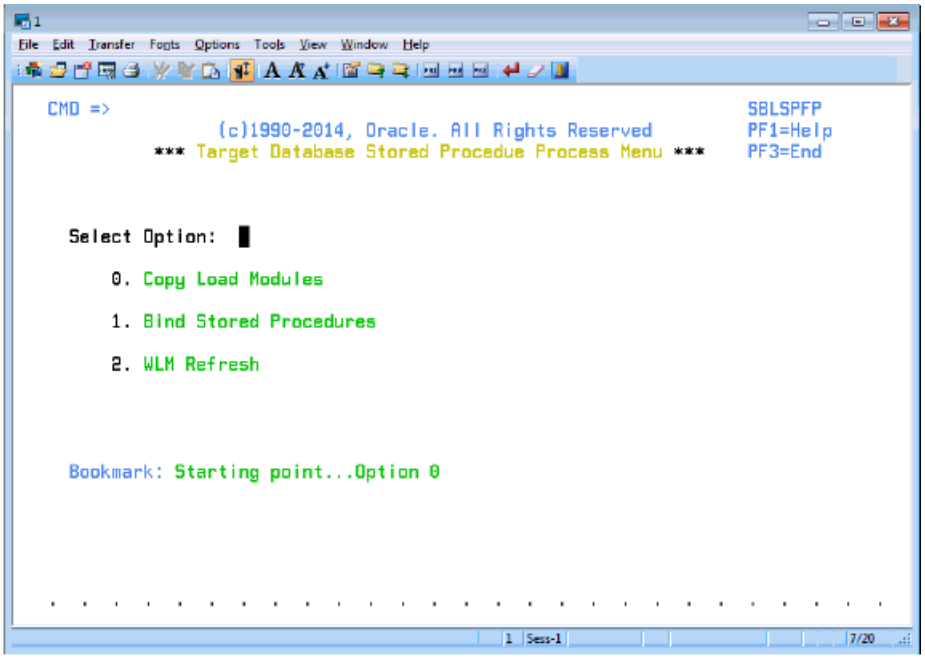
Creating and Deploying Stored Procedures on the Target Database

Perform the following task to install stored procedures and functions on the target database and to verify that they deployed correctly.

To install and verify stored procedures

1. On the Target Database In-Place Upgrade Menu, select option 6: Create SPs & Functions (Bind), and press Enter.
   A message appears telling you to use the instructions in the @README member to install the stored procedures and functions.

2. Enter Y to continue, and press Enter.
   The Target Database Stored Procedure Process Menu is displayed.



3. On the Target Database Stored Procedure Process Menu, select option 0. Copy Load Modules, and press Enter.
4. Run the job using the JCL in the data set **DSNHLQ.SIEBEL.SP.CNTL(IEBCOPY)**.
   This job moves the stored procedure load modules into the WLMSPAS (this is the WLM load library you specified in *Preparing the Upgrade Environment and Building the Staging Database*).
5. Verify that the job ran successfully with a return code of 0. For information, see *Verifying JCL Upgrade Jobs*
6. After submitting the job, enter cancel on the command line or press PF3 to save changes.
7. On the Target Database Stored Procedure Process Menu, select option 1. Bind Stored Procedures, and press Enter.
8. Run the job using the JCL in one of the following data sets:
   - **SNHLQ.SIEBEL.SP.CNTL(BINDHOR)** for Siebel Business Applications upgrades
   - **DSNHLQ.SIEBEL.SP.CNTL(BINDSIA)** for Siebel Industry Applications upgrades

   This job binds the stored procedure packages.

   > **Note:** If the job fails because the procedure already exists, run the appropriate DROP procedure job, either **DSNHLQ.SIEBEL.SP.CNTL(DRPSIA)** or **DSNHLQ.SIEBEL.SP.CNTL(DRPHOR)**, then run the bind job again.

9. Verify that the job ran successfully with a return code of 0 or 4. For information, see *Verifying JCL Upgrade Jobs*.
10. After submitting the job, enter cancel on the command line or press PF3 to save changes.
11. On the Target Database Stored Procedure Process Menu, select option 2. WLM Refresh, and press Enter.
12. Submit the JCL in the data set **DSNHLQ.SIEBEL.SP.CNTL(WLMREFSH)**.
    This job refreshes the DB2 WLM environment.
13. Verify that the job ran successfully with a return code of 0. For information, see *Verifying JCL Upgrade Jobs*.
14. Press PF3 twice to return to the Target Database In-Place Upgrade Menu.

15. Select option 7: Verify SP and Function Deployment, and press Enter.

    This places you in edit mode for one of the following PDS data sets and members:

    - For Siebel Business Applications upgrades: `DSNHLQ.SIEBEL.INSTALL.JCL(SPVHOR)`.
    - For Siebel Industry Applications upgrades: `DSNHLQ.SIEBEL.INSTALL.JCL(SPVSIA)`.

16. Run the JCL in the appropriate data set for your upgrade. The JCL in the SPVSIA and SPVHOR members executes each stored procedure against the target database after the new schema has been created and data has been loaded onto the target. This process verifies that the stored procedures have been installed and can be executed.
17. Verify that the job ran successfully with a return code of 0. For information, see *Verifying JCL Upgrade Jobs*.

    The JCLTEST return code must be FLUSH. If you do not see the FLUSH return code, you can verify the condition codes by searching for the condition code IEF206I.
18. After submitting the job, enter cancel on the command line or press PF3 to save changes.

Migrating Data on the Target Database

Perform the tasks described in this topic to migrate preexisting Siebel data to version 8.1 or 8.2 data. Generally, this involves inserting or updating values in the target tables, but new indexes might also be created and rebuilt.

There are optional data migration scripts for Household data and for Siebel Financial Services (FINS) applications. The scripts you must apply depends on the applications you have implemented and your upgrade path. Review the information in the following table to determine the scripts that apply for your upgrade.

Data Migration Script	Applicable Upgrade Path
Household	All Siebel Industry application (SIA) upgrades
Household - FINS	All Siebel Industry application (SIA) upgrades
Preschm	All upgrade paths
Preschm - FINS	All Siebel Industry application (SIA) upgrades
UpgISS	All upgrade paths

Use the following procedure to run each of the data migration scripts.

To run the data migration scripts

1. On the Target Database In-Place Upgrade Menu, select option 8: Data Migration Processes, and press Enter.

   The Target Database Data Migration Processes Menu appears. The panel ID is SBLDMP.
2. Select the appropriate option for the data migration script you want to run, for example, select option 2: Preschm, and press Enter, to run the preschm scripts.
3. You are placed in edit mode on one of the following data sets, depending on the option you select:

   - Household: `DSNHLQ.SIEBEL.INSTALL.JCL(HHMIG)`

- Household - FINS: **DSNHLQ.SIEBEL.INSTALL.JCL(HHMIGFIN)**
- Preschm: **DSNHLQ.SIEBEL.INSTALL.JCL(SUBPSH)**
- Preschm - FINS: **DSNHLQ.SIEBEL.INSTALL.JCL(SUBPSF)**
- UpgISS: **DSNHLQ.SIEBEL.INSTALL.JCL(SUBUPGIS)**

4. Run the data migration job using the JCL in the data set in which you have been placed. For example, if you selected option 3:Preschm, submit the JCL in the **DSNHLQ.SIEBEL.INSTALL.JCL(SUBPSH)** data set.

   This job automatically submits the *first* job in the job stream.

   If the first Household and Preschm data migration job completes successfully, it automatically submits all subsequent jobs in the that data migration process flow. The number of jobs that are run varies according to your upgrade path.

   If one of the automatically submitted job fails, the succeeding dependent job is not submitted and the automatic job submission sequence terminates. Correct the problem that caused the job failure and resubmit the individual failed job. When the job completes successfully, it then submits the next job in sequence.
5. Verify that the job ran successfully with a return code of 0 or 4. For information, see *Verifying JCL Upgrade Jobs*.

   Fix any failed jobs before proceeding with the upgrade. For information on restarting failed jobs, see *Restarting Upgrade Jobs That Fail*.
6. Press PF3 to return to the Target Database Data Migration Processes Menu and run the next data migration job in sequence.

About Migrating Preschm Data

Some of the PRESCHM jobs run independently but others are submitted in a defined order and cannot run until previous jobs have completed successfully; you can run the standalone jobs in parallel with those with dependencies. To see the serial flow of the PRESCHM jobs and the PRESCHM job dependencies, look at the PDS member **DSNHLQ.SIEBEL.PRESCHM.JCL(@DEPFLOW)**.

Creating Schema Indexes

Perform the following procedure to drop old schema indexes, create schema and EIM indexes for the current release, and submit the rebuild jobs for the 8.1 or 8.2 Gen Primary indexes for the target database.

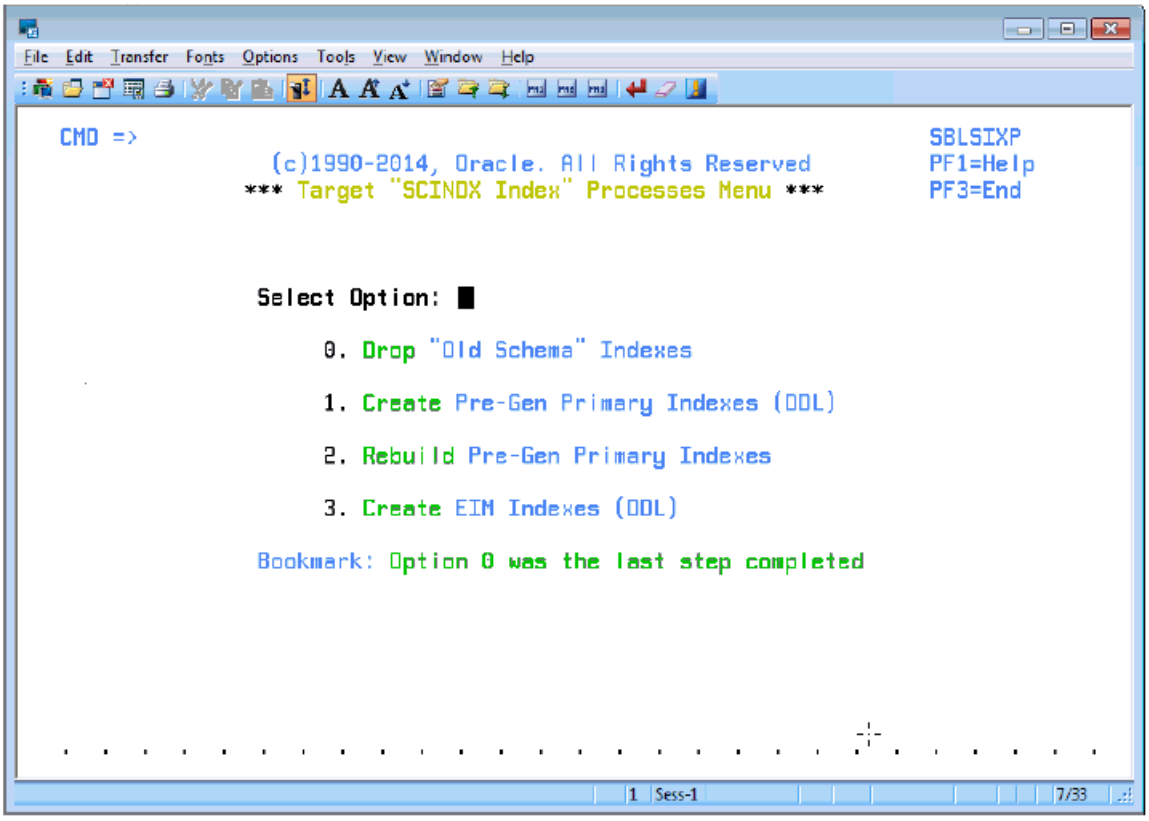
To run index jobs for the target database

1. On the Target Database In-Place Upgrade Menu, select option 9: SCINDX Index Processes, and press Enter.

   The following message appears:

   ```
   Before proceeding, make sure ALL Data Migr "UPGISS jobs complete. Re-enter option 9 to continue...
   ```
2. Reselect option 9: SCINDX Index Processes, and press Enter.

   The Target SCINDX Index Processes Menu is displayed. The panel ID is SBLSIXP.



3. Select option 0: Drop Old Schema Indexes, and press Enter.

   You are placed in edit mode on data set **DSNHLQ.SIEBEL.INSTALL.JCL(GPDRPIX)**.
4. Submit the JCL in the data set to drop the old schema indexes.
5. Verify that the job ran successfully with a return code of 0 or 4. For information, see *Verifying JCL Upgrade Jobs*.
6. After submitting the job, enter cancel on the command line or press PF3 to save changes.
7. On the Target SCINDX Index Processes Menu, select option 1: Create Pre-Gen Primary Indexes (DDL), and press Enter.

   You are placed in edit mode on data set **DSNHLQ.SIEBEL.INSTALL.JCL(GPRIX)**.
8. Submit the JCL in the data set to run the DDL to create the Pre-Gen Primary Indexes.
9. Verify that the job ran successfully with a return code of 0 or 4. For information, see *Verifying JCL Upgrade Jobs*.
10. After submitting the job, enter cancel on the command line or press PF3 to save changes.
11. On the Target SCINDX Index Processes Menu, select option 2: Rebuild Pre-Gen Primary Indexes (DDL), and press Enter. This job rebuilds the Pre-Gen primary indexes to create ROW_IDs for the data in the existing row.

    You are placed in edit mode on data set **DSNHLQ.SIEBEL.INSTALL.JCL(SUBGPPIX)**.
12. Submit the JCL in the data set.

    This job runs all the Pre-Gen Primary Index rebuild jobs in parallel. The number of index rebuild jobs that are run varies according to your upgrade path and the number of indexes you specified to be included in each rebuild job. See *Restructuring the Index DDL* for further information.
13. Verify that the job ran successfully with a return code of 0 or 4. For information, see *Verifying JCL Upgrade Jobs*.
14. After submitting the job, enter cancel on the command line or press PF3 to save changes.
15. On the Target SCINDX Index Processes Menu, select option 3: Create EIM Indexes (DDL), and press Enter.

You are placed in edit mode on data set `DSNHLQ.SIEBEL.INSTALL.JCL(EIMIX)`.

16. Submit the JCL in the data set to run the DDL to create new EIM indexes.
17. Verify that the job ran successfully with a return code of 0 or 4. For information, see *Verifying JCL Upgrade Jobs*.
18. After submitting the job, press PF3 to return to the Target Database In-Place Upgrade Menu.

Running the Gen_Primary SQL to Update Data in Target Database Tables

The Gen_Primary data migration jobs apply changes to primary child columns that are required for the upgrade to the target database tables. The following procedure outlines the steps to follow to run the Gen_Primary jobs.

Note: If you are upgrading to Siebel Industry Applications 8.1 from Siebel Industry Applications 8.0, there are no changes to primary child columns in database tables. As a result, the `gen_primaryx.jcl` upgrade files generated on the midtier platform do not contain any SQL commands, and do not have to be run, for this upgrade path.

To run the Gen_Primary SQL

1. On the Target Database In-Place Upgrade Menu, select option 10: Gen_Primary Data Migration, and press Enter.

   You are placed in edit mode on data set `DSNHLQ.SIEBEL.INSTALL.JCL(SUBGENP)`.
2. Submit the JCL in the data set to update data in the target tables.

   This submits all the Gen-Primary data migration job streams (the number of job streams varies by upgrade type). All of the jobs are run in parallel as no dependencies exist between them.
3. Verify that the job ran successfully with a return code of 0 or 4. For information, see *Verifying JCL Upgrade Jobs*.
4. After submitting the job, enter cancel on the command line or press PF3 to save changes.

Generating RUNSTATS Jobs

Upgrades: All upgrades.

Environments: All environments

The following procedure generates RUNSTATS jobs for all Siebel table spaces. This process excludes all interface tables (EIM and tables with an `_IF` suffix).

Note: If you are performing a development environment upgrade, run the RUNSTATS jobs before starting the repository merge process.

To generate RUNSTATS jobs

1. On the Target Database In-Place Upgrade Menu, select option 11: Generate/Run Runstats, and press Enter.

   The following message appears:

   ```
   Before proceeding, make sure ALL "Gen-Primary jobs completed. Re-enter option 11 to continue.
   ```

2. Reselect option 11: Generate/Run Runstats, and press Enter.

   The Upgrade Runstats panel appears. The panel ID is SBLRSP.
3. Read the information relating to the RUNSTATS jobs on the Upgrade Runstats panel, then press Enter to start the RUNSTATS job generation process.
4. Messages are displayed as the jobs are generated. When the process is completed, press Enter.

   You are placed in edit mode on the PDS data set that contains the RUNSTATS jobs, **DSNHLQ.SIEBEL.RUNST**.
5. Select the **DSNHLQ.SIEBEL.RUNST(@RSTXREF)** PDS member.

   This file contains information relating to each RUNSTATS job, for example, the table for which the job collects statistics and when statistics were last collected on the table.
6. Select the RUNSTATS jobs you want to run and run each one individually using the JCL in the data set **DSNHLQ.SIEBEL.RUNST(@RSTXREF)**.

   Alternatively, go to the **DSNHLQ.SIEBEL.INSTALL.JCL(SUBRUNST)** data set and submit the JCL in the data set to run all the RUNSTATS jobs for table spaces that did *not* have statistics collected during any of the previous upgrade processes.
7. Verify that the job ran successfully with a return code of 0 or 4. For information, see *Verifying JCL Upgrade Jobs*.
8. Press PF3 to save changes.

Restarting Upgrade Jobs That Fail

Upgrades: All upgrades.

Environments: All environments

This topic is part of an upgrade process. See *How to Perform a Siebel Database Upgrade*.

This topic describes how to restart mainframe upgrade jobs that fail.

To restart a mainframe upgrade job that fails

1. Identify the job that failed under the SDSF exit (job status).

   You can find the name of the job that failed using one of the following options on the In-Place Upgrade Main Menu:

   - Option 5: Staging Database Joblog
   - Option 6: Target Database Joblog

   See *Running SQL in Siebel Logs* for further information.
2. Determine the reason the job failed. You can determine the reason for the job failure by selecting the job on the SDSF output queue panel using the **s** action character.
3. Correct the problem.

   If a job fails because of an SQL error, fix the problem in the appropriate SQL PDS member. For example, for PRESCHM jobs, you can locate the relevant SQL PDS member in the **DSNHLQ.SIEBEL.PRESCHM.SQL** data set.

Note: If you require help in performing these tasks or if you require confirmation that the tasks that you are about to run are correct, create a service request (SR) on My Oracle Support. You can log service requests by accessing My Oracle Support (Service Request tab), or by using your existing phone support numbers to contact Oracle Global Customer Support.

4. Once the problem has been identified and corrected, restart the job. You can do this by selecting the job that failed on the SDSF output queue using the `SJ` action character. This will automatically call up the next scheduled job allowing the upgrade process, for example PRESCHM, to continue.

15 Performing Postupgrade Tasks on the Target Database

Performing Postupgrade Tasks on the Target Database

This chapter describes tasks you must perform after upgrading the target database. It includes the following topics:

- *Transferring the Development Environment Upgrade Output Files to the z/OS Host*
- *Synchronizing the Schema*
- *Activating New License Keys After an Upgrade*
- *Deleting Redundant Upgrade Files*

Transferring the Development Environment Upgrade Output Files to the z/OS Host

Upgrades: All upgrades.

Environments: Development environment only.

This topic is part of an upgrade process. See *How to Perform a Siebel Database Upgrade*.

The development upgrade upgphys process generates the following files, which synchronize tables and indexes on the development database, and complete the development upgrade:

- synctab.sql
- syncidx.sql

Transfer these files to the z/OS host using the following procedure.

To transfer the development environment upgrade output files to the z/OS host

1. Navigate to the **\DB2390\dbsrvr\dboutput\upgrade** directory (Windows) or the **/DB2390/dbsrvr/dboutput/upgrade** directory (UNIX) and double-click the ftp_syncdd.bat file (Windows) or issue the following command (UNIX):

   ```
   ftp -vn < ftp_syncdd.txt > ftp_syncdd.log
   ```

2. Enter your TSO password and press Enter.

   All the development environment postupgrade files are transferred from the midtier to the z/OS host.

3. Review the ftp_syncdd.log file which is created in the upgrade directory and verify that all the files listed in the ftp_syncdd.txt file transferred successfully to z/OS staging data sets.

Note: If the development and production upgrades are run on different midtier computers, then you must copy the files to be transferred to the z/OS host to the production midtier computer before running the ftp_syncdd.bat file.

Synchronizing the Schema

Upgrades: All upgrades.

Environments: Development environment only.

This topic is part of an upgrade process. See *How to Perform a Siebel Database Upgrade*.

After completing the development environment target database upgrade, you must perform the following procedure to synchronize database tables and indexes.

To synchronize the schema

1. Use the following command to display the Siebel In-Place Upgrade Main Menu:

   ```
   EXEC 'DSNHLQ.SIEBEL.EXEC'
   ```

   The panel ID is SBLUPG8P.
2. Select option 4: Post-Upgrade, and press Enter.

   The Target Database Post-Upgrade Menu appears. The panel ID is SBLPSTP.
3. Select option 0: Apply/Run Table Synchronization, and press Enter.

   You are placed in edit mode for the data set `&DSNHLQ.SIEBEL.INSTALL.JCL(SUBSYNCT)`.
4. Run the job using the JCL in the data set.

   This job submits the SYNCTAB (synchronize table) job which executes a file containing the DDL for the tables.
5. Verify that the job ran successfully with a return code of 0 or 4. For information, see *Verifying JCL Upgrade Jobs*.
6. After submitting the job, enter `cancel` on the command line or press PF3 to save changes.
7. On the Target Database Post-Upgrade Menu, select option 1: Apply/Run Index Synchronization, and press Enter.

   You are placed in edit mode for the data set `&DSNHLQ.SIEBEL.INSTALL.JCL(SUBSYNCX)`.
8. Run the job using the JCL in the data set.

   This job submits the SYNCIDX (synchronize index) job which executes a file containing the DDL for the indexes.
9. Verify that the job ran successfully with a return code of 0 or 4. For information, see *Verifying JCL Upgrade Jobs*.
10. Press PF3 to return to the Upgrade In-Place Main Menu.

    Upgphys processing is now completed.

Activating New License Keys After an Upgrade

Upgrades: All upgrades.

Environments: All environments

This topic is part of an upgrade process. See *How to Perform a Siebel Database Upgrade*.

In Siebel Innovation Pack 2016, the license keys for Siebel CRM base applications that were previously provided in seed data in the Siebel database are inactive. License keys entered by customers are unchanged. A new utility is provided for activating or deactivating the license keys that you require. You run the License Key Activation utility after installing a new Siebel database, running Incremental Repository Merge (for migration installations), or completing a full database upgrade.

You can find license key information for Siebel Business Applications at Oracle's license codes site.

For the Siebel license keys, see

http://licensecodes.oracle.com/siebel.html

The License Key Activation utility is supported on all operating systems and databases for Siebel

Business Applications.

To start the License Key Activation utility

1. On the computer where you installed Siebel Server, navigate to the following location:

   ```
   SIEBSRVR_ROOT\bin
   ```

2. Run the following program, according to your operating system:
   - Microsoft Windows: **`licensekeymodule.bat`**
   - UNIX: **`licensekeymodule.sh`**
3. In the License Key screen, enter valid data for the following fields:
   a. In the Siebel Server Location field, enter the installation path for Siebel Server.
   b. In the ODBC DSN field, enter the ODBC data source for the Siebel Database.
   c. In the Table Owner field, enter the table owner for the Siebel database.
   d. In the Username field, enter the user name for logging into the Siebel database.
   e. In the Password field, enter the password for logging into the Siebel database.
   f. In the DB Platform field, enter the RDBMS type: IBM DB2, Microsoft SQL Server, or Oracle Database.
   g. In the Log Folder field, enter the folder in which the log file licenseKeys.log is created. This log file shows database connection information for troubleshooting purposes, and lists all of the license keys that were activated or deactivated in each session.
4. Click Login.

   The license key activation screen appears, which lists Siebel CRM license keys.
5. For each license key module whose activation status you want to change, click the Active Flag check box to activate or deactivate this license key.

6. To apply your selections to the Siebel database, click Apply. Or, to reset any changes you have made in this screen, or since you last clicked Apply, click Reset.

   CAUTION: After you have clicked Apply, the Reset button does not reset activation settings to their original state. However, you can change the activation status and click Apply again.

7. To exit the utility, click the X in the upper corner of the screen.

For more information on installing license keys, see *Siebel Installation Guide* for the operating system you are using and *Siebel Applications Administration Guide* .

Deleting Redundant Upgrade Files

Upgrades: All upgrades.

Environments: All environments

This topic is part of an upgrade process. See *How to Perform a Siebel Database Upgrade*.

After you complete the database upgrade process, delete any upgrade files that are no longer required. The procedures in this topic describe how to drop all staging database objects, and how to delete Unload data sets and stored procedures.

Removing the Staging Database

After you have successfully completed your database upgrade, you must remove the staging database objects before you can reuse the same database prefix and tableowner name.

To remove the staging database

1. Log on to the z/OS host.
2. Submit the JCL in the `&DSNHLQ.SIEBEL.INSTALL.JCL(STGDROPJ)` data set.

   The staging database objects are removed.
3. Press PF3 to complete the process.

Deleting Unload Data Sets

When your database upgrade is completed, you no longer require the Unload data sets. Perform the following procedure to generate a list of the Unload data sets and then delete them.

Note: Before performing this procedure, you must have the `*.siebel.exec` library allocated.

To delete unload data sets

1. Log on to the z/OS host.
2. Enter the following command and press Enter:

```
TSO SBLDELDS
```

A list of the unload data sets to be deleted is generated.

3. Navigate to the `*.siebel.install.jcl` library.
4. Submit the JCL in the data set `&DSNHLQ.SIEBEL.INSTALL.JCL(DELULDS)` to delete the Unload data sets.
5. Verify that the job ran successfully with a return code of 0. For information, see *Verifying JCL Upgrade Jobs*.

Deleting Stored Procedures

A number of stored procedures are installed during the database upgrade on the z/OS host to facilitate upgrade processing. These stored procedures are not required after the upgrade has been completed successfully and can be deleted. The following procedure describes how to drop the upgrade stored procedures.

For information on installing the stored procedures, see *Creating and Deploying Stored Procedures on the Target Database*.

To drop the upgrade stored procedures

1. Log on to the z/OS host.
2. Submit the JCL in the data set member `DSNHLQ.SIEBEL.SP.CNTL(DRPSIA)` or `DSNHLQ.SIEBEL.SP.CNTL(DRPHOR)`, depending on your upgrade path.

   The Stored Procedures are deleted.
3. Press PF3 to complete the process.

16 Reviewing the Siebel Upgrade Log Files

Reviewing the Siebel Upgrade Log Files

This chapter describes the upgrade log files that the Siebel Upgrade Wizard produces on the midtier during the upgrade file generation process. It also describes how to check the status of staging and target upgrade jobs on the z/OS host using the z/OS Siebel job logs. This chapter includes the following topics:

- *About the Siebel Upgrade Log Files*
- *Reviewing Siebel Upgrade Log Files for Errors*
- *Manually Archiving Upgrade Log Files*
- *Viewing the Siebel Job Log Status*
- *Running SQL in Siebel Logs*

About the Siebel Upgrade Log Files

The Upgrade Wizard writes logs that provide detailed information on the upgrade processes and they also list all errors. The Upgrade Wizard writes the logs for a process to the following directory by default:

Windows: **`SIEBEL_ROOT\LOG\process`**

UNIX: **`$SIEBEL_ROOT/log/process`**

where process is the name of the upgrade process you have run, for example, **`upgrep_dev_782`** or **`prepare_for_production_upgrade`**.

The process directory contains the following subdirectories:

- Output. Directory containing the Upgrade Wizard log files
- State. Directory containing the state.log file

The output and state directories are automatically archived on subsequent runs of a process that completes successfully. (The names of subsequent log directories are appended with **`_1`**, **`_2`**, and so on.) To preserve disk space, periodically delete or save log directories to another location.

> **Note:** You can select a different log directory from the Log Output Directory screen on the Database Configuration Wizard.

About the State Log File

Each upgrade process consists of a series of steps, each of which must complete successfully. If the Upgrade Wizard cannot complete a step, it marks the step as incomplete in the state.log file and exits. The state.log file is located in **`SIEBEL_ROOT\LOG\process\state`** (Windows) or **`SIEBEL_ROOT/LOG/process/state`** (UNIX).

You must correct the error and then run the Upgrade Wizard again. When you rerun the Upgrade Wizard, it refers to the state log and resumes at the incomplete step that contained the error.

About Process Log Files

You can identify errors you encounter during an upgrade by reviewing the log file named UpgWiz.log (Windows) or srvrupgwiz1.log (UNIX) in the `SIEBEL_ROOT\LOG\process\output directory` (Windows) or the `SIEBEL_ROOT/LOG/process/output` directory (UNIX).

The name of the log file increments for subsequent log files that are created if the Siebel Upgrade Wizard encounters a problem and you run the Siebel Upgrade Wizard again.

Review the end of the log file for details about the latest failure. If the step that failed was not a native SQL step (which would be listed in the log file), then it occurred as part of an external utility. You can review the relevant log file, which is identified by the `/L` parameter.

How to Determine if the Upgrade Process Completed Successfully

If the status of all the steps in the state.log is Complete, the upgrade process completed successfully.

If the status of any step is Incomplete, the upgrade process did not complete successfully. You must identify the error and correct it before resuming the upgrade.

> **Note:** In some cases, the Upgrade Wizard can complete a step even though the step contains unacceptable errors. You must verify that all steps do not contain unacceptable errors, even those with a status of Complete.

Use the following process to identify errors:

1. Resolve errors for steps identified with a Status of Incomplete in the state.log file.
2. Review all the steps with a status of Complete in the state.log file. If any contain unacceptable errors, resolve these errors. See *Reviewing Siebel Upgrade Log Files for Errors* for information on identifying unacceptable upgrade errors.
3. Restart the Upgrade Wizard, or, if necessary, restore the database and rerun the upgrade process.

If you have any questions regarding how to resolve errors, create a service request (SR) on My Oracle Support. You can log service requests by accessing My Oracle Support (Service Request tab), or by using your existing phone support numbers to contact Oracle Global Customer Support.

Log Files That Can Be Ignored

If the upgrade completed successfully, there are several log files that you can safely ignore:

- Windows: sw_cfg_xxx.log and siebel.log
- UNIX: srvrupgwiz_*.log and siebel_*.log. For example, srvrupgwiz_001.log, and srvrupqwiz1_02.log
- Any other log file that existed before the start of the upgrade

CAUTION: UNIX Only: The log file **srvrupgwiz_001.log** is a different file than **srvrupgwiz1.log**. Do not ignore log files named **srvrupgwiz1.log**, **srvrupgwiz1_01.log** and so on.

Reviewing Siebel Upgrade Log Files for Errors

Upgrades: All upgrades.

Environments: All environments

This topic is part of an upgrade process. See *How to Perform a Siebel Database Upgrade*.

Review the logs created when you run the Siebel Upgrade Wizard to verify that the upgrade process completed correctly and to identify errors that must be resolved. The log files might include errors that are expected and benign. You must compare any error messages found in the log files to a list of acceptable error messages, and correct any unacceptable errors.

Complete the following procedure to manually review log files for unacceptable errors.

To manually review the log files for unacceptable errors

1. Review the state.log file to see at what step the upgrade failed. This step can be traced back to the driver file. The state.log file is located in the following directory:
   Windows: **SIEBEL_ROOT\LOG\process\state**
   UNIX: **$SIEBEL_ROOT/LOG/process/state**
2. Print the errors file. The errors file lists the benign and expected errors you might find in the log files; you can ignore these errors. The errors file is located in the installation subdirectory:
   Windows: **DBSRVR_ROOT\DB2390\errors.rtf or errors.htm**
   UNIX: **DBSRVR_ROOT/DB2390/errors.txt**
3. Sort the log files in the following directory by date.
   Windows: **SIEBEL_ROOT\LOG\process\output**
   UNIX: **$SIEBEL_ROOT/LOG/process/output**
4. Open each log file, starting with the earliest, and search for errors. Starting with the earliest log file can shorten your research time.
   Log files are identified by the **.log** extension. Errors are either tagged with the word *error* or enclosed in open/closed brackets **[...]**.
5. For each error found, compare the error description against the list of acceptable errors documented in the **errors** file.
   The log files generated by the Siebel Upgrade Wizard (for example srvrupgwiz1.log) appear in the errors file as **upgwiz1.log**, **upgwiz2.log**, incrementing for additional log files. Identify errors as follows:
   - If you find the error in the errors file, it is acceptable and no action is required. Continue to review the errors found in the log file.
   - If an error appears multiple times in a log file, but only one occurrence of that error appears in the errors file, all errors of that type are acceptable and no action is required. Continue to review the errors found in the log file.

- If a log file is not listed in the errors file, there are no acceptable error messages for that log file. You must correct the condition that caused the error before you rerun the Siebel Upgrade Wizard.
- If you find an error that is not listed in the errors file, it is unacceptable. You must correct the condition that caused the error before you rerun the Siebel Upgrade Wizard.

  To help resolve unacceptable errors, view 477324.1 (Article ID) on My Oracle Support. This document was formerly published as Siebel Troubleshooting Steps 21. Common errors and how to resolve them are listed in this document. If the error is not listed or you cannot resolve it, create a service request (SR) on My Oracle Support. *Do not proceed with the upgrade*.

6. Repeat step 5 for each log file.

Although unacceptable errors are rarely encountered, this review is critical. Certain errors, such as a failure to create indexes, can result in performance problems or anomalous behavior in Siebel Business Applications.

Manually Archiving Upgrade Log Files

Upgrades: All upgrades.

Environments: All environments

This topic is part of an upgrade process. See *How to Perform a Siebel Database Upgrade*.

After a successful installation and upgrade, you must manually save and archive the log files located in the `SIEBEL_ROOT/LOG/process` (Windows) directory.

By default, only nine (9) upgrade log files are retained for subsequent retries of the Siebel Upgrade Wizard. After nine log files have been created, when the Siebel Upgrade Wizard is rerun, it overwrites log files beginning with the earliest one created and recycles the rest as necessary. (This does not apply to the state.log file.)

The number of log files retained can be increased by resetting the siebel_log_archive environment variable, for example, set the variable to 20 to retain twenty (20) log files.

Viewing the Siebel Job Log Status

Upgrades: All upgrades.

Environments: All environments

This topic is part of an upgrade process. See *How to Perform a Siebel Database Upgrade*.

Whether you are using Siebel-scheduling or vendor-scheduling to run your upgrade jobs, you can query the Siebel job log for the staging and target upgrade processes by completing the following procedure.

Note: To view job status, you must have installed DSN REXX.

To view the Siebel job log status

1. If you are not on the Siebel In-Place Upgrade Main Menu, enter the following command:

```
EXEC 'DSNHLQ.SIEBEL.EXEC'
```

2. Select one of the following options, and press Enter:
   - Option 5: Staging Database Joblog (SBLLOG S).

     The Staging Joblog Query panel displays.
   - Option 6: Target Database Joblog (SBLLOG T).

     The Target Joblog Query panel displays.

   The panel ID of both the staging and target joblog panels is SBLLOGP.

   A list of successful and failed jobs appears.
3. Next to the label, List By Job Status, enter `1` to list failed jobs and enter `2` to list jobs that have not yet been run.

   The list displays 250 lines only. The Unload, Load and Index Rebuild jobs have more than 250 jobs, so you must query using another option or by specific or partial job name.
4. Press PF3 when you are finished viewing the log.

   The Siebel In-Place Upgrade Main Menu for your upgrade path appears.

Running SQL in Siebel Logs

By using SPUFI or the command line, you can construct SQL queries to run against the staging or the target log tables.

The following statements report the status of the load jobs for the staging and target databases:

```
 SELECT JOB_DESC, JOB_NAME, JOB_STATUS FROM CQ10A901.TMP_SBLLOG_STG WHERE JOB_NAME
LIKE 'LKC%';
```

```
 SELECT JOB_DESC, JOB_NAME, JOB_STATUS FROM CQ10A901.TMP_SBLLOG_TAR WHERE JOB_NAME
LIKE 'LKC%';
```

You can alter the preceding statements to report the status of any jobs by changing the JOB_NAME LIKE statement to another prefix.

This following statement checks for failed unload jobs, but can check for any other job by changing the JOB_NAME LIKE statement to use the appropriate prefix.

```
SELECT JOB_DESC, JOB_NAME, JOB_STATUS FROM CQ10K034.TMP_SBLLOG_STG WHERE JOB_STATUS != 'COMPLETED SUCCESSFUL'
AND JOB_NAME LIKE 'LKB%';
```

17 Postupgrade Tasks for Siebel Database and File System

Postupgrade Tasks for Siebel Database and File System

This chapter describes the Siebel Database and file system tasks you must perform after you upgrade to the current release of Siebel CRM on the z/OS database platform. In addition to performing these tasks, you must also perform the applicable tasks in the chapter in *Siebel Database Upgrade Guide* that describes postupgrade tasks for the Siebel Database and file system. This chapter contains the following topics:

- *Updating File System Attachments*
- *Reapplying Schema Customizations to the Siebel Database*
- *Regenerating the Database Template File*

Updating File System Attachments

Upgrades: All upgrades.

Environments: All environments

This topic is part of an upgrade process. See *How to Perform a Siebel Database Upgrade*.

Since Siebel CRM 7.5, filenames of attachments include the attachment table name. If an upgrade migrates the records in an attachment table to a new attachment table, you must run a utility to update the file system attachment names.

Oracle provides a utility to update attachment filenames in the Siebel File System. The following table lists the input table name to use when you run the utility. The utility updates all files containing the table name you specify.

For example, if you specify the tables S_OLDTABLE_ATT and S_NEWTABLE_ATT, the utility updates the files system attachments by copying all attachment files containing the string S_OLDTABLE_ATT to attachment files containing the string S_NEWTABLE_ATT.

Upgrade Path	Old Table	New Table
Upgrades from: 7.5.3, 7.7.x, 7.8.x and 8.0. Siebel Insurance only.	S_INSCLM_BL_ATT	S_INVOICE_ATT

To update file system attachments

1. Navigate to the following directory:

   Windows: `SIEBEL_ROOT\bin`

   UNIX: `$SIEBEL_ROOT/bin`

2. Run the following utility:

   Windows: `chng_file_sys.bat OLD_TABLE NEW_TABLE "FILE_SYSTEM"`

   UNIX: `chng_file_sys.ksh -s OLD_TABLE -t NEW_TABLE -f "FILE_SYSTEM"`

   where:

   - OLD_TABLE. The name of the attachment table in the release you are upgrading from. This table is obsolete in the new release.
   - NEW_TABLE. Attachment records in OLD_TABLE were migrated to NEW_TABLE in the new release. The utility copies file system attachments containing the string OLD_TABLE to attachments containing the string `NEW_TABLE`.
   - `"FILE_SYSTEM"`. The name of the directory where the Siebel File System attachments reside (entered inside quotation marks)

     Windows example:

     ```
     chng_file_sys.bat S_INSCLM_BL_ATT S_INVOICE_ATT"C:\siebfile\att"
     ```

     UNIX example:

     ```
     chng_file_sys.ksh -s S_INSCLM_BL_ATT -t S_INVOICE_ATT-f "/usr/siebel/siebfile/att
     ```

3. Review renamed files carefully to verify that they can be accessed by Siebel Business Applications.

   For example, since `S_INSCLM_BL_ATT` is migrated to `S_INVOICE_ATT`, verify that files such as `S_INSCLM_BL_12-1ABC.SAF` are renamed to`S_INVOICE_12-1ABC.SAF`.

Reapplying Schema Customizations to the Siebel Database

Upgrades: All upgrades.

Environments: Development environment only.

This topic is part of an upgrade process. See *How to Perform a Siebel Database Upgrade*.

In the current release, several tables are obsolete or have been replaced by new tables. If you added extension columns or foreign key (FK) columns to tables that are obsolete in the current release, you might want to reapply these changes to new tables that have replaced the obsolete tables.

Reviewing Obsolete Tables

The upgrade process generates a report that you can review for information about obsolete tables that will help you decide whether or not you have to reapply schema customizations. This report, xtndobstbl.txt, lists the following:

- Obsolete tables in the current release
- Custom columns in obsolete tables
- Custom foreign key columns pointing to obsolete tables
- EIM mappings for custom foreign key columns to obsolete tables
- Workflow columns by custom foreign key to obsolete tables
- Custom denormalized columns to Siebel base tables that might be obsolete

Each obsolete table is listed with one of three codes:

- Not Used. These tables are not required in the current release but, if you are already using them, for example, with docking or EIM, you can continue to do so and they will be supported.
- EOL (end of life). These tables are not used in the current release, and they are not supported in future releases.
- Inactive. These tables have been discontinued, and are not supported in the current release. You can choose to move extension columns and foreign key columns that reside on inactive tables to alternate tables.

If no tables are listed in xtndobstbl.txt, no action is required. If this file lists any tables, you can reapply their custom extensions and foreign key columns to tables in the current release using Siebel Tools. For further information on this task, see *Configuring Siebel Business Applications* .

The following table shows examples of previously used tables that are inactive in the current release (you can no longer use these tables) and the suggested new tables to which custom extensions can be reapplied. The new tables are recommendations only; the tables that you choose to apply the extensions to might vary depending on their type and use. For help with validating the reapplication of extension columns, and reviewing the steps necessary to migrate any extension column data to the new tables, create a service request (SR) on My Oracle Support. You can log service requests by accessing My Oracle Support (Service Request tab), or by using your existing phone support numbers to contact Oracle Global Customer Support.

This data must be migrated during both the development and production environment upgrades.

Inactive Table	Suggested New Table
S_EMPLOYEE	**S_CONTACT, S_USER, S_EMP_PER**
S_EMP_POSTN	**S_PARTY_PER**
S_ORG_INT	**S_ORG_EXT, S_BU**
S_POSTN_RPT_REL	**S_PARTY_RPT_REL**

If you have created many custom extension columns on the tables **S_EMPLOYEE** or **S_ORG_INT**, neither of which are used in Siebel Innovation Pack 2016 or later, the joins between the tables will not be accurate. This can result in SQL errors when you launch the Siebel client.

In such cases, using Siebel Tools, you can manually create corresponding extension columns in the new target tables, and manually move the data to the new extension column on the new table before you continue migration of the application. Then

review the business component configuration to make sure that the client will operate properly. You might have to do this in one of the following instances:

- Fields based on custom extension columns in **S_EMPLOYEE** or **S_ORG_EXT**
- Fields based on custom extension tables from **S_EMPLOYEE** or **S_ORG_INT** with or without join
- Custom joins to custom extension tables from **S_EMPLOYEE** or **S_ORG_INT**

If you review the xtndobstbl.txt file after you run the business component migration utility, you will find a list of fields that require your attention.

The following table lists examples of previously used tables that are no longer used in the current release of Siebel CRM.

Previous Table	Suggested New Table
S_CRSE	**S_SRC, S_SRC_EVT**
S_CRSE_OFFR	**S_SRC, S_SRC_EVT**
S_CRSE_REG	**S_SRC_REG**
S_CTLG_CAT_REL	**S_CTLG_CAT**
S_OPTY_PROD	**S_REVN**
S_TMSHT_LINE	**S_TMSHT_ITEM, S_TMSHT_LN**

The following table lists examples of tables which were unused in previous releases of Siebel Business Applications, but are used in the current release.

Current Table	Previous Table
S_ACT_EMP	**S_EVT_ACT**
S_ACT_CON	**S_EVT_ACT**

Regenerating the Database Template File

Upgrades: All upgrades.

Environments: Development environment only.

Following the upgrade, you must regenerate your local database template file used by Siebel Remote. Use the Generate New Database Component from a New Siebel Server option to do this. For procedures on regenerating the local database template file, refer to *Siebel Remote and Replication Manager Administration Guide* .

18 Postupgrade Tasks for Siebel Business Applications

Postupgrade Tasks for Siebel Business Applications

This chapter describes the application-specific postupgrade tasks you must perform after upgrading to the current release of Siebel CRM on the z/OS database platform. This chapter includes the following topics:

- *Performing Postupgrade Tasks for the Siebel Application*
- *Upgrading Siebel Seeded Workflows*

Performing Postupgrade Tasks for the Siebel Application

After you upgrade to the current release of Siebel CRM, you must perform a number of application-specific tasks. These include:

- *Upgrading Siebel Seeded Workflows*.

  This postupgrade task is specific to the z/OS database platform.

- You must also perform the relevant tasks in the chapter in *Siebel Database Upgrade Guide* that describes postupgrade tasks for the Siebel application.

When you have completed these tasks, your upgraded Siebel CRM system is ready for use.

Upgrading Siebel Seeded Workflows

Upgrades: All upgrades.

Environments: All environments

This topic is part of an upgrade process. See *How to Perform a Siebel Database Upgrade*.

Customizations to seeded workflows were saved and migrated during upgrade, but you must manually reimplement them in order for them to work properly.

In Siebel CRM Release 7.7.*x*, workflow definitions were relocated to the Tools Repository.

To upgrade a seeded workflow

1. In the Siebel Repository, revise each seeded workflow so that a new copy is created with a new version number.
2. Manually merge in your customizations, and then deploy and activate the workflow.

19 Tuning the Siebel Production Upgrade Scripts

Tuning the Siebel Production Upgrade Scripts

This chapter describes the ways in which you can improve the performance of the production environment upgrade by tuning the production upgrade scripts in a test environment. This chapter contains the following topics:

- *About Tuning the Upgrade Scripts*
- *Optimizing Unload and Load Job Performance*
- *Adding the Statistics Clause to Load Cards*

Note: The *Siebel Database Upgrade Guide* describes how to use the Siebel Upgrade Tuner to tune your production upgrade scripts. The Upgrade Tuner is not supported on the IBM DB2 for z/OS database platform.

About Tuning the Upgrade Scripts

Upgrades: All upgrades.

Environments: Production test environment only. Does not apply to production environment.

You can tune the SQL upgrade scripts in a production test environment to improve their performance and then reuse these tested scripts in the live production environment. For example, the scripts used to upgrade your Siebel database are generic. They update your Siebel database to support all Siebel applications' functionality. You can reduce downtime by tuning these scripts to optimize performance by eliminating SQL statements that are not required. You can then reuse these revised scripts in your production upgrade.

You can tune your production upgrade scripts at any time after upgrading the Siebel database schema in your production test environment.

Contacting Oracle's Advanced Customer Services

You are required to contact your Oracle sales representative for Oracle Advanced Customer Services to request approval for any upgrade script tuning that you perform. If you do not, you might invalidate your support agreement. It is recommended (but not required) that you contact Oracle's Advanced Customer Services for help with the following tasks:

- Running load and unload jobs in parallel
- Changing the job submission order of load and unload jobs

  If you want to change the submission order of jobs other than the load and unload jobs, you must first obtain approval from Oracle's Advanced Customer Services because many jobs have dependencies on other jobs and must be submitted in a specified sequence.

Optimizing Unload and Load Job Performance

Upgrades: All upgrades.

Environments: Production test environment only. Does not apply to production environment.

This topic describes ways in which you can improve the performance of the unload and load jobs for the production upgrade. You can do the following:

- Optimize the unload and load jobs to reach maximum parallelism:
  - Run as many of the unload / load jobs in parallel as the DB2 subsystem can support.
  - Change the generated REXX exec job submission order to submit the longest running unload/load jobs first.

    If all the unload jobs are run in parallel, the shortest amount of time this process can take is the length of time it takes for the longest unload job to complete.
  - For partitioned tables, split the unload files so that data is unloaded and loaded in parallel for each partition. Add the WHERE clause to the unload SQL to control the data that is unloaded.
  - Overlap load and unload jobs.

    Once an unload job for a table has completed, the load job for that table can be started (assuming you have a schema structure consisting of one table for each table space). This means that load jobs can be running at the same time as unload jobs.
- Add the ORDER BY clauses to the unload SQL to load data in clustering sequence (you must manually add ORDER BY clauses to the unload SQL).

  The *.pretedit.jcl (pretkeys) job builds ORDER BY clauses for individual tables into the data set *.syskeys.orderby.
- Use third-party utilities to accelerate the unload/load process.

  Note: Before using third-party utilities, you are required to contact your Oracle sales representative for Oracle Advanced Customer Services to request assistance.

  You can use the DB2 Cross Loader (an option of the IBM Load utility) to load data directly from the source to the target database, thereby eliminating the unload step.
- Populate new columns as part of the unload SQL.

  Note: If you want to populate new columns as part of the unload SQL, you are required to contact your Oracle sales representative for Oracle Advanced Customer Services to request assistance.
- Add any large tables to *.TABLIST so that the unload and load processes use the large proc, SIEBEL.PROC(SV7LD10L), which allocates more memory, instead of using the standard proc, SIEBEL.PROC(SV7LD10S).

Adding the Statistics Clause to Load Cards

Upgrades: All upgrades.

Environments: Production test environment only. Does not apply to production environment.

If your database schema structure follows the 1:1:1 model, and if LOAD REPLACE is specified on a load card (so tables are loaded from scratch), you can improve upgrade performance by collecting statistics while running the load job rather than having to run a separate RUNSTATS job. You can do this by adding the STATISTICS clause to the load cards, for example:

```
STATISTICS TABLE(ALL) INDEX(ALL)

UPDATE ACCESSPATH
```

Note: If LOAD RESUME is specified on a load card, you cannot collect statistics while running the load job.

20 Migration Planning Using Siebel Migration

Migration Planning Using Siebel Migration

This chapter provides information on planning your data migration (for a Dev to Test to Production) with Siebel Migration. It includes the following topics:

- *About Migrating with Siebel Migration z/OS*
- *Roadmap for Planning a Migration with Siebel Migration*
- *About Siebel Rules Expression Designer*
- *About Migration Process Orchestration During the Siebel Migration Process*
- *About the Process Flow for Migration Resources*
- *About the Siebel Migration Log Files*
- *About REST API Used for Migration Discovery and Execution*

Note: The Siebel Migration application is supported in Siebel Innovation Pack 2017 and later releases. The Siebel Migration application was previously known as the Repository Migration Utility (dev2prod). Dev2prod is no longer supported - it is supported only in releases prior to Siebel Innovation Pack 2017.

About Migrating with Siebel Migration z/OS

Environments: All environments

Platforms: All platforms.

Siebel Migration is a Web-based tool for end-to-end repository and data migration. Migrating repository or data using Siebel Migration is not the same as performing a database upgrade where you migrate your custom repository and schema from one release of Siebel CRM to a higher release level. Migrating repository or data using Siebel Migration is a tool that allows you to replicate the setup (including repository, runtime repository, application workspace data, application data, application interface web artifacts, and file system artifacts) that exists on one environment (known as the source) to another environment (known as the target).

- The source environment is the Design Time Repository (DR), also known as the development environment.
- The target environment is the Runtime Repository (RR), also known as the test environment (system integration testing or user acceptance testing) or production (live environment) or pre-production environment that internal and external users access.

Note: Siebel Migration does not support migration of repository or workspace data from non-development (RR) environments to other RR environments. Migrating from Test to Production or UAT to Production is not permitted.

CAUTION: It is recommended that you back up your target database before starting to migrate repository or data using Siebel Migration.

Siebel Migration uses the RESTful services to export the data on the source environment, transfer the exported data to the target environment, and then import the data to the target environment. Siebel Migration orchestrates all the resources chosen in the migration plan that is being executed.

Siebel Migration is capable of synchronous and asynchronous migration of database artifacts. For example, you can use Siebel Migration for the synchronous migration of your repository, runtime repository, application workspace data, application data, application interface Web artifacts and file system artifacts from a source environment to a target environment. You can also use Siebel Migration for asynchronous migration plans, where all activities that must be completed on the source environment can be done independently of all the migration activities to be completed on the target environment. This is beneficial if you have firewall restrictions or situations where source environments and target environments are managed by different teams. Creating asynchronous migration plans on the source and target environments allows customers to separate responsibilities by assigning a team to activities on the source environment and assigning another team to activities on the target environment.

Siebel Migration provides the following tools to prepare your data for migration:

- Database Utilities.
- Application Deployment Manager (ADM).
- Migration Rules Expression Designer to create migration rules for your migration.

Use Siebel Migration to do the following:

1. Add connections to your migration. For more information about creating connections, see *Creating a Connection*.
2. Create Migration Plans. For more information about creating Migration Plans, see *Creating a Migration Plan*. Migration plans are segregated into two separate plans:
    - Source Only Environment Migration Plan. This migration plan exports all the required artifacts based on the resources selected as a package. If you create a Migration Plan for the Source Only environment, the plan can be used for Export only.
    - Destination Only Environment Migration Plan. This migration plan is on the target environment that imports all the required artifacts based on the same resources selected for the export migration plan on the source environment. If you create a Migration Plan for Destination Only target environment, the Migration Plan can be used for Import only.
3. View the historical data of the migration execution and log history for migration tasks. For more information about viewing historical data of the migration execution, see *Viewing Migration History and Log Files*.
4. Execute Migration Plans. The migration plan execution list includes the Package Filename field. This field is populated with the package filename provided by the user. Depending on the action selected when you execute the migration plan and the resources or services selected, you will be prompted to enter additional information. The following tables list the migration plan actions for different services and the additional information that you must provide.
    - When you execute an Export Only Migration Plan on a Source, Siebel Migration exports the data for all the selected resources and creates a package zip file. The package zip file will be created in the Migration Package Location if that location was configured in the Siebel Migration Console, otherwise, the package zip file will be created in the migration folder under the file system folder on the source environment. This package can be used to import data to a Destination environment. You must take the package zip file from the source environment and place it in the Migration Package Location if that location is configured in the Siebel Management Console, otherwise, you must place the package zip file in the migration folder under the file System on the destination environment. Once the exported package is placed in the destination environment, you can run the Migration Plan as Destination Only and the Siebel Migration application imports the package file.

Note: If both the Siebel Migration application that connects to the source environment and the Siebel Migration application that connects to the target environment are using the same Migration Package Location, then you do not need to copy the package ZIP file in the migration folder under the file system on the destination environment.

- When you execute an Export Only Migration Plan, Siebel Migration creates a manifest file and exports the data for the selected resources. The manifest file contains the list of resources that were exported as part of this execution and the watermark filename.
- When you execute an Import Only Migration Plan using the package filename, Siebel Migration verifies that the resources selected in the migration plan matches the resources written in the manifest file. Siebel Migration also verifies that the watermark present in the watermark file and the manifest file matches the watermark on the connection where the user is importing. The execution proceeds only if both the resource and watermark matches.

Note: Watermarks are only matched for Incremental Runtime Repository and File Prepare and Deploy resources.

For more information about executing migration plans, see *Executing a Siebel Migration Plan*.

Note: From Siebel CRM 19.3 Update release onwards, the Design Repository Data Service is no longer supported by Siebel Migration application. Existing connections, created prior to 19.3 Update release, will continue to see the Design Repository Data Service but new migration plans using existing connections will not see the Design Repository Data Service. For existing migration plans that have the Design Repository Data Service selected, users will continue to see the Design Repository Data Service but will not be able to update the resource or execute the migration plan.

Schema Service Migration Plan Actions

The following table lists the migration plan actions for the Schema Service and the additional information that you must provide.

Migration Plan Action	User Prompt
Export Only Migration Plan	Package Filename
Import Only Migration Plan	The Import Only Migration Plan options are: • Schema Username • Schema Password • Package Filename • Database Encoding
Export and Import Migration Plan	The Export and Import Migration Plan options are: • Schema Username • Schema Password • Database Encoding

Runtime Repository Data Service Migration Plan Actions

The following table lists the migration plan actions for the Runtime Repository Data Service and the additional information that you must provide.

Note: If your Runtime Repository Data Service migration plan does not include the non-mandatory Schema Service, then you must migrate any schema changes before executing the plan.

Migration Plan Action	User Prompt
Export Only Migration Plan	Package Filename
Import Only Migration Plan	The Import Only Migration Plan options are: • Package Filename • Database Encoding
Export and Import Migration Plan	The Export and Import Migration Plan options are: • Database Encoding

Note: You must restart Siebel Server after execution of the Runtime Repository Data Service completes during migration. For more information, see *Executing a Siebel Migration Plan*.

Incremental Runtime Repository Data Service (IRR) Migration Plan Actions

The following table lists the migration plan actions for the Incremental Runtime Repository Data Service (IRR) and the additional information that you must provide.

Note: If your Incremental Runtime Repository Data Service migration plan does not include the non-mandatory Schema Service, then you must migrate any schema changes before executing the plan.

Migration Plan Action	User Prompt
Export Only Migration Plan	The Export Only Migration Plan options are: • Package Filename • Watermark Filename • Workspace Version
Import Only Migration Plan	The Import Only Migration Plan options are: • Package Filename • Database Encoding
Export and Import Migration Plan	The Export and Import Migration Plan options are: • Database Encoding

Migration Plan Action	User Prompt
	• Workspace Version

Application Workspace Data Service (Full Seed/LOV) Migration Plan Actions

Migration Plan Action	User Prompt
Export Only Migration Plan	Package Filename
Import Only Migration Plan	The Import Only Migration Plan options are: • Package Filename • Database Encoding
Export and Import Migration Plan	The Export and Import Migration Plan options are: • Database Encoding

Incremental Application Workspace Data Service (Incremental LOV/Seed) Migration Plan Actions

The following table lists the migration plan actions for the Incremental Application Workspace Data Service (Incremental LOV/Seed) and the additional information that you must provide.

Migration Plan Action	User Prompt
Export Only Migration Plan	The Export Only Migration Plan options are: • Package Filename • Watermark Filename
Import Only Migration Plan	Package Filename
Export and Import Migration Plan	None

Application Data Service Migration Plan Actions

The following table lists the migration plan actions for the Application Data Service and the additional information that you must provide.

Migration Plan Action	User Prompt
Export Only Migration Plan	Package Filename
Import Only Migration Plan	Package Filename

Migration Plan Action	User Prompt
Export and Import Migration Plan	None

Application Data Service with Transformation Migration Plan Actions

The following table lists the migration plan actions for the Application Data Service with Transformation and the additional information that you must provide.

Migration Plan Action	User Prompt
Export Only Migration Plan	Package Filename
Import Only Migration Plan	Package Filename
Export and Import Migration Plan	None

File Prepare & Deploy Migration Plan Actions

The following table lists the migration plan actions for File Prepare & Deploy and the additional information that you must provide.

Migration Plan Action	User Prompt
Export Only Migration Plan	The Export Only Migration Plan options are: • Package Filename • Watermark Filename
Import Only Migration Plan	Package Filename
Export and Import Migration Plan	None

Note: The Schema Password must be in Base 64 encoded format.

You can also use REST APIs to interact with the Siebel Migration Application. You must run the repository upgrade before you use REST APIs with the Siebel Migration Application. For more information about using REST APIs with the Siebel Migration Application, see *Using REST API with Siebel Migration Application*.

The following chapters deal with Siebel Migration:

- *Migration Planning Using Siebel Migration*
- *Data Preparation for Siebel Migration*
- *Data Migration Using Siebel Migration*

Roadmap for Planning a Migration with Siebel Migration

Environments: All environments

Platforms: All platforms.

This topic provides an overview of the recommended guidelines for planning and managing the data migration process.

Use the following steps to help plan your migration.

1. Install Siebel Migration. Siebel Migration is installed with Siebel Application Interface as part of the Siebel Enterprise Server software installation. For more information about installing Siebel Application Interface, see *Siebel Installation Guide for Microsoft Windows* .
2. Configure Siebel Migration with Siebel Management Console. Siebel Management Console is installed with Siebel Application Interface as part of the Siebel Enterprise Server software installation. Configuring Siebel Migration consists of the following tasks:

    a. Create the Siebel Migration Profile. The Siebel Migration Profile is created with the Siebel Management Console. For more information about creating the Siebel Migration profile, see *Siebel Installation Guide for Microsoft Windows* .

    Optionally, you can enter a Migration Package Location when you create a Siebel Migration Profile. You must give a network file share (NFS) path. If the Migration Package Location is configured in the Migration Profile in Siebel Management Console, the Export, Import and Generate Watermark actions use the Migration Package Location instead of using the migration folder in the file system. If the Migration Package Location field is provided, Siebel Migration copies the exported package file in the Migration Package Location and imports the specified package file from this Migration Package Location instead of the migration folder.

    b. Configure Siebel Migration. Siebel Management Console comes with a pre-seed profile. You can either edit the existing pre-seed profile, create a new profile, or create a new profile by cloning the pre-seed profile. For more information about configuring Siebel Migration, see *Siebel Installation Guide for Microsoft Windows* .

    c. Deploy the Siebel Migration Profile. The Siebel Migration Profile is deployed with the Siebel Management Console. For more information about deploying the Siebel Migration Profile, see *Siebel Installation Guide for Microsoft Windows* .
3. Configure Authentication for Siebel Migration. Siebel Migration supports Basic and SSO authentication:

    - Basic Authentication: Siebel REST services authenticate Siebel Migration users. Basic authentication internally uses the AuthenticateUser method from the Authentication Service For Migration RESTful Service to ensure whether the user has a permission to access the application.
    - SSO Authentication: The User is authenticated by the SSO server. Once the user is successfully authenticated, the request is forwarded to Siebel Migration. Siebel Migration uses the AuthenticateUser method from Authentication Service For Migration RESTful services to ensure whether a user has a permission to access Siebel Migration.

    The authentication type can be selected during the Siebel Migration profile creation in the Siebel Management Console. For more information, see *Siebel Installation Guide for Microsoft Windows* .

    The Siebel Migration invokes Authentication Service For Migration business service to authenticate a user. You must configure the Authentication Service for Migration business service to restrict the access to the Siebel Migration application by adding responsibilities to the AuthenticateUser method. For more information about configuring responsibilities and access control for business services, see *Siebel Security Guide* .

4. Configure REST Inbound in Siebel Management Console. Siebel Migration uses RESTful service. REST Authentication and REST Inbound Defaults are configured in Siebel Management Console as part of the Siebel Application Interface Profile. For more information about configuring REST Inbound in Siebel Management Console, see *Siebel REST API Guide* and *Siebel Installation Guide for Microsoft Windows* .
5. Setting Up the Siebel Environments. The source and target environments must have several Siebel Server components enabled. For more information about Siebel Server components, see *Siebel System Administration Guide* .

   The source Siebel environment must have the following Siebel Server components enabled.

   - Workflow Management Component Group - Workflow Process Manager
   - Enterprise Application Integration Component Group - EAI Object Manager
   - Siebel Remote Component Group - Synchronization Manager

   The target Siebel environment must have the following Siebel Server components enabled.

   - Workflow Management Component Group - Workflow Process Manager
   - Enterprise Application Integration Component Group - EAI Object Manager

   The username requirements for migration are that both source and target environments should have the same username and password.
6. Set the LDR_CNTRL environment variable for AIX environments. For AIX environments, you must set the value of the LDR_CNTRL environment variable to the following:

   ```
   LDR_CNTRL=LOADPUBLIC@MAXDATA=0x60000000
   ```

   For more information about the LDR_CNTRL environment value, see *Siebel Performance Tuning Guide* .
7. Generate the storage control file. Log into the target Siebel Server and navigate to the **<Siebel Server Home>/bin** directory. Execute the following command:

   ```
   trgxtrct /u <database username> /p <database password> /c <ODBC Data Source> /d <Table Owner> /o <output
    path>/storage.ctl /4 BP2 /7 <DB Encoding Schema>
   ```

   Once the storage control file is generated, copy the newly generated storage.ctl file to the following location:

   ```
   <Target Siebel File System path>/migration/control/storage.ctl
   ```
8. Prepare the migration data. Siebel Migration exposes Database Utilities that you can use to prepare your data for migration. For more information about preparing data for migration, see *Process of Preparing Siebel Application Data for Migration*.

   a. Create Application Data Migration Rules. Use Siebel Migration Rule Expressions Designer feature to create migration rules. For more information, see *Creating Migration Rules*.
   b. Create Application Deployment Manager projects. Use Siebel Application Deployment Manager to create Application Deployment projects. For more information about creating Application Deployment Manager projects, see *Siebel Application Deployment Manager Guide* .

> **Note:** To export the ADM Package on the source environment, you must create a Deployment Project with the Export to File flag set to TRUE in the Deployment Projects view in the Application Deployment Manager screen. However, the Export to File flag must not be set to TRUE for Export and Import together. In the Source environment, to export the ADM Project into a file, the EAIFileTransportFolders parameter should have the **<Siebel File System>\migration** folder configured. Otherwise, the export file fails due to a write permission issue. For more information about enabling write access for the EAI File Transport, see *Transports and Interfaces: Siebel Enterprise Application Integration* . To import the exported package on the Destination environment, the Deployment Project Name must be same as the Source Deployment Project Name or the import will fail.

c. Use Application Deployment Manager to transform data. Use Application Deployment Manager to create data maps to transform your migration data. For more information about transforming data with Application Deployment Manager, see *Process of Transforming Data with Siebel Application Deployment Manager* .

d. Customize Migration Process Orchestration. You can add new migration resources to the ResourceSequence.txt file. The Siebel Migration application reads through this file during the execution process and executes the services in a sequential order. You can customize the sequence of the migration process by modifying the ResourceSequence.txt file. For more information about customizing the migration process orchestration, see *About Migration Process Orchestration During the Siebel Migration Process*.

9. Use Siebel Migration. Use Siebel Migration to add connections to a migration, create migration plans, execute migration plans, and review migration history. For more information about using Siebel Migration, see *Data Migration Using Siebel Migration*.
10. Review Migration Log Files. Use Siebel Migration to review migration log files. For more information about migration log files, see *About the Siebel Migration Log Files*.

About Siebel Rules Expression Designer

Environments: All environments

Platforms: All platforms.

Use Siebel Rules Expression Designer to create the following transformation rule file and input file for your migration:

- Migration rule file. A migration rule file (.rul) contains data transformation rules that are executed during an export. On the target environment, the exported data file will contain the transformed data values.

  A rule file consists of a list of tables along with the columns for which a default value is specified. Only direct substitutions are allowed for a column. The column can be of any datatype.

  For a rule file, you can specify a WHERE clause which applies the transformation only to the records which satisfy the WHERE clause criteria. The WHERE clause can have filters only with the values.

  For Update Actions, the following are the transformation rules for rule file:
  - Supports only the equal (=) relational operator.
  - Supports only the AND logical operator.
  - You can add a WHERE clause to filter the data and apply the transformation rule only to those records matching the WHERE clause.
  - Supports multiple rules. Each rule will be delimited by the semicolon character.

    - If you use more than one field, then use an AND logical operator.

- Input file. An input file (.inp) is an input file for the selective export of data. Only the tables mentioned in the input file are exported. Record level filters can be applied based on the columns. In addition, a single WHERE clause is supported for every table in the Input file. A WHERE clause can consist of any number of columns combined using OR or AND operators.

  For Conditions, the following are the filter rules for input files:

    - Supports any relational operator that a database query would support. For example, = is equal, != or <> is not equal, > is for less than.
    - Only the AND logical operator is supported.

After the migration rules are created, use Siebel Rules Expression Designer to validate the new rules.

Related Topic

Creating Migration Rules

About Migration Process Orchestration During the Siebel Migration Process

Environments: All environments

Platforms: All platforms.

During the migration process, the Siebel Migration application executes a set of business service methods for each resource. The execution sequence of these service methods is defined by an external sequence text file, the ResourceSequence.txt file. The ResourceSequence.txt file lists the names of the Business Services for each resource and the supported methods for Export, Import, and Status. The ResourceSequence.txt file defines the order of migration execution.

The Siebel Migration application reads through this file during the execution process and executes the services in a sequential order.

The migration executes a resource only if the resource is present in the ResourceSequence.txt file. If the resource is not defined in the ResourceSequence.txt file, the resource will not appear in the Siebel Migration and will not be executed.

New migration resources can be added to the ResourceSequence.txt file in the required execution order. New business services should adhere to the following standards:

1. The business service must support methods for Import, Export, and GetStatus.
2. Any extra methods or extra Input or Output to these methods are considered as exceptions and requires handling in the Siebel Migration code before inclusion in sequence file.
3. If the methods are Sync methods that do not support GetStatus, then the execution will proceed based on the HTTP response and the output parameters will not be parsed. If parsing is required for the output parameters, then it should be handled in the Siebel Migration code.
4. Oracle recommends that you do not modify the existing data in the ResourceSequence.txt.

Related Topic

Customizing Siebel Migration Execution and Resource Sequencing

About the Process Flow for Migration Resources

The orchestration.json file defines the migration process flow for all the migration resources. The file has the following sections:

- PreProcessing_Export: This section contains the steps to be executed before the resources are exported.
- PostProcessing_Export: This section contains the (user defined) steps to be executed after the resources are exported.
- PreProcessing_Import: This section contains the steps to be executed before the resources are imported.
- PostProcessing_Import: This section contains the steps to be executed after the resources are imported.
- Export: This section contains the resources and the corresponding steps to be exported.
- Import: This section contains the resources and corresponding steps to be imported.

Note: If you made any changes to the ResourceSequence.txt file, then those changes must be added to the orchestration.json file after you complete the upgrade process.

Each Migration resource has a section in the orchestration.json file that describes its process flow. The process flow is made up of a number of sub-processes or steps. Each step in the migration process flow has the following attributes:

- ResType: Specifies the type of resource for migration, such as, pre or postprocessing, Business Service Export, or Import. The value for ResType is Process. This attribute applies only for the PreProcessing_Export, PostProcessing_Export, PreProcessing_Import, and PostProcessing_Import resources.
- PlanType: Specifies the plan type for migration. Possible values are:
  - [“Export”]: This applies for Export Only Asynchronous Migration Execution.
  - [“Import”]: This applies for Import Only Asynchronous Migration Execution.
  - [“Export-Import”]: This applies only for Export and Import Synchronous Migration.
- Business Service. The name of the Siebel Business Service.
- Step Name: The name of the step in the Resource.
- ApplyToResource: Specifies the actual resource for migration. A valid value for ApplyToResource is one or more comma-separated Business Service names, as defined in the Import or Export sections. If this attribute has a value defined, then this step is executed only for the business services mentioned in the Import and Export sections. If this attribute is empty, then this step is executed for all business services. This attribute applies only for the PreProcessing_Export, PostProcessing_Export, PreProcessing_Import, and PostProcessing_Import resources.
- Method. The Siebel Business Service method.
- Location. The location where the Siebel Business Service will be executed. Values are either Source or Target.
- LogMethod: The method used to obtain the logs for the method.
- InArg. The Siebel Business Service input arguments.
- OutArg. The Siebel Business Service output arguments.
- Async. This section contains details if the method is Asynchronous.
  - Async Business Service. The Siebel Business Service Name

- Async Method. The Siebel Business Service method.

An example of the step sequence in a migration process flow from the orchestration.json file follows:

```
"Steps": [
 {
 "ResType": "Process",
 "PlanType": ["Export"],
 "Business Service": "Application Migration Utility Service",
 "StepName": "GetWatermarkFromFile",
 "ApplyToResource": ["Migration Schema Service",
 "Migration Incremental Application Workspace Data Service",
 "Migration Incremental Runtime Repository Data Service"],
 "Method": "GetWatermarks",
 "Location": "Source",
 "LogMethod": "GetStatus",
 "InArg": ["sharedPath", "filename", "migrationid"],
 "OutArg": ["watermark"],
 "Async": {}
 ]
```

For more information about the (preprocessing and postprocessing) operations involved and methods invoked during the execution of a migration plan, see *Executing a Siebel Migration Plan*.

About the Siebel Migration Log Files

Environments: All environments

Platforms: All platforms.

Siebel Migration creates log files that provide detailed information on the migration processes, including whether the migration succeeded or failed.

The Siebel Migration creates the following types of log files:

- Migration log file. The migration log file contains all the migration events, such as errors and warnings, for the migration application.

  The Siebel Migration Log file is located in the following directory:

  <Application Interface Install Home>\applicationcontainer\logs\migration.log

- Business Service log file. The Business Service log file is created in the EAI Object Manager log file when a Business Service is executed.

How to Locate Siebel Migration Resource Log Files

Siebel Migration resource files are stored in the following location:

Windows: SIEBEL_FILESYSTEM/migration/<migration id>

where:

- SIEBEL_FILESYSTEM: Indicates the location of the Siebel file system.
  - migration: Indicates the location of all the Siebel Migration files.

- inp: Indicates the input file generated by the Rule Expression Designer
- rul: Indicates the rule file generated by the Rule Expression Designer.
- <migration id>: The ID generated by the Siebel Migration application when the user executes the migration plan.
  - inp: Contains a copy of the input file used for a migration execution.
  - rul: Contains a copy of the rule file used for a migration execution.
  - dat: Contains all the data files generated by the export or moved from the source to target for import.
  - log: Contains the log file generated by the export or import.
  - schema: Contains the schema file generated schema export or moved from source for import.
  - other: Contains the Web artifacts or file system artifacts for export and moved from the source for import.

About REST API Used for Migration Discovery and Execution

Environments: All environments

Platforms: All platforms.

REST API requests are used for migration resource discovery and for migrating data from the source environment by exporting the data, transferring the data to the target environment, and importing the data into the target environment.

Siebel Migration includes the migration discovery service that is available to assist with discovering resources available for migration. The discovered services are listed in the Siebel Migration in the sequence in which they are executed during the migration process.

While creating a Siebel Migration plan, you can choose one or more services that are available. When you execute the Siebel Migration plan, those services are invoked to migrate the data.

The following table lists the migration resources that are available in the Siebel Migration.

Note: If your Runtime Repository Data Service or Incremental Runtime Repository Data Service migration plan does not include the non-mandatory Schema Service, then you must migrate any schema changes before executing the plan.

Migration Service	Description	Supported Methods
Schema Service	Migrates the physical Siebel schema from the source environment to the target environment. When you use this service, the Siebel Migration prompts you to enter the Table Owner User Name, the Table Owner Password, and Database Encoding.	• Export • Import • GetWatermark • IsSchemaChanged • GetStatus
Runtime Repository Data Service	Migrates only the Runtime Repository from the source environment to the target environment.	• GetRRInfo • GetWatermark

Migration Service	Description	Supported Methods
	The migrated repository is named Migrated Repository in the target environment. The user must select the name and version of the Workspace Branch. The default version will be the latest version. The Application Workspace Data Service is typically run along with the Runtime Repository Service. After the Siebel Migration is complete, you must change the Migrated Repository to Siebel Repository in the S_REPOSITORY table.	• Export • Import • DBCheck • GetStatus
Application Workspace Data Service (Full Seed / LOV)	Migrates the LOV records from the source environment to the target environment. List of Values (LOV) is workspace-enabled. This option allows you to migrate all LOV records added to the workspace, which you selected when creating the migration plan. You must run the Runtime Repository Service along with the Application Workspace Data Service. **Note:** The Application Workspace Data Service and the Runtime Repository Data Service do the same thing. The services selected are the same for both migrations.	• GetSeedCopyWatermark • GetFullSeedWatermark • SeedCopyExport • GetStatus • SeedCopyImport • FullSeedExport • FullSeedImport
Incremental Runtime Repository Data Service	Identifies the version of the repository data that was previously migrated. This service takes all the changes from the previously migrated version and the latest version and migrates the data to the target environment.	• Export • Import • GetWatermark • DBCheck • GetStatus
Incremental Application Workspace Data Service	Identifies the version that was previously migrated. This service takes all the changes from the previously migrated version to the latest version and migrates them to the target environment.	• GetWatermark • Export • Import • GetStatus
Application Data Service	This service migrates the data from the source environment to the target environment based on the tables listed in the **`datamig.inp`** file on the source environment. It is recommended that you review the tables configured in **`datamig.inp`** to ensure that it includes the correct tables.	• Export • Import • GetStatus
Application Data Service With Transformation	Migrates the data from the source environment to the target environment based on the tables listed in the **`datamig.inp`** file on the source environment. While exporting the data, this service uses the rule defined in the **`datamig.rul`** file and performs the transformation. The transformed data will be migrated to the target environment.	• Export • Import • GetStatus

Migration Service	Description	Supported Methods
	It is recommended that you review the tables configured in **`datamig.inp`** and **`datamig.rul`** to ensure that they include the correct tables.	
File Prepare And Deploy Service	Identifies all the new or modified files and migrates the files to the target environment. On the Target environment, the File Prepare And Deploy Service transfers the modified or new files to each Siebel Application Interface node defined in Siebel Management Console (SMC). This service keeps track of the files that are migrated for each target environment. The next time that the user runs this service, the service will check the modified files or newly created files from the previous migration. This service migrates the file artifacts from Siebel Application Interface and the file system. The File Prepare and Deploy Service reads the checksum values for all the web artifact files from the watermark file. The File Prepare and Deploy Service compares the checksum of the files present in the source web artifacts path. The File Prepare and Deploy Service takes files whose checksum does not match and generates an export package. The files that are not included in the watermark file are included in the export package. While importing the export package on the target environment, the existing files will be overwritten.	• Prepare • Deploy • GetStatus

Related Topic

REST API References for Migration Services

21 Data Preparation for Siebel Migration

Data Preparation for Siebel Migration

This chapter provides initial preparatory information for migrating your data with Siebel Migration. This chapter includes the following topics:

- *Process of Preparing Siebel Application Data for Migration*
- *Creating Migration Rules*
- *Process of Transforming Data with Siebel Application Deployment Manager*
- *Customizing Siebel Migration Execution and Resource Sequencing*
- *Setting Up File Prepare and Deploy*

Process of Preparing Siebel Application Data for Migration

Environments: All environments

Before you use the Siebel Migration to migrate your data, you must perform the following tasks:

1. Configure and deploy your Migration Profile using Siebel Management Console. For more information about using Siebel Management Console to configure and deploy your Migration Profile, see *Siebel Installation Guide for Microsoft Windows* .
2. Create Migration Rules. For more information about creating migration rules, see *Creating Migration Rules*.
3. Create ADM Data Maps to transform the data with Application Deployment Manager. For more information about creating ADM Data Maps to transform the data with Application Deployment Manager, see *Process of Transforming Data with Siebel Application Deployment Manager* .
4. Customize Siebel Migration Execution and Resource Sequencing. For more information about customizing Siebel Migration Server Execution and Resource Sequencing, see *Customizing Siebel Migration Execution and Resource Sequencing*.
5. Setup File Prepare and Deploy. For more information, see *Setting Up File Prepare and Deploy*.

Creating Migration Rules

For migration, the Migration Input (INP) file and the Transformation (RUL) file are the input files required to do the initial data export and import of data. For more information about the INP and RUL files, see *About Siebel Rules Expression Designer*.

After you create your migration rules and export them, the datamig.inp file is generated and the datamig.rule file is generated only if you select an Update Action during the process of creating your rules with the Expression Designer.

This procedure describes how to create a migration rule using the Migration Rules Expressions Designer.

To create a migration rule

1. Navigate to Site Map, then Administration - Application, then Migration Rule.
2. In the Migration Rule Expressions applet, click New.
3. Click the icon next to the Table column.
4. Select the table to migrate the data from the source environment to the target environment.
5. To migrate only selective data from the table, perform the following steps:
    a. Click the icon next to the Condition column.
    b. In the Expression Designer, the Table Category is automatically selected.
    c. Select items in Sub Categories. Column names appear in Elements that match the selected subcategory.
    d. Choose the appropriate column name in Elements and click Add Element.
    e. Enter a value to filter the data.
    f. Click Validate and verify there are no syntax error in the Expression.
    g. Click Save.
6. To transform only the data on selective columns when migrating the data from the source environment to the target environment, perform the following steps:
    a. Click the icon next to the Update Action field.
    b. Select the appropriate column and the value.

    The values assigned to the columns chosen will be updated on the target environment regardless of the value specified in the source environment.
7. Select the Select Flag.
8. Click Save.
9. To add another table, repeat steps 1-8.
10. Once you add the records for all the tables that you wanted, click Export.

    Once the data is exported, the datamig.inp file and the datamig.rul file are generated.

Process of Transforming Data with Siebel Application Deployment Manager

Application Deployment Manager (ADM) is a Siebel tool that you can use to deploy data from the source environment to the target environments. For more information about Application Deployment Manager, see *Siebel Application Deployment Manager Guide* .

For your data migration, you can use ADM to:

- Create ADM Projects that can be migrated by Siebel Migration. For more information about creating ADM projects, see Application Deployment Manager Guide.

  When you create your ADM Project, you can configure the Sequence Number. The Sequence Number is populated in the Project Items. ADM migrates the Project Items in the sequence order according to the value of the Sequence Number parameter. If the sequence number is not provided, ADM will follow the default behavior.
- Create an ADM Data Map to transform data before importing into the target environment. For more information about creating ADM maps, see *Creating an ADM Data Map*.

- Associate your data map to your project item. For more information about associating data maps to ADM projects, see *Associating a Data Map to a Project Item*.

Creating an ADM Data Map

This topic provides procedures for creating an ADM Data Map.

This task is a step in *Process of Preparing Siebel Application Data for Migration*.

To create an ADM data map

1. Navigate to the Site Map, Administration - Integration, and then Data Map Editor.
2. In the Data Map Editor applet, create a new record.
3. Enter a Name for the data map.
4. Choose the Integration Object that is used in the Data Type for both the Source Object Name and the Target Object Name.
5. Click Auto-Map to populate the Integration Component Map and Integration Field Map fields.
6. In the Integration Component Map applet, select the Integration Component to transform the data.
7. In the Integration Field Map applet, select the Field to transform the data.
8. In the Source Expression column, enter the expression to transform the data. For more information about supported expressions, see *Siebel Application Deployment Manager Guide* .
9. Click Save.

Associating a Data Map to a Project Item

This topic provides procedures for associating an ADM Data Map to a Project Item.

This task is a step in *Process of Preparing Siebel Application Data for Migration*.

To associate a Data Map to a project item

1. Navigate to the Site Map, Application Deployment Manager, and then Deployment Projects.
2. Choose an existing Deployment Project or create a new Deployment Project and fill the necessary details. To create a new Deployment Project, see *Siebel Application Deployment Manager Guide* .
3. Choose an existing Project Item or create a new Project Item and fill the necessary details. To create a new Project Item, see *Siebel Application Deployment Manager Guide* .
4. Click the Data Map column on the Project Items applet and select the Data Map that will be used to transform the data.
5. Click Save.

Customizing Siebel Migration Execution and Resource Sequencing

Siebel Migration executes a set of business service methods for each migration resource. The execution sequence of these methods is defined by an external sequence text file, ResourceSequence.txt.

The ResourceSequence.txt file is located in the following directory: <Application Interface Home>\applicationcontainer \webapps\siebel\WEB-INF.

Siebel Migration reads through this file during the execution process and executes the services in a sequential order. The ResourceSequence.txt file lists the names of the Business Services for each resource and the supported methods for Export, Import and Status.

You can customize Siebel Migration execution and resource sequencing by adding business services to the ResourceSequence.txt file. For more information about guidelines for adding business services to the ResourceSequence.txt file, see *About Migration Process Orchestration During the Siebel Migration Process*.

In the ResourceSequence.txt file, business services have the following structure:

```
<Service Name>,<Method:Source/Target:Sync\Async:FT:trackingIdMethod:{Watermark
Method Name|Source\Target|InputY\N}>,<Method:Source/
Target:Sync\Async:FT:trackingId:{Watermark MethodName|Source\Target|Input
Y\N}>,GetStatusMethod
```

Where:

- <Service Name> indicates the name of the business service.
- <Method> indicates the method name.
- Source\Target indicates whether the method will be executed on the migration source or target.
- Sync\Async indicates whether the method is sync or async.
- <FT> indicates whether a file transfer is required Y\N.
- trackingIdMethod indicates the MethodName whose trackingId should be the input for the GetStatus and Import methods.
- Watermark details:
  - Watermark Method Name
  - Source\Target
  - Input required Y\N
- GetStatusMethod indicates the status method for async methods.

Note: Existing business service entries and sequence must not be modified.

File Transfer Service is a another service which is not part of Migration discovery.

The details of the File Transfer Service are as follows:

```
[File Transfer Resource]

Dock Migration File Transfer Service,GetConnectString,ImportFile,GetStatus
```

Example of adding a new business service in the resource sequence file:

```
Migration Schema
Service,Export:Source:Async:::Y,Import:Target:Async:Export::N,GetStatus
```

In this example:

Business Service Name is Migration Schema Service with 2 async methods. Export method should be run on Source and requires File Transfer. Import method should be run on Target and does not require File Transfer. GetStatus method is used to poll the status of these methods.

For sync methods, GetStatusMethod is not required. Execution will continue based on the HTTP response code.

Setting Up File Prepare and Deploy

Siebel Migration File Prepare and Deploy service does the following:

- Migrates file artifacts from the source environment to the target environment.
- Migrates only file artifacts from Siebel Application Interface (AI) and the Siebel File System.
- If the target environment has multiple Application Interface nodes, it migrates all file artifacts to all the Application Interface nodes.
- Supports incremental file Migration (migrates only new or modified files).
- Uses the Checksum utility to check whether the file is modified or not.

The list of directories considered for Migration are configured in the filemig_config.properties file. The filemig_config.properties file is located in the following directory:

```
<Application Interface Home>\applicationcontainer\webapps
```

The filemig_config.properties file:

- Contains three properties:
  - inclusion-dir
  - exclude-dir
  - exclude-extension
- Considers all the files from the list of directories provided in the inclusion-dir property.
- Ignores all the directories mentioned in the exclude-dir from the include-dir only.
- Ignores the files whose extensions are part of exclude-extension property

Sample filemig_config.properties file:

```
inclusion-dir=%ORACLE_HOME%/applicationcontainer/webapps/siebel/files, %FS_HOME%/
att
exclude-dir=%ORACLE_HOME%/applicationcontainer/webapps/siebel/files/3rdParty
exclude-extension=xps, pdf
```

Where:

- %ORACLE_HOME% is the AI installation directory.
- %FS_HOME% is the Siebel File System Path.

You can add multiple directories separated by a comma.

22 Data Migration Using Siebel Migration

Data Migration Using Siebel Migration

This chapter provides guidelines for performing a migration with Siebel Migration. This chapter includes the following topics:

- *Before You Begin Migrating with Siebel Migration*
- *Process of Using Siebel Migration to Migrate Data*
- *Asynchronous Migration Using Siebel Migration*
- *Incremental Migration from a Development to a Production Environment Without Using Siebel Migration*
- *Full RR Migration Without Using Siebel Migration*
- *Migrating Siebel 18.8 Update or Later Release Repository Changes from a Development to a Production Environment*
- *Activating Workflows and Tasks in the Production Environment After Full Migration*
- *Migrating Configuration Data and Incremental Changes*
- *About Migrating User Preferences*

Before You Begin Migrating with Siebel Migration

Before you begin using Siebel Migration:

1. Review and follow the tasks listed in *Roadmap for Planning a Migration with Siebel Migration*
2. Start Siebel Migration with the following URL format:

   ```
   https://<hostname>:<port>/siebel/migration
   ```

3. Back up your target database before starting to migrate repository or data using Siebel Migration

Process of Using Siebel Migration to Migrate Data

This procedure describes how use Siebel Migration for migration tasks. Siebel Migration tasks include:

1. Creating Connections. For information on creating connections, see *Creating a Connection*.
2. Generating Watermarks. For more information on creating watermarks, see *Generating a Watermark*
3. Creating Migration Plans. For more information on creating migration plans, see *Creating a Migration Plan*.
4. Executing Migration Plans. For more information on executing migration plans, see *Executing a Siebel Migration Plan*.
5. Reviewing Migration History. For more information about reviewing migration log history, see *Viewing Migration History and Log Files*.

Creating a Connection

Use Siebel Migration to create a connection, which registers a Siebel environment to the Siebel Migration. Each connection represents on Siebel environment and numerous connections can be created for a migration.

This procedure describes how use Siebel Migration to create an environment connection for a migration.

This task is a step in *Process of Using Siebel Migration to Migrate Data*.

To create a connection

1. In Siebel Migration, navigate to the Connection Tab.
2. Click New Connection.
3. Enter a Name for the new connection.
4. Enter a Valid Endpoint for the connection.

   The valid REST Endpoint format is the following:

   ```
   https://<hostname>:<port>/siebel/v1.0
   ```

5. Verify the status of connection. Statuses include:
   - Green: Connection Alive
   - Red: Connection Not Alive
   - Grey: Connection Unknown

Generating a Watermark

Use Siebel Migration to create a watermark. A watermark is useful to see the data that was previously migrated to your database environment. Based on the previously migrated data, you can determine the correct incremental version that you need to migrate.

Siebel Migration obtains the current repository watermark from the Siebel Server. Siebel Migration generates the watermark for the Web artifacts file from the Siebel Application Interface folder and then writes the watermark file into the filename provided by the user in the migration folder under the file system or Shared Package Location if provided. The connection that points to the Siebel Server must be a Runtime Repository environment. If the connection points to a development environment, then Siebel Migration throws an error.

This task is a step in *Process of Using Siebel Migration to Migrate Data*.

To Generate a Watermark

1. In Siebel Migration, navigate to the Connection Tab.
2. Click the Watermark icon.
3. Enter the Watermark file name.
4. Click OK.

   After creating the watermark file, a window displays a success message with the path and filename for the watermark file.

Creating a Migration Plan

When you create a Migration Plan, you must select connections, including the source environment and the target environment. When you run the Migration Plan, Siebel Migration exports the migration data from the Source environment and imports it into the Target environment.

When you create the Migration plan, you must select the resources that you want to migrate as part of this migration plan. In Siebel Migration, you can select Database Utilities, ADM Projects or File Prepare and Deploy services.

This procedure describes how use Siebel Migration to create a migration plan for a migration.

This task is a step in *Process of Using Siebel Migration to Migrate Data*.

To create a migration plan

1. In Siebel Migration, navigate to the Migration Plan tab.
2. Click New Migration.
3. Enter the Name of the Migration Plan and Description.
4. Select and move the Source Connection & Target Connection onto the Flow Chart.

   An intersection of Migration Resources (between Source & Target) for Database Utilities and only from Source for ADM Projects will be displayed.
5. Select the Migration Resource that will be executed as part of the Migration Plan.

Siebel Migration Plan Dependencies

The Siebel Migration Discovery services that appear in Siebel Migration depend on the selections that you make. The following table outlines the Siebel Migration plan dependencies.

If You Select this Resource...	Read Only Resources	Auto Selected Resources
Application Workspace Data Service	• Incremental Repository Service • Incremental Application Workspace Data Service	• Runtime Repository Service
Incremental Application Workspace Data Service	• Runtime Repository Data Service • Application Workspace Data Service	• None
Runtime Repository Data Service	• Incremental Repository Service • Incremental Application Workspace Data Service	• Application Workspace Data Service
Incremental Runtime Repository Data Service	• Runtime Repository Service • Application Workspace Data Service	• None

Executing a Siebel Migration Plan

This procedure describes how to use Siebel Migration to execute a migration plan for a migration.

This task is a step in *Process of Using Siebel Migration to Migrate Data*.

Executing a migration plan

1. In Siebel Migration, navigate to the Execution tab.
2. Identify the Migration Plan to be executed.
3. Click Play next to the Migration Plan to be executed.

   The Execution Details window displays. Depending on the selections you made when you created your Migration Plan, you will see one of the following prompts in the Execution Details window:
   - Database Encoding. You will be prompted for database encoding information if you created your Migration Plan as Import only with a Schema Service selected or if your Migration Plan was created for both Source and Target with a Schema Service selected.
   - Workspace Version Selection. You will be prompted for the Workspace version if you run the Incremental Runtime Repository service.
4. For the Database Encoding Execution Details window, enter the following information:

   a. Enter the User ID. The User ID is the Username for the Target table owner.
   b. Enter the Password for the Target table owner.
   c. Select one of the following Database Encoding options:

      - UNICODE Database. This option is selected by default.
      - NON-UNICODE Database. If you are using a NON-UNICODE Database, then you must select the NON-UNICODE Database option.

   d. Enter the Workspace Version Number. The Workspace Version Number is the range between the next version of the Target and the latest available version on the Source.

      The Workspace Branch Name is a read only field and is populated based on the Workspace Version Number that you enter.

      Note: If the Migration Plan that you are executing has both the Source and Target selected, then the Workspace Branch Name and Workspace Version fields are automatically populated.

   e. Click OK.
5. If you selected the option to run the Incremental Runtime Repository service, the Execution Details window prompts you to enter the following information:

   a. Enter the User ID for the Target Table Owner.
   b. Enter the Password for the Target Table Owner.
   c. Enter the Package Filename (.zip file).
   d. Enter the Watermark (.txt file).
   e. Click the Get Workspace Details button to populate the Workspace Branch Name and Workspace Version fields.
   f. Click OK.

6. While the Migration Plan is running, click Refresh to refresh the Migration Plan or get status for a migration task.
7. While the Migration Plan is running, click Log to view log details for a migration task.

Note: If the Schema Service is part of the Migration Plan, then the application prompts you for Target Database Schema Owner credentials.

After Execution of Runtime Repository Data Service Completes

After execution of the Runtime Repository Data Service completes, you must perform the following steps in the target environment:

1. Rename the Migrated Repository to Siebel Repository, and then restart the Siebel Server - for more information, see Step 10 in *Full RR Migration Without Using Siebel Migration*.
2. Activate workflow tasks by running ActivateWorkflowsTasks - for more information, see Step 11 in *Full RR Migration Without Using Siebel Migration*.

Preprocessing and Postprocessing for Migration Execution

The operations involved during the preprocessing and postprocessing of any migration plan execution include for example, Package, Unpackage, Transfer the File (for Sync migration), Create Manifest, GetConnectString, and so on. A number of preprocessing and postprocessing methods are invoked during the execution of a migration plan. The following table describes these methods, which are in the orchestration.json file.

Resource	Operation	Purpose	Applies to Resource	Mode
PreProcessing_Export	GetWatermarks	Gets the watermark details from the watermark file specified during migration execution.	Migration Schema Service. Migration Incremental Application Workspace Data Service. Migration Incremental Runtime Repository Data Service.	Asynchronous
PreProcessing_Export	GetWaterMark	Gets the watermark details by invoking the REST request to the Target.	Migration Schema Service. Migration Incremental Application Workspace Data Service. Migration Incremental Runtime Repository Data Service.	Synchronous
PostProcessing_Export	CreateManifest	Creates the manifest file, which includes all the details of the resource being exported. The manifest file is used to validate credentials during the asynchronous migration import.	All services.	Synchronous Asynchronous
PostProcessing_Export	preparePackage	Creates a compressed package file that contains all the exported resources.	All services.	Synchronous Asynchronous

Resource	Operation	Purpose	Applies to Resource	Mode
PostProcessing_Export	GetConnectString	Gets the SynchMgr Object Manager Connect String from Source. This will be used by ImportFile to transfer the file from Source to Target. This operation applies only if the Migration Package Location in the migration profile in Siebel Management Console is not specified.	All services except ADM.	Synchronous
PostProcessing_Export	ImportFile	Transfers the package from Source to Target. This operation applies only if the Migration Package Location in the migration profile in Siebel Mobile Console is not specified.	All services except ADM.	Synchronous
PreProcessing_Import	unPackage	Decompresses the exported package.	All services.	Synchronous

Viewing Migration History and Log Files

You can use Siebel Migration to view migration history and log files for a migration task. You can also view information such as status, Archive ID, and the filename for the migration package.

This task is a step in *Process of Using Siebel Migration to Migrate Data*.

To view migration history and log files

1. In Siebel Migration, navigate to the History or Execution tab.
2. Select or click the plus (+) icon next to the migration task to show the log generated for the operation.

   For example, if you select the Incremental Runtime Repository Migration task, the task expands to show the Resource and Operation.
3. Click Log next to an operation to view the log details for that migration operation.

   From Siebel CRM 19.7 Update onwards, you can review logs for the following Siebel Migration resource operations:

   - Runtime Repository Data Service: GetWatermark operation.
   - Application Workspace Data Service: GetFullSeedWatermark and GetSeedCopyWatermark operations.
   - Incremental Runtime Repository Data Service: ActivateWorkflowsTasks operation.
   - Incremental Application Workspace Data Service: InvalidateSeedCaches operation.
   - File Prepare and Deploy: generateWatermark, readwatermarkfile, writewatermarkfile operations.

Reviewing Execution Log Messages

Log messages typically record the Archive Id, Resource name, and the Operation name in the log file along with the log message. After an Archive Id is generated, all corresponding log messages will contain the Archive Id.

Log files are generated by the Siebel Migration application but they are not visible in the migration UI. If errors are encountered during migration execution, then you can review the migration.log file located in the migration server's Application Interface application container's **\logs** folder to determine why the migration failed and to decide how to resolve the issue.

- To find and review the logs generated for a particular migration execution, then search for the appropriate Archive Id in the migration.log file.
- To find and review the logs generated by a specific Resource under an Archive Id, then search for the Resource name in the migration.log file.
- To find and review the logs generated by a specific Operation under a Resource Name, then search for the Operation in the migration.log file.

Note: Migration logs are stored in the migration server's application container's (Apache Tomcat) log location: **<AI_ROOT>\applicationcontainer\logs**.

Once Siebel Migration starts executing operations that are part of a resource in the Migration Plan, all resulting log messages will contain the appropriate Archive Id, Resource name, and Operation name as shown in the following examples.

Example Log 1: Archive Id is in Brackets

```
[DEBUG] 2018-10-25 04:41:24.203 [Thread-33] Migration - com.siebel.migration.server.Transaction:callExecutor
 [88-1VBW0R] Exporting resource {"name":"Migration Schema Service","URI":["https:\/\/
slc04ovj.us.oracle.com:9001\/siebel\/v1.0"],"Source":"https:\/\/slc04ovj.us.oracle.com:9001\/
siebel\/v1.0","Target":"https:\/\/slc07fnj.us.oracle.com:9001\/siebel\/v1.0","Steps":
[{"StepName":"Export","Business Service":"Migration Schema Service","Method":"Export","InArg":
["migrationid"],"OutArg":["trackingid"],"Location":"Source","Async":{"Async Business Service":"Migration
 Schema Service","Async Method":"GetStatus","Async InArg":["migrationid","trackingid"],"Async
 OutArg":["error","getlog","log","status"]}}],"TransId":"88-1VBW0R","rowId":
["88-1VBW0S"],"Watermark":"","ActivationDate":""}
[DEBUG] 2018-10-25 04:41:24.212 [Thread-33] Migration -
 com.siebel.migration.server.ProcessFlow:<init>[88-1VBW0R] Entered process flow for resource : Migration
 Schema Service
```

Example Log 2: Archive Id and Resource Name are in Brackets

```
[DEBUG] 2018-10-25 04:41:24.214 [pool-4-thread-2] Migration -
 com.siebel.migration.server.ProcessFlow:getResources [88-1VBW0R] [Migration Runtime Repository Data
 Service] Entered get resources for resource : Migration Runtime Repository Data Service
[DEBUG] 2018-10-25 04:41:24.216 [pool-4-thread-1] Migration -
 com.siebel.migration.server.ProcessFlow:getResources [88-1VBW0R] [Migration Schema Service] Entered get
 resources for resource : Migration Schema Service
[DEBUG] 2018-10-25 04:41:24.216 [pool-4-thread-3] Migration -
 com.siebel.migration.server.ProcessFlow:getResources [88-1VBW0R] [Migration Application Workspace Data
 Service] Entered get resources for resource : Migration Application Workspace Data Service
```

Example Log 3: Archive Id, Resource Name and Operation are in Brackets

```
[DEBUG] 2018-10-25 04:41:24.234 [pool-4-thread-2] Migration -
 com.siebel.migration.server.Transaction:invokeRestCall [88-1VBW0R] [Migration Runtime Repository Data
 Service] [GetWatermark] Input PostData : {"body":{"workspace":"MAIN","language":"ENU","version":"0"}}
[DEBUG] 2018-10-25 04:41:24.251 [pool-4-thread-3] Migration -
 com.siebel.migration.server.ProcessFlow:getResources [88-1VBW0R] [Migration Application Workspace
 Data Service] [GetFullSeedWatermark] Argument Map constructed : {migrationid=88-1VBW0R, password=,
```

```
workspace=MAIN, fileName=Migration_88-1VBW0R.txt, filename=, watermark=, isUnicodeDatabase=Y, sharedPath=,
language=ENU, ActivationDate=, version=0, username=}
```

Asynchronous Migration Using Siebel Migration

You can use Siebel Migration to plan and carry out an asynchronous migration. An asynchronous migration essentially involves creating an asynchronous migration plan for the source environment and another (separate) asynchronous migration plan for the target environment. Migration activities that must be completed on the source environment can then be carried out independently of the migration activities that must be completed on the target environment. For asynchronous migration to work, both source and target environments must be in a Repository Upgraded state; otherwise migration execution will be performed in synchronous mode.

According to the source and target environment state, the following table outlines the supported migration scenarios. These migration scenarios are supported. using either the Siebel Migration application or REST API, in Siebel CRM 18.11 Update and later releases.

Source and Target State	Export Only Migration	Import Only Migration	Export and Import Migration
Source is Repository Upgraded, Target is not.	Supported	Not Supported	Supported
Both Source and Target are Repository Upgraded.	Supported	Supported	Supported
Source is not Repository Upgraded, Target is Upgraded	Not Supported	Not Applicable	Supported

Note: A Repository Upgraded state means that the environment (repository and schema) has been upgraded to Siebel 18.8 Update or later release of Siebel CRM.

CAUTION: It is recommended that you back up your target database before starting to migrate repository or data using Siebel Migration.

The steps to perform an asynchronous migration using Siebel Migration are outlined in the following procedure and involve the following:

- Generating a watermark if required.
- Creating and executing an export only migration plan to export resources from the source environment.
- Creating and executing an import only migration plan to import (exported) resources to the target environment.

Note: If your Runtime Repository Data Service or Incremental Runtime Repository Data Service migration plan does not include the non-mandatory Schema Service, then you must migrate any schema changes before executing the plan.

To perform an asynchronous migration using Siebel Migration

1. Generate a watermark if required. To export an Incremental Runtime Repository, you must get the Watermark file from the target environment where you are planning to import the exported data.

   Note: You must ensure that the watermark you use is the latest watermark. If you export the repository using an old watermark, then the import will fail with an error message similar to the following: Watermark does not match the exported resources watermark.

   a. Navigate to the Connections tab in Siebel Migration.
   b. Click the Watermark icon next to the target connection (that is, the target environment where you want to import the exported data).
   c. In the dialog that appears, enter the Watermark file name and click OK.

      If the Migration Package Location is configured on the Migration Profile in Siebel Management Console, then the Watermark file is generated in the Migration Package Location path. Otherwise the Watermark file is generated in the `<File System>\migration` folder on the selected connection.
2. Create an export only migration plan on the source environment.

   a. Navigate to the Migration Plan tab in Siebel Migration.
   b. Click New Migration and then enter the Name of the migration plan and a Description.
   c. Select and move the connection, where you want to export data from, to the Source field.
   d. Select the resources that you want to export.
   e. Save the source migration plan.
3. Create an import only migration plan on the target environment.

   a. Navigate to the Migration Plan tab in Siebel Migration.
   b. Click New Migration and then enter the Name of the migration plan and a Description.
   c. Select and move the connection, where you want to import data to, to the Destination field.
   d. Select the resources you want to import.
   e. Save the target migration plan.
4. Execute the export only migration plan on the source environment.

   a. Navigate to the Execute tab in Siebel Migration.
   b. Go to and select the migration plan that you created in Step 2 and want to export, and then click the Play icon in the Action column.
   c. Complete the fields in the Execution Details Window that appears as required, and then click OK. For information on how to complete the fields in the Execution Details Window, see *Executing a Siebel Migration Plan*.

      Siebel Migration starts to export all the resource data simultaneously. After all data has been exported, it is then packaged into a package file. If the Migration Package Location is configured on the Migration Profile in Siebel Management Console, then the package file will be created in the Migration Package Location path. Otherwise, the package file will be created in the `<File System>\migration` folder on the source machine.

      The package file contains a list of all the resources that were exported. It also contains the Watermark information if you have chosen the Incremental Runtime Repository or Incremental Workspace Data resource in the migration plan.
5. Execute the import only migration plan on the target environment:

a. Navigate to the Execute tab in Siebel Migration.
b. Go to and select the migration plan that you created in Step 3 and want to import, and then click the Play icon in the Action column.
c. Complete the fields in the Execution Details Window that appears as required, and then click OK. For information about how to complete the fields in the Execution Details Window, see *Executing a Siebel Migration Plan*.

Before executing the import only migration plan, you must ensure and do the following:

- Ensure that the package file (created in Step 4) is accessible to the target connection where you want to import the exported data. If the Migration Package Location is configured on the Migration Profile in Siebel Management Console, then the package file must be in the Migration Package Location path.
- If the Migration Package Location is not configured, then you must copy the package file (created in Step 4) from the source to the target environment's **`<File System>\migration`** folder.

Note: Before the import starts, Siebel Migration ensures that the resources selected in the import only migration plan match the resources selected in the export only migration plan. If the resources do not match, then an error message appears and the import will not start. Similarly, if the Incremental Runtime Repository or Incremental Workspace Data is part of the migration plan, then the watermark used during the export must match the watermark in the target environment. Otherwise , an error message appears and the import will not start.

Note: The File System path must be accessible by all Siebel Servers and application interface machines.

Incremental Migration from a Development to a Production Environment Without Using Siebel Migration

Typically if either source (development) or target (production) environment is not in a Repository Upgraded state, then migration execution is performed in synchronous mode. You can migrate asynchronously only if both environments are in a Repository Upgraded state. However, if you want to avoid synchronous migration altogether, you can manually apply any repository and schema changes to target environments that are not in a Repository Upgraded state by completing the steps in this procedure.

Note: A Repository Upgraded state means that the environment (repository and schema) has been upgraded to Siebel 18.8 Update or later release of Siebel CRM.

CAUTION: It is recommended that you back up your target database before starting to migrate repository or data using Siebel Migration.

To migrate incrementally from a development (source) to a production (target) environment without using the Siebel Migration application

Note: If your Runtime Repository Data Service or Incremental Runtime Repository Data Service migration plan does not include the non-mandatory Schema Service, then you must migrate any schema changes before executing the plan. If you want to move the schema changes separately, then ignore Step 2 and Step 5 in this procedure.

1. Generate a watermark for the target environment:
   a. Start the target application. For example, Siebel Call Center or any other employee facing application.
   b. Navigate to the Administration - Business Service screen, then the Simulator view.
   c. Click New (the plus (+) icon) to create a new Business Service record with the following values:

Service Name	Method Name
Migration Incremental Runtime Repository Data Service	GetWatermark

   d. Click Run.
   e. In the Output Arguments applet, copy the value in the Property Value field for the watermark Property Name.

      Save the value in a text file because you will need it in Step 3.
2. Export the schema from the source environment:
   a. Start the source application. For example, Siebel Call Center or any other employee facing application.
   b. Navigate to the Administration - Business Service screen, then the Simulator view.
   c. Click New (the plus (+) icon) to create a new Business Service record with the following values:

Service Name	Method Name
Migration Schema Service	Export

   d. Create a new record in the Inputs Arguments list applet:
      - Click the multiple select button in the Property Name field, and then click the plus (+) icon on the Property Set Properties applet that appears.
      - Enter the following values in the Property Name and Value fields, and then click Save.

Property Name	Value
migrationid	schema_export

      - Click OK to close the Property Set Properties applet.
   e. Click Run.
   f. In the Output Arguments applet, copy the value in the Property Value field for the **`trackingid`** Property Name.

      Save the value in a text file because you will need it in Step 5.

g. Make sure that the ddldict process is running.

To do this, use Task Manager on Windows or the ps command on UNIX.

3. Export the Incremental Runtime Repository from the source environment:

a. Start the source application.
b. Navigate to the Administration - Business Service screen, then the Simulator view.
c. Click New (the plus (+) icon) to create a new Business Service record with the following values:

Service Name	Method Name
Migration Incremental Runtime Repository Data Service	Export

d. Create a new record in the Inputs Arguments list applet:

- Click the multiple select button in the Property Name field, and then click the plus (+) icon on the Property Set Properties applet that appears.
- Enter the following values in the Property Name and Value fields, and then click Save:

Property Name	Value
migrationid	repo_export

- Click the plus (+) icon in Property Set Properties applet again, enter the following values in the Property Name and Value fields, and then click Save.

Property Name	Value
watermark	Paste the value that you saved from the Property Value field in the Output Arguments applet in Step 1 into this field.

- Click OK to close the Property Set Properties applet.

e. Click Run.
f. In the Output Arguments applet, copy the value in the Property Value field for the **`trackingid`** Property Name.

Save the value in a text file because you will need it in Step 6.

g. Make sure that the repimexp process is running.

To do this, use Task Manager on Windows or the ps command on UNIX.

4. Ensure that the Schema Export and Incremental Runtime Repository Export from the source environment is complete:

- At regular intervals, check that the ddldict and repimexp processes are running, until they complete.
- Verify the logs for ddldict and repimexp. The logs for these utilities are stored in the following locations:

`<FS_PATH>\migration\schema_export\log` for Schema Export

`<FS_PATH>\migration\repo_export\log` for Incremental RR
- You must wait until these two processes (ddldict and repimexp) are complete.

5. Import the (source) Schema to the target environment:

   a. Copy the **schema_export** folder from **<FS_PATH>\migration** on the source machine.
   b. Paste the **schema_export** folder into the **<FS_PATH>\migration** path on the target machine.
   c. Start the target application. For example: Siebel Call Center or any other employee facing application.
   d. Navigate to the Administration - Business Service screen, then the Simulator view.
   e. Click New (the plus (+) icon) to create a new Business Service record with the following values:

Service Name	Method Name
Migration Schema Service	Import

   f. Create a new record in the Inputs Arguments list applet:

   - Click the multiple select button in the Property Name field, and then click the plus (+) icon on the Property Set Properties applet that appears.
   - Enter the following values in the Property Name and Value fields, and then click Save:

Property Name	Value
migrationid	schema_export

   - Click the plus (+) icon in Property Set Properties applet again, enter the following values in the Property Name and Value fields, and then click Save.

Property Name	Value
filename	Paste the value that you saved from the Property Value field in the Output Arguments applet in Step 2 into this field.

   - Click the plus (+) icon in Property Set Properties applet again, enter the following values in the Property Name and Value fields, and then click Save.

Property Name	Value
username	**<Target Database Schema User Name>**

> **Note:** The database schema user name is in plain text format. Contact your Siebel administrator if you do not know what the database schema user name is for the target environment.

   - Click the plus (+) icon in Property Set Properties applet again, enter the following values in the Property Name and Value fields, and then click Save.

Property Name	Value
password	**<Target Database Schema Password>**

Property Name	Value
	Note: The database schema password must be in Base 64 encoded format. Contact your Siebel administrator if you do not know what the database schema password is for the target environment.

- Click OK to close the Property Set Properties applet.

g. Click Run.

h. Make sure that the ddlimp process is running in the target environment.

To do this, use Task Manager on Windows or the ps command on UNIX.

i. Wait until the ddlimp process completes successfully.

Verify the log located in the **<FS_PATH>\migration\schema_export\log** folder on the Target machine.

6. Import the (source) Incremental Runtime Repository to the target environment:

Note: Perform this task only if the previous step completes successfully.

a. Copy the **repo_export** folder from **<FS_PATH>\migration** on the source machine.

b. Paste the **repo_export** folder into the **<FS_PATH>\migration** path on the target machine.

c. Start the target application.

d. Navigate to the Administration - Business Service screen, then the Simulator view.

e. Click New (the plus (+) icon) to create a new Business Service record with the following values:

Service Name	Method Name
Migration Incremental Runtime Repository Data Service	Import

f. Create a new record in the Inputs Arguments list applet:

- Click the multiple select button in the Property Name field, and then click the plus (+) icon on the Property Set Properties applet that appears.
- Enter the following values in the Property Name and Value fields, and then click Save:

Property Name	Value
migrationid	repo_export

- Click the plus (+) icon in Property Set Properties applet again, enter the following values in the Property Name and Value fields, and then click Save.

Property Name	Value
filename	Paste the value that you saved from the Property Value field in Output Arguments applet in Step 3 into this field.

- Click OK to close the Property Set Properties applet.

g. Click Run.
h. Make sure that the process repimexp is running in the target environment.

   To do this, use Task Manager on Windows or the ps command on UNIX.
i. Wait until the repimexp process completes successfully.

   Verify the log located in the **<FS_PATH>\migration\repo_export\log** folder on the Target machine.

After you complete the steps in this procedure, the environment is ready for asynchronous migration.

Full RR Migration Without Using Siebel Migration

Use the following procedure to complete a synchronous full Runtime Repository (RR) migration without using the Siebel Migration application.

CAUTION: It is recommended that you back up your target database before starting to migrate repository or data.

To perform a full RR migration without using the Siebel Migration application

1. Generate a watermark for the Full RR source environment:

   a. Start the source application.
   b. Navigate to the Administration - Business Service screen, then the Simulator view.
   c. Click New (the plus (+) icon) to create a new Business Service record with the following values:

Service Name	Method Name
Migration Runtime Repository Data Service	GetWatermark

   d. Create a new record in the Inputs Arguments list applet:

      - Click the multiple select button in the Property Name field, and then click the plus (+) icon on the Property Set Properties applet that appears.
      - Enter the following values in the Property Name and Value fields, and then click Save:

Property Name	Value
workspace	Enter the <Integration_Workspace_Name> of the repository that you want to migrate

      - Click the plus (+) icon in Property Set Properties applet again, enter the following values in the Property Name and Value fields, and then click Save.

Property Name	Value
version	Enter the <Version_Number> of the repository (<Integration_Workspace_Name>) that you want to migrate.

- Click the plus (+) icon in Property Set Properties applet again, enter the following values in the Property Name and Value fields, and then click Save.

Property Name	Value
language	Enter the <language> or <language1, language2, language3, etc> that you have enabled on the database.

- Click OK to close the Property Set Properties applet.

e. Click Run.

f. In the Output Arguments applet, copy the value in the Property Value field for the watermark Property Name.

Save the value in a text file because you will need it in the next step.

2. Export the Full RR from the source environment:

a. Start the source application.

b. Navigate to the Administration - Business Service screen, then the Simulator view.

c. Click New (the plus (+) icon) to create a new Business Service record with the following values:

Service Name	Method Name
Migration Runtime Repository Data Service	Export

d. Create a new record in the Inputs Arguments list applet:

- Click the multiple select button in the Property Name field, and then click the plus (+) icon on the Property Set Properties applet that appears.
- Enter the following values in the Property Name and Value fields, and then click Save.

Property Name	Value
migrationid	repo_export

- Click the plus (+) icon in Property Set Properties applet again, enter the following values in the Property Name and Value fields, and then click Save.

Property Name	Value
watermark	Paste the value that you saved from the Property Value field in the Output Arguments applet in the previous step into this field.

- Click OK to close the Property Set Properties applet.

e. Click Run.
f. In the Output Arguments applet, copy the value in the Property Value field for the **trackingid** Property Name.

   Save the value in a text file because you will need it in Step 6.
g. Make sure that the repimexp process is running.

   To do this, use Task Manager on Windows or the ps command on UNIX.

3. Generate a watermark for the Full Seed source environment:

a. Start the source application.
b. Navigate to the Administration - Business Service screen, then the Simulator view.
c. Click New (the plus (+) icon) to create a new Business Service record with the following values:

Service Name	Method Name
Migration Application Workspace Data Service	GetFullSeedWatermark

d. Create a new record in the Inputs Arguments list applet:

   - Click the multiple select button in the Property Name field, and then click the plus (+) icon on the Property Set Properties applet that appears.
   - Enter the following values in the Property Name and Value fields, and then click Save:

Property Name	Value
Workspace Name	Enter the <Integration_Workspace_Name> of the full seed that you want to migrate

   - Click OK to close the Property Set Properties applet.

e. Click Run.
f. In the Output Arguments applet, copy the value in the Property Value field for the watermark Property Name.

   Save the value in a text file because you will need it in the next step.

4. Export the Full Seed from the source environment:

a. Start the source application.
b. Navigate to the Administration - Business Service screen, then the Simulator view.
c. Click New (the plus (+) icon) to create a new Business Service record with the following values:

Service Name	Method Name
Migration Application Workspace Data Service	FullSeedExport

d. Create a new record in the Inputs Arguments list applet:

   - Click the multiple select button in the Property Name field, and then click the plus (+) icon on the Property Set Properties applet that appears.
   - Enter the following values in the Property Name and Value fields, and then click Save.

Property Name	Value
migrationid	seed_export

- Click the plus (+) icon in Property Set Properties applet again, enter the following values in the Property Name and Value fields, and then click Save.

Property Name	Value
watermark	Paste the value that you saved from the Property Value field in the Output Arguments applet in the previous step into this field.

- Click OK to close the Property Set Properties applet.

e. Click Run.

f. In the Output Arguments applet, copy the value in the Property Value field for the **`trackingid`** Property Name.

Save the value in a text file because you will need it in Step 9.

g. Make sure that the dataexp process is running.

To do this, use Task Manager on Windows or the ps command on UNIX.

5. Ensure that the Full RR and Full Seed export from the source environment is complete:

- At regular intervals, check that the ddldict, repimexp, and dataexp processes are running, until they complete.
- Verify the logs for ddldict, repimexp, and dataexp. The logs for these utilities are stored in the following locations:

`<FS_PATH>\migration\repo_export\log` for Full RR

`<FS_PATH>\migration\seed_export\log` for Workspace Data
- You must wait until these three processes (ddldict, repimexp, and dataexp) are complete.

6. Import the Full RR to the target environment:

Note: Perform this task only if the previous step completes successfully.

a. Copy the **`repo_export`** folder from **`<FS_PATH>\migration\`** on the source machine.

b. Paste the **`repo_export`** folder into the **`<FS_PATH>\migration`** path on the target machine.

c. Start the target application.

d. Navigate to the Administration - Business Service screen, then the Simulator view.

e. Click New (the plus (+) icon) to create a new Business Service record with the following values:

Service Name	Method Name
Migration Runtime Repository Data Service	Import

f. Create a new record in the Inputs Arguments list applet:

- Click the multiple select button in the Property Name field, and then click the plus (+) icon on the Property Set Properties applet that appears.
- Enter the following values in the Property Name and Value fields, and then click Save:

Property Name	Value
migrationid	repo_export

- Click the plus (+) icon in Property Set Properties applet again, enter the following values in the Property Name and Value fields, and then click Save.

Property Name	Value
filename	Paste the value that you saved from the Property Value field in the Output Arguments applet in Step 2 into this field.

- Click OK to close the Property Set Properties applet.

g. Click Run.

h. Make sure that the repimexp process is running in the target environment.

To do this, use Task Manager on Windows or the ps command on UNIX.

i. Wait until the repimexp process completes successfully.

Verify the log located in the **`<FS_PATH>\migration\repo_export\log`** folder on the Target machine.

7. Export a SeedCopyExport from the target environment:

Note: Perform this task only if the previous step completes successfully.

a. Start the target application.

b. Navigate to the Administration - Business Service screen, then the Simulator view.

c. Click New (the plus (+) icon) to create a new Business Service record with the following values:

Service Name	Method Name
Migration Application Workspace Data Service	SeedCopyExport

d. Create a new record in the Inputs Arguments list applet:

- Click the multiple select button in the Property Name field, and then click the plus (+) icon on the Property Set Properties applet that appears.
- Enter the following values in the Property Name and Value fields, and then click Save:

Property Name	Value
migrationid	seed_copy

- Click the plus (+) icon in Property Set Properties applet again, enter the following values in the Property Name and Value fields, and then click Save.

Property Name	Value
watermark	Mode=SegCopyFullMigration

- Click OK to close the Property Set Properties applet.

e. Click Run.

f. In the Output Arguments applet, copy the value in the Property Value field for the **`trackingid`** Property Name.

Save the value in a text file because you will need it in the next step.

g. Make sure that the dataexp.exe process is running in the target environment.

To do this, use Task Manager on Windows or the ps command on UNIX and wait until the process completes.

h. Wait until the dataexp.exe process completes successfully.

Verify the log located in the **`<FS_PATH>\migration\seed_copy\log`** folder on the Target machine.

8. Import the SeedCopyImport to the target environment:

Note: Perform this task only if the previous step completes successfully.

a. Start the target application.

b. Navigate to the Administration - Business Service screen, then the Simulator view.

c. Click New (the plus (+) icon) to create a new Business Service record with the following values:

Service Name	Method Name
Migration Application Workspace Data Service	SeedCopyImport

d. Create a new record in the Inputs Arguments list applet:

- Click the multiple select button in the Property Name field, and then click the plus (+) icon on the Property Set Properties applet that appears.
- Enter the following values in the Property Name and Value fields, and then click Save:

Property Name	Value
migrationid	seed_copy

- Click the plus (+) icon in Property Set Properties applet again, enter the following values in the Property Name and Value fields, and then click Save.

Property Name	Value
filename	Paste the value that you saved from the Property Value field in the Output Arguments applet in the previous step into this field.

- Click OK to close the Property Set Properties applet.

e. Click Run.

f. Make sure that the dataimp.exe process is running in the target environment.

To do this, use Task Manager on Windows or the ps command on UNIX and wait until the process completes.

g. Wait until the dataimp.exe process completes successfully.

Verify the log located in the **<FS_PATH>\migration\seed_copy\log** folder on the Target machine.

9. Import the FullSeedImport to the target environment:

Note: Perform this task only if the previous step completes successfully.

a. Copy the **seed_export** folder from **<FS_PATH>\migration** on the source machine.

b. Paste the **seed_export** folder into the **<FS_PATH>\migration** path on the target machine.

c. Start the target application.

d. Navigate to the Administration - Business Service screen, then the Simulator view.

e. Click New (the plus (+) icon) to create a new Business Service record with the following values:

Service Name	Method Name
Migration Application Workspace Data Service	FullSeedImport

f. Create a new record in the Inputs Arguments list applet:

- Click the multiple select button in the Property Name field, and then click the plus (+) icon on the Property Set Properties applet that appears.
- Enter the following values in the Property Name and Value fields, and then click Save:

Property Name	Value
migrationid	seed_export

- Click the plus (+) icon in Property Set Properties applet again, enter the following values in the Property Name and Value fields, and then click Save.

Property Name	Value
filename	Paste the value that you saved from the Property Value field in the Output Arguments applet in Step 4 into this field.

- Click OK to close the Property Set Properties applet.

g. Click Run.

h. Make sure that the dataimp.exe process is running in the target environment.

To do this, use Task Manager on Windows or the ps command on UNIX and wait until the process completes.

i. Wait until the dataimp.exe process completes successfully.

Verify the log located in the **<FS_PATH>\migration\seed_export\log** folder on the Target machine.

10. Rename the Migrated Repository in the target environment:

    a. Log in to the target database.
    b. Rename Siebel Repository to Original Siebel Repository, for example, as follows:

```
UPDATE S_REPOSITORY SET NAME='Original Siebel Repository' WHERE NAME='Siebel Repository';
```

    c. Rename the Migrated Repository to Siebel Repository, for example, as follows:.

```
UPDATE S_REPOSITORY SET NAME='Siebel Repository' WHERE NAME='Migrated Repository';
```

    d. Restart Siebel Server for the changes to take effect.

11. Activate workflow tasks in the target environment:

    Note: This task must be performed after completing the previous step (that is, after restarting Siebel Server).

    a. Start the target application.
    b. Navigate to the Administration - Business Service screen, then the Simulator view.
    c. Click New (the plus (+) icon) to create a new Business Service record with the following values:

Service Name	Method Name
Siebel Runtime Metadata Publisher Service	ActivateWorkflowsTasks

    d. Create a new record in the Inputs Arguments list applet:

    - Click the multiple select button in the Property Name field, and then click the plus (+) icon on the Property Set Properties applet that appears.
    - Enter the following values in the Property Name and Value fields, and then click Save:

Property Name	Value
FullMigration	True

    - Click OK to close the Property Set Properties applet.

    e. Click Run.

    It will take some time to activate all workflow tasks. Until this process completes, the UI will remain in a frozen state.

12. Invalidate Seed Caches in the target environment:

    a. Start the target application.
    b. Navigate to the Administration - Business Service screen, then the Simulator view.
    c. Click New (the plus (+) icon) to create a new Business Service record with the following values:

Service Name	Method Name
Migration Application Workspace Data Service	InvalidateSeedCaches

d. Click Run.

It will take some time to activate all workflow tasks. Until this process completes, the UI will remain in a frozen state.

Migrating Siebel 18.8 Update or Later Release Repository Changes from a Development to a Production Environment

Once the development environment (source Design Time Repository/DR) is upgraded to the Siebel 18.8 Update or later release binary and repository, you must perform the steps in the following procedure to migrate the changes to the production (target Runtime Repository/RR) environment. You can use the asynchronous migration feature to do this only if both source (development) and target (production) environments are in a Repository Upgraded state. If either (source or target) environment is not in a Repository Upgraded state, then the migration execution will be performed in synchronous mode.

Note: A Repository Upgraded state means that the environment (repository and schema) has been upgraded to Siebel 18.8 Update or later release of Siebel CRM.

CAUTION: It is recommended that you back up your target database before starting to migrate repository or data using Siebel Migration.

To migrate Siebel 18.8 Update or later release repository changes from a development (source) to a production (target) environment

1. Create a connection to the target environment.

   For more information about creating a connection, see *Creating a Connection*.
2. Create a migration plan with Incremental Runtime Repository Service where source is the Development (DR) environment and target is the Target (RR or production) environment. (You can use the Runtime Repository Service instead of Incremental Runtime Repository Service.)

   For more information about migration planning, see *Creating a Migration Plan*.
3. Run the migration plan that you created in Step 2.
4. After you complete Steps 1 to 3, you must add the seed data to the target (RR or production) environment.

   For more information, see *Adding Seed Data to the Target Environment*.

Note: In a migration plan, if you have chosen a target (RR or production) environment that is Repository Upgraded, then the source (DR or development) environment must also be Repository Upgraded. Otherwise, you will not be able to migrate.

Adding Seed Data to the Target Environment

After you complete the steps described in *Migrating Siebel 18.8 Update or Later Release Repository Changes from a Development to a Production Environment*, you must complete the following procedure to add the seed data to the target environment.

To add seed data to the target environment

1. In Siebel CRM, open the Call Center application from the development environment that is upgraded to the Siebel 18.8 Update or later release binary and repository.
2. Navigate to the Site Map and then Administration Application - Business Service Access.
3. In the Business Service applet, query for the Application Migration Utility Service in the Name field.
4. In the Business Service Method applet, verify that it contains the following methods:
   - `CreateManifest`
   - `GenerateWatermark`
   - `GetWatermarkForIncrementalImport`
   - `GetWatermarks`
   - `ReadManifest`
   - `ValidateManifest`
   - `GetWatermarkFrmFile`
5. In Siebel CRM on the target environment that you plan to upgrade to the 18.8 Update or later Siebel Runtime Repository, open the Call Center application. This step assumes that the binary is already upgraded to 18.8 Update or later. If not, upgrade the binary.
6. Navigate to the Site Map and then Administration Application - Business Service Access.
7. Create a new record in the Business Service applet.
8. Enter Application Migration Utility Service for the value in the Name field.
9. In the Access By Responsibility applet, add the appropriate responsibility. The default responsibility is Siebel Administrator.
10. In the Business Service Access Method applet, add all the methods listed in Step 4.
11. Save your changes.
12. Restart the EAI Object Manager component (**`EAIObjMgr_<lang>`**) to read the newly added data.

Activating Workflows and Tasks in the Production Environment After Full Migration

All workflows and tasks must be activated. You need the design time workflow records to activate the workflows. The design time data for workflows is available after full migration even though the design time data is not stored in the production (target) environment. It is recommended that you activate all workflows immediately after a full migration. When an incremental migration is triggered after a full migration, it deletes all design time data for workflows (so the opportunity to activate any

workflows is lost after you run an incremental migration). Activating workflows involves generating a runtime definition of the workflow from the design time records.

Note: A full migration is where the entire Runtime Repository is migrated from a development (source DR) to a production (target RR) environment.

The following procedure shows you how to activate workflows and tasks in the production (target RR) environment after a full migration. This procedure applies for Siebel 17.x, Siebel 18.x and later releases.

To activate workflows and tasks in the production environment after a full migration

1. Rename the migrated repository to Siebel Repository.

   To do this, for example, use an SQL statement on the target environment.
2. Restart the Siebel Server (siebsrvr).
3. Start the Siebel business application, for example, Siebel Call Center.
4. Navigate to the Administration - Business Service screen, then the Simulator view.
5. Run the following business service to activate all workflows and tasks in the target environment:

Business Service Name	Invocation Method	Input Arguments
Siebel Runtime Metadata Publisher Service	ActivateWorkflowsTasks	`Property Name = "Full Migration"` `Value = True`

Migrating Configuration Data and Incremental Changes

When migrating configuration data (such as LOVs, runtime events, and data mapper) and incremental changes, note the following:

- LOVs are versioned and may change from one incremental migration to the next.
- Performing a full migration creates a single instance of all repository objects and LOVs with version 0.
- During incremental migrations, new and/or modified LOVs from the DR are created in the RR with new version numbers.
- To seed a new Target environment with all the LOVs and repository objects, the first migration that you perform must always be a full migration.
- Since LOV is workspace enabled, use the Application Workspace Data Service and Incremental Application Workspace Data Service to migrate LOV data including incremental changes.

  For all other configuration data (bar incremental changes), use the Application Data Service, Application Data Service with Transformation, or Application Deployment Manager Projects to migrate data. Migrating incremental changes is not supported here.
  - For example, to perform a full migration of LOVs using Siebel Migration application, select the following resource options:

    - Runtime Repository Data Service
    - Application Workspace Data Service
  - For example, to perform an incremental migration of LOVs using Siebel Migration application, select the following resource options:
    - Incremental Runtime Repository Data Service
    - Incremental Application Workspace Data Service

Note: Since Siebel Innovation Pack 2017, you can modify LOVs in DR environments when you create a development workspace. Prior to Siebel Innovation Pack 2017, LOVs were editable in all environments.

About Migrating User Preferences

As of Siebel CRM 8.1.x/8.2.x (including all Siebel Innovation Packs), the migration of user preferences is typically supported between releases provided that existing SPF files are placed in the Siebel File System on the upgraded system. For example, if you set your Default Greeting Template to My Template, then this preference will be preserved across releases.

However, note that if something changes between releases, then old preferences may be ignored. For example, if significant changes are made to Siebel Calendar (like they were in Siebel Innovation Pack 2016), then many of the preferences related to Calendar will change as a result, making the old preferences obsolete. Any addition of new preferences is backward compatible.

Note: Prior to Siebel CRM 8.1.x, the migration of user preferences from one major release to another (for example, from 7.8 to 8.1) is not supported. In such cases, it is recommended that you rename or delete your SPF files with each major upgrade and then reset your user preferences after the upgrade completes. New SPF files are generated during the upgrade.

23 Siebel Upgrade Planning Worksheet

Siebel Upgrade Planning Worksheet

This chapter contains the Upgrade Planning Worksheet. Before you upgrade your Siebel application, photocopy this worksheet, complete it, and give a copy to each member of the upgrade team.

The Upgrade Planning Worksheet contains the following sections:

- *Team Lead Summary*
- *DB2 Connect Information*
- *Siebel Development Environment Information*
- *Siebel Production Environment Information*
- *z/OS Host System Variables Information*

Team Lead Summary

The following table shows the Team Lead Summary fields to complete on the Upgrade Planning Worksheet.

Field	Description or Value
Deployment Team Lead:	
Siebel Administrator:	
Privileged User/Siebel Database User:	
DB2 Systems Programmer (SYSADM):	
DB2 Database Administrator (DBADM):	
Security Administrator:	
z/OS System Programmer:	
Midtier System Administrator:	

DB2 Connect Information

The following table shows the DB2 Connect Information fields to complete on the Upgrade Planning Worksheet.

Field	Description or Value
DB2 Host Name/IP Address:	
DB2 Port Number:	

Siebel Development Environment Information

The following table shows the Development Environment Information fields to complete on the Upgrade Planning Worksheet.

Field	Description or Value
Siebel Gateway Server:	
Enterprise Server Name:	
Siebel Server Directory:	
Siebel Database Configuration Utilities Directory:	
Database Alias:	
Siebel Administrator User Name:	
Siebel Administrator Password:	
Siebel Administrator User Group:	
Staging Siebel Schema Qualifier ID (Max. 8 chars):	
Staging ODBC Data Source Name (Subsystem name):	
Staging Database User Name:	

Field	Description or Value
Target Siebel Schema Qualifier ID (Max. 8 chars):	
Target ODBC Data Source Name (Subsystem name):	
Target Database User Name:	
Target Security Group ID:	
EIM User Group ID (Max. 8 characters):	
Siebel User Group ID (Max. 8 characters):	
Storage Control Filename:	
Storage Group for Temporary Indexes:	
Database Name Prefix (Max. 4 characters):	
4-KB Bufferpool:	
8-KB Bufferpool:	
16-KB Bufferpool:	
32-KB Bufferpool:	
Index Bufferpool:	

Note: The Security Group ID is also known as the secondary authorization ID.

Siebel Production Environment Information

The following table shows the Production Environment Information fields to complete on the Upgrade Planning Worksheet.

Field	Description or Value
Siebel Gateway Server:	

Field	Description or Value
Enterprise Server Name:	
Siebel Server Directory:	
Database Configuration Utilities Directory:	
Database Alias:	
Siebel Administrator User Name:	
Siebel Administrator Password:	
Siebel Administrator User Group:	
Staging Siebel Schema Qualifier ID (Max. 8 chars)	
Staging ODBC Data Source Name (Subsystem name):	
Staging Database User Name:	
Target Siebel Schema Qualifier ID (Max. 8 chars):	
Target ODBC Data Source Name (Subsystem name):	
Target Database User Name:	
Target Security Group ID:	
EIM User Group ID (Max. 8 characters):	
Siebel User Group ID (Max. 8 characters):	
Storage Control Filename:	
Storage Group for Temporary Indexes:	
Database Name Prefix (Max. 4 characters):	
ODBC DSN for Development Database:	

Field	Description or Value
Database User Name for Development Database:	
Database Table Owner for Development Database:	
Import Repository Name:	
4-KB Bufferpool:	
8-KB Bufferpool:	
16-KB Bufferpool:	
32-KB Bufferpool:	
Index Bufferpool:	

Note: The Security Group ID is also known as the secondary authorization ID.

z/OS Host System Variables Information

The following table shows the z/OS Host System Variables Information fields to complete on the Upgrade Planning Worksheet.

Field	Description or Value
DSN High Level Qualifier Name (DSNHLQ):	
Host/LPAR Name:	
DB2 WLM Name:	
DB2 WLM Load Library Name:	
Code Page / CCSID:	
DB2 Load Libraries:	
Staging Database:	

Field	Description or Value
DB2 Load Libraries:	
Target Database:	

Note: To obtain the correct values for the system variables, talk to your DBA or systems programmer.

24 Columns Denormalized During the Upgrade to Siebel CRM

Columns Denormalized During the Upgrade to Siebel CRM

This chapter lists columns that are denormalized during upgrades to the current release of Siebel Industry Applications. This chapter contains the following topic:

- *Denormalized Columns for Siebel Industry Applications Version 7.5.3*

Note: If you reduced column lengths when you installed the Siebel database on DB2 for z/OS, you must review them before upgrading to the current release of Siebel CRM. The upgrade does not recognize the denormalized columns.

Denormalized Columns for Siebel Industry Applications Version 7.5.3

The following table lists columns that are denormalized during upgrades from Siebel Industry Applications version 7.5.3 to Siebel Industry Applications version 8.1 or 8.2.

Target Table	Target Column	Denorm Path	Source Table	Source Column
S_LOY_MEM_BU	MEM_NUM	[MEMBER_ID].[MEM_NUM]	S_LOY_MEMBER	MEM_NUM
S_LOY_MEM_BU	MEM_TYPE_CD	[MEMBER_ID].[MEM_TYPE_CD]	S_LOY_MEMBER	MEM_TYPE_CD
S_LOY_MEM_PSTN	MEM_NUM	[MEMBER_ID].[MEM_NUM]	S_LOY_MEMBER	MEM_NUM
S_LOY_MEM_PSTN	MEM_TYPE_CD	[MEMBER_ID].[MEM_TYPE_CD]	S_LOY_MEMBER	MEM_TYPE_CD
S_LOY_PROG_BU	PROG_NAME	[PROG_ID].[NAME]	S_LOY_PROGRAM	NAME
S_LOY_PROMO_BU	PROMO_NAME	[PROMO_ID].[NAME]	S_LOY_PROMO	NAME
S_LOY_PROMO_BU	PROMO_NUM	[PROMO_ID].[PROMO_NUM]	S_LOY_PRO	PROMO_NUM

Target Table	Target Column	Denorm Path	Source Table	Source Column
S_LOY_TXN_BU	TXN_NUM	[TXN_ID].[TXN_NUM]	S_LOY_TXN	TXN_NUM
S_LOY_TXN_BU	TXN_STATUS_CD	[TXN_ID].[STATUS_CD]	S_LOY_TXN	STATUS_CD
S_LOY_TXN_BU	TXN_SUB_TYPE_CD	[TXN_ID].[SUB_TYPE_CD]	S_LOY_TXN	SUB_TYPE_CD
S_LOY_TXN_BU	TXN_TYPE_CD	[TXN_ID].[TYPE_CD]	S_LOY_TXN	TYPE_CD
S_POS_BU	POS_NUM	[POS_ID].[POS_NUM]	S_POS	POS_NUM
S_PROD_STYL_TNT	SETUP_STYLE_CD	[PROP_STYLE_ID].[SETUP_STYLE_CD]	S_PROP_STYL_TNT	SETUP_STYLE_CD
S_PSP_PROC_BU	VOD_NAME	[VOD_ID].[VOD_NAME]	S_VOD	VOD_NAME
S_QUOTE_POSTN	QUOTE_NUM	[QUOTE_ID].[QUOTE_NUM]	S_DOC_QUOTE	QUOTE_NUM

25 Upgrade Files for Siebel Business Applications

Upgrade Files for Siebel Business Applications

This chapter lists the files that are used to perform a development or production upgrade to the current release of Siebel CRM, and lists the tables that are amended during PRET processing. This chapter contains the following topics:

- *Siebel CRM z/OS Upgrade Files*
- *Tables Amended During PRET Unload Processing*
- *PRET Members Generated By Pretedit.txt*
- *Target Tables Amended During PRET Processing*

Siebel CRM z/OS Upgrade Files

When you run the Siebel Upgrade Wizard on the midtier, it generates files that are used to perform the development and production upgrade. You then transfer these files to the z/OS host, where they are placed in staging data sets. Several upgrade files are also generated on the z/OS host.

The following table lists each of the upgrade files that are generated, the name of the file on the midtier (if applicable) and on the z/OS host, the phase of the upgrade when the file is generated, the upgrade path to which the file applies, and a brief description.

Midtier Filename	z/OS Filename	Phase Transferred to Host	Description	Upgrade Paths
job0.txt	JOB0	ftp_stg	Contains REXX code and panels	All
SIEBEL.load.xmit	load.xmit	ftp_stg	Load modules	All
sbllog.txt	SBLLOG.LOADFILE	ftp_stg	Initial log file entries	All
SIEBEL.sp.dbrmlib.xmit	sp.dbrmlib.xmit	ftp_stg	Dbrm modules	All
SIEBEL.sp.spddl.xmit	sp.spddl.xmit	ftp_stg	Stored procedure DDL	All
job1.txt	VSTG0000 VSTG0000 is copied into one of the following VSTG* files on the z/OS	ftp_stg	Generic install.jcl and help panels	All

Midtier Filename	z/OS Filename	Phase Transferred to Host	Description	Upgrade Paths
	host, depending on your upgrade path: VSTG0002 VSTG0020 VSTG0021 VSTG0022 VSTG0003 VSTG0005 VSTG0006 VSTG0040 VSTG0041 VSTG0042			
siebin01.jcl	VSTG0001 VSTG0001 is copied into one of the following VSTG* files on the z/OS host, depending on your upgrade path: VSTG0011 VSTG0030 VSTG0031 VSTG0032 VSTG0012 VSTG0014 VSTG0015 VSTG0050 VSTG0051 VSTG0052	ftp_stg	Install.jcl specific to each upgrade path	All
siebproc.jcl	VSTG0070	ftp_stg	JCL PROC members	All
filelist.txt	VSTG0075	Pause #1	List of files	All
synctab.jcl	VSTG0085	syncdd	Table Synchronization	All
syncidx.sql	VSTG0087	syncdd	Index Synchronization	All
schema.staging.db.sql	VSTG0090	ftp_stg	Staging schema databases	All
schema.staging.tbsp.sql	VSTG0091	ftp_stg	Staging schema table spaces	All
schema.staging.tbl.sql	VSTG0092	ftp_stg	Staging schema tables	All
schema.staging.uind.sql	VSTG0093	ftp_stg	Staging schema unique indexes	All
schema.staging.nuind.sql	VSTG0094	ftp_stg	Staging schema NPIs	All
schema.staging.oind.sql	VSTG0095	ftp_stg	Staging schema obsolete indexes	All
schema.staging.grt.sql	VSTG0096	ftp_stg	Staging schema grants	All
schema.db.sql	VSTG0100	Pause#2	Target schema databases	All
schema.tbsp.sql	VSTG0101	Pause#2	Target schema table spaces	All

Midtier Filename	z/OS Filename	Phase Transferred to Host	Description	Upgrade Paths
schema.tbl.sql	VSTG0102	Pause#2	Target schema tables	All
schema.grt.sql	VSTG0103	Pause#2	Target schema grants	All
schema.uind.sql	VSTG0104	Pause#2	Target schema unique indexes	All
schema.nuind.sql	VSTG0105	Pause#2	Target schema NPIs	All
schema.oind.sql	VSTG0106	Pause#2	Target schema obsolete indexes	All
Not applicable	VSTG1010 This file is created on the z/OS host. It contains CREATE INDEX statements extracted from VSTG0104 and VSTG0105.	Not applicable	Generates index REBUILD control statements for the target environment.	All
Not applicable	VSTG1111 This file is dynamically built on the z/OS host.	Not applicable	Maintains a list of the additive changes that are applied to the staging database. This list is updated dynamically as changes are applied.	All
Not applicable	VSTG1112 This file is dynamically built on the z/OS host.	Not applicable	Contains the additive changes applied to the staging database during the preupgrade phase.	All
scindx.sql	VSTG0110	Pause#3	DDL for secondary indexes	All
tmptable.sql	VSTG0119	Pause#2	Staging. Common TMPTABLES (tmptable.ctl)	All
tmptable.sql	VSTG0120	Pause#2	Target. Common TMPTABLES (tmptable.ctl)	All
tmptable1.sql	VSTG0121	ftp_stg	Staging. Logging for Unload jobs and TMPTBL_ADDR table (no storage.ctl file)	All

Midtier Filename	z/OS Filename	Phase Transferred to Host	Description	Upgrade Paths
tmptable2.sql	VSTG0122	ftp_stg	Target. Logging for Unload jobs and TMPTBL_ADDR table (no storage.ctl file)	All
drop_view.sql	VSTG0130	ftp_stg	Apply drop view before Nonadditive	All
ddlview_sql	VSTG0131	ftp_stg	Apply create view after Nonadditive	All
siebel.translate.iconv	VSTG0150	Pause #1	Program to convert code pages for each language	All
pregen.txt	VSTG0200	ftp_stg	JCL (genclobf, gentrgd, geneimd)	All
pret.jcl	VSTG0210	Pause #1	PRET SQL	All
pret_prod.jcl	VSTG0211	Pause #1	PRET JCL	All
pret_sia.jcl	VSTG0220	Pause #1	PRETFINS SQL	SIA753, SIA77, SIA78, SIA80
pret_sia_prod.jcl	VSTG0221	Pause #1	PRETFINS JCL	SIA753, SIA77, SIA78, SIA80
unload.ldc	VSTG0300	Pause #2	Unload control cards	All
load.ldc	VSTG0310	Pause #2	Load control cards	All
preschm.jcl	VSTG0400	Pause #1	PRESCHM SQL	All
preschm_prod.jcl	VSTG0401	Pause #1	PRESCHM JCL	All
preschm_sia.jcl	VSTG0410	Pause #1	PRESCHMF SQL	SIA753, SIA77, SIA78, SIA80
preschm_sia_prod.jcl	VSTG0411	Pause #1	PRESCHMF JCL	SIA753, SIA77, SIA78, SIA80

Midtier Filename	z/OS Filename	Phase Transferred to Host	Description	Upgrade Paths
upg_iss.jcl	VSTG0600	Pause #1	UPGISS JCL	All
upg_iss_prod.jcl	VSTG0601	Pause #1	UPGISS SQL	All
gen_primary1.jcl	VSTG0700	Pause #1	Gen Primary part 1 - SQL	All
gen_primary1_prod.jcl	VSTG0701	Pause #1	Gen Primary part 1 - JCL	All
gen_primary2.jcl	VSTG0702	Pause #1	Gen Primary part 2 - SQL	All
gen_primary2_prod.jcl	VSTG0703	Pause #1	Gen Primary part 2 - JCL	All
gen_primary3.jcl	VSTG0704	Pause #1	Gen Primary part 3 - SQL	All
gen_primary3_prod.jcl	VSTG0705	Pause #1	Gen Primary part 3 - JCL	All
gen_primary4.jcl	VSTG0706	Pause #1	Gen Primary part 4 - SQL	All
gen_primary4_prod.jcl	VSTG0707	Pause #1	Gen Primary part 4 - JCL	All
hhmignot.sql	VSTG0850	Pause #1	Household	SIA753, SIA77, SIA78, SIA80
hhmigpop.sql	VSTG0851	Pause #1	Household	SIA753, SIA77, SIA78, SIA80
household_mig_Fins.jcl	VSTG0852	Pause #1	Household	SIA753, SIA77, SIA78, SIA80
household_mig_Fins_prod.jcl	VSTG0853	Pause #1	Household	SIA753, SIA77, SIA78, SIA80
rpt_dup_addr_rowids.sql	VSTG0861	ftp_stg	Gen Dup Addr Report SQL	All
rpt_dup_addr_names.sql	VSTG0860	ftp_stg	Gen Dup Addr Report SQL	All
schema.additive.sql	VSTG1000	Pause #1	Staging additive changes	All

Midtier Filename	z/OS Filename	Phase Transferred to Host	Description	Upgrade Paths
Not applicable	VSTG1001 This file is a copy of VSTG1000; it is created on the z/OS host.	Not applicable	Target additive changes	All

Tables Amended During PRET Unload Processing

The unload job control cards for specific tables have been modified so that during PRET (pre-table) processing, the data in the tables is modified during the table unload process instead of being modified after the data has been loaded into the target table.

The following table lists the tables containing the data that is modified during unload processing, the macro that performs the modifications, and the relevant upgrade paths.

PRET Tables Modified During the Table Unload Process	Macro	Siebel Business Applications Paths	Siebel Industry Applications Paths
S_APPL_WEB_TMPL	PTH0062	Not applicable	SIA753
S_APPL_WTMPL_IT	PTH0064	Not applicable	SIA753
S_CONTROL	PTH0222	All Paths	All Paths
S_PCONTROL	PTS0223	HOR753, HOR77	SIA753
S_FN_CRDT_RPT	PTS0224	HOR753, HOR77	SIA753
S_ASGN_RULE_GRP	PTS0225	HOR753, HOR77	SIA753
S_REGION	PTS0227	Not applicable	SIA753
S_REGION	PTS0228	Not applicable	SIA753
S_QTA_OBJCRT_D	PTH0833	All Paths	All Paths
S_ETL_TIME_DAY	PTS0313	Not applicable	SIA753
S_ETL_TIME_DAY	PTS0314	Not applicable	SIA753
S_EXTDATA_TBL	PTS0500	Not applicable	SIA753

PRET Tables Modified During the Table Unload Process	Macro	Siebel Business Applications Paths	Siebel Industry Applications Paths
S_PAPL_WEB_TMPL	PTS0505	Not applicable	SIA753
S_NOTE_CON	PTM0520	Not applicable	SIA77
S_NOTE_PROD_INT	PTM0520	Not applicable	SIA77
S_NOTE_ACCNT	PTM0520	Not applicable	SIA77
S_DOCK_TXN_LOG	PTM0010	All Paths	All Paths
S_ESCL_REQ	PTM0010	All Paths	All Paths

Note: Unload and load jobs on tables that contain CLOB data are processed by the PTMCLOBx macros. These macros adjust the unload and load job control cards to handle any CLOB data in a table. The PTMCLOBx macros can be found in the `DSNHLQ.SIEBEL.EXEC` or in the VSTG0300 and the VSTG0310 staging data sets.

PRET Members Generated By Pretedit.txt

The Pretedit.txt file creates the partitioned data set (PDS) on the z/OS host that is used for PRET processing. The members in this PDS perform a number of tasks, for example, listing the tables that contain CLOB columns, gathering information required for key processing, and deleting rows in specific tables. Data sets are generated for each upgrade path.

The following table shows the data set members created by the Pretedit.txt file, the objects amended by these members (the SQL statement that is run is contained in the member) and the upgrade path for which these members are generated.

PDS Member Name	PRET Object Affected	SIA Upgrade Paths
PRETLDIN	S_DOCK_TXN_LOG	All
PRETLDIN	S_ESCL_REQ	All
PRETCLBF	SQL/CLOB list, used by SBLCLOBU	All
PRETKEYS	SQL/Clustering Index Key structures	All

Target Tables Amended During PRET Processing

The PRET upgrade jobs perform operations on the target database tables listed in the following table. You might want to back up these tables before you start the upgrade.

The following table shows the target tables amended by PRET upgrade processing, the type of amendment made, and the upgrade path affected.

Tables Amended During PRET Processing	Type of Change Made	SIA Paths
S_FN_CRDT_RPT	Alter	SIA753
S_REGION	Alter	SIA753

26 REST API References for Migration Services

REST API References for Migration Services

This chapter provides examples for using REST API to discover migration services. It includes the following topics:

- *Using REST API with the Migration Schema Service*
- *Using REST API with the Migration Application Data Service*
- *Using REST API with the Migration Data Service with Transformation Service*
- *Using REST API with the Migration Incremental Runtime Repository Data Service*
- *Using REST API with the Migration Runtime Repository Data Service*
- *Using REST API with the Migration Incremental Application Workspace Data Service*
- *Using REST API with Migration Application Workspace Data Service*
- *Using REST API with the Migration File Prepare and Deploy Service*
- *Using REST API with Siebel Migration Application*

Using REST API with the Migration Schema Service

The Migration Schema Service migrates the physical Siebel schema from the source environment to the target environment. The following table includes the methods supported for the Migration Schema Service.

Method	Definition
Export	Method used to export a schema for a migration. For more information, see *Exporting with the Migration Schema Service*.
Import	Method used to import a schema for a migration. For more information, see *Importing with the Migration Schema Service*.
GetWatermark	Method used to get a watermark for a migration. For more information, see *Getting a Watermark with the Migration Schema Service*.
IsSchemaChanged	Method used to check if a schema has changed for a migration. For more information, see *Verifying If a Schema Changed with the Migration Schema Service*.
GetStatus	Method used to get the status of a migration. For more information, see *Getting Status with the Migration Schema Service*.

Exporting with the Migration Schema Service

You can export a Migration Schema resource by sending an HTTP POST request to the repository resource's URI.

The following details are for a request to export a resource:

- URI: **http://<host>:<port>/siebel/v1.0/service/Migration Schema Service/Export**
- HTTP Method: POST
- Content-Type: application/json
- Authorization: Basic
- Request parameter:
  - migrationid: Use the migrationid parameter to include the migration identification value in the REST API request.
- Request body:

```
{
 "body":{
 "migrationid": "<Migration Id value>
 }
}
```

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response parameters:
  - trackingid: String that contains the tracking identification value.
- Response body:

```
{
 "trackingid": "<tracking ID value>"
}
```

Getting Status with the Migration Schema Service

You can get status for a Migration Schema resource by sending an HTTP POST request to the repository resource's URI.

The following details are for a request to get status for a resource:

- URI: **http://<host>:<port>/siebel/v1.0/service/Migration Schema Service/GetStatus**
- HTTP Method: POST
- Content-Type: application/json
- Authorization: Basic
- Request parameters:
  - trackingid: Contains the tracking identification value.

    - getlog: If the value of this parameter is true, the log content of the resource along with the status is returned in the response. If the value is false, only the status is returned in the response.
    - migrationid: Use the migrationid parameter to include the migration identification value in the REST API request.
- Request body:

```
{"body":{
 "trackingid": "<tracking Id value>",
 "getlog": "true"
 "migrationid": "<Migration Id value>
 }
}
```

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response parameters:
    - status: Returns a value for the status of the request:
        - running: Indicates that the resource is running.
        - success: Indicates that the request was completed successfully.
        - error: Indicates that the request failed and the error parameter is populated with an error message.
    - error: Returns an error message if an error is encountered.
- Response body:

```
{
 "status": "success",
 "error": ""
}
```

Importing with the Migration Schema Service

You can import a Migration Schema resource by sending an HTTP POST request to the repository resource's URI.

The following details are for a request to import a resource:

- URI: **`http://<host>:<port>/siebel/v1.0/service/Migration Schema Service/Import`**
- HTTP Method: POST
- Content-Type: application/json
- Authorization: Basic
- Request parameters:
    - filename: Use the filename parameter to enter the name of the file to be imported.
    - username: Use the user name parameter to enter your database user name.
    - password: Use the password parameter to enter your database password.
    - migrationid: Use the migrationid parameter to include the migration identification value in the REST API request.

- Request body:

```
{"body":{
 "filename": "<file name value>",
 "username":"<db username>",
 "password":"<db password>"
 "migrationid": "<Migration Id value>
 }
}
```

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response parameters:
  - trackingid: Returns the tracking identification value.
- Response body:

```
{
 "trackingid": "<tracking id value>"
}
```

Verifying If a Schema Changed with the Migration Schema Service

You can check if a schema for a Migration Schema resource has changed by sending an HTTP POST request to the repository resource's URI.

The following details are for a request to check if a schema has changed for a resource:

- URI: **`http://<host>:<port>/siebel/v1.0/service/Migration Schema Service/IsSchemaChanged`**
- HTTP Method: POST
- Content-Type: application/json
- Authorization: Basic
- Request parameter:
  - watermark: Use the watermark parameter to enter the watermark value.
- Request body:

```
{ "body":
 {
 "watermark": "<watermark value>"
 }
}
```

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response parameters:

  - isschemachanged: Returns the value Y or N. Y indicated that the schema has changed. N indicates that the schema has not changed.

- Response body:

```
{
 "isschemachanged": "Y"
}
```

Getting a Watermark with the Migration Schema Service

You can get a watermark for a Migration Schema resource by sending an HTTP POST request to the repository resource's URI.

The following details are for a request to get a watermark for a resource:

- URI: **http:/<host>:<port>/siebel/v1.0/service/Migration Schema Service/GetWatermark**
- HTTP Method: POST
- Content-Type: application/json
- Authorization: Basic
- Request body:

```
{
 "body":{}
}
```

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response parameters:
  - watermark: Returns the watermark value.
- Response body:

```
{
 "watermark": "watermark value>"
}
```

Using REST API with the Migration Application Data Service

The Migration Application Data Service migrates the data from the source environment to the target environment based on the tables listed in the datamig.inp file on the source environment. The following table includes the methods supported for the Migration Application Data Service.

Method	Definition
Export	Method used to export the application data for a migration. For more information, see *Exporting with the Migration Application Data Service*.
Import	Method used to import the application data for a migration. For more information, see *Importing with the Migration Application Data Service*.
GetStatus	Method used to get the status of a migration. For more information, see *Getting Status with the Migration Application Data Service*.

Exporting with the Migration Application Data Service

You can export a Migration Application Data Service resource by sending an HTTP POST request to the repository resource's URI.

The following details are for a request to export a resource:

- URI: **`http://<host>:<port>/siebel/v1.0/service/Migration Application Data Service/Export`**
- HTTP Method: POST
- Content-Type: application/json
- Authorization: Basic
- Request parameters:
  - migrationid: Use the migrationid parameter to include the migration identification value in the REST API request.
- Request body:

```
{
 "body":{
 "migrationid": "<Migration Id value>
 }
}
```

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response parameters:
  - trackingid: Returns the tracking identification value.
- Response body:

```
{
 "trackingid": "<tracking id value>"
}
```

Getting Status with the Migration Application Data Service

You can get status for a Migration Application Data Service resource by sending an HTTP POST request to the repository resource's URI.

The following details are for a request to get status for a resource:

- URI: **http://<host>:<port>/siebel/v1.0/service/Migration Application Data Service/GetStatus**
- HTTP Method: POST
- Content-Type: application/json
- Authorization: Basic
- Request parameters:
  - trackingid: Contains the tracking identification value.
  - getlog: If the value of this parameter is true, the log content of the resource along with the status is returned in the response. If the value is false, only the status is returned in the response.
  - migrationid: Use the migrationid parameter to include the migration identification value in the REST API request.
- Request body:

```
{
 "body":
 {
 "trackingid": "tracking id value>",
 "migrationid": "Migration Id value>
 "getlog": "true"
 }
}
```

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response parameters:
  - status: Returns a value for the status of the request:
    - running: Indicates that the resource is running.
    - success: Indicates that the request was completed successfully.
    - error: Indicates that the request failed and the error parameter is populated with an error message.
  - error: Returns an error message if an error is encountered.
- Response body:

```
{
 "status": "success",
 "error": ""
}
```

Importing with the Migration Application Data Service

You can import a Migration Application Data Service resource by sending an HTTP POST request to the repository resource's URI.

The following details are for a request to import a resource:

- URI: **http://<host>:<port>/siebel/v1.0/service/Migration Application Data Service/Import**
- HTTP Method: POST
- Content-Type: application/json
- Authorization: Basic
- Request parameters:
  - filename: Use the filename parameter to enter the name of the file to be imported.
  - migrationid: Use the migrationid parameter to include the migration identification value in the REST API request.
- Request body:

```
{
 "body":
 {
 "filename": "file name value>"
 "migrationid": "Migration Id value>
 }
}
```

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response parameters:
  - trackingid: Returns the tracking identification value.
- Response body:

```
{
 "trackingid": "tracking id value>"
}
```

Using REST API with the Migration Data Service with Transformation Service

The Migration Data Service with Transformation service migrates the data from the source environment to the target environment based on the tables listed in the datamig.inp file on the source environment.

While exporting the data, this service uses the rule defined in the datamig.rul file and performs the transformation. The transformed data will be migrated to the target environment.

The following table includes the methods supported for the Migration Data Service with Transformation Service.

Method	Definition
Export	Method used to export the application data for a migration. For more information, see *Exporting with the Migration Application Data Service With Transformation*.
Import	Method used to import the application data for a migration. For more information, see *Importing with the Migration Application Data Service With Transformation*.
GetStatus	Method used to get the status of a migration. For more information, see *Getting Status with the Migration Application Data Service With Transformation*.

Exporting with the Migration Application Data Service With Transformation

You can export a Migration Application Data Service With Transformation resource by sending an HTTP POST request to the repository resource's URI.

The following details are for a request to export a resource:

- URI: **`http://<host>:<port>/siebel/v1.0/service/Migration Application Data Service With Transformation/Export`**
- HTTP Method: POST
- Content-Type: application/json
- Authorization: Basic
- Request parameter:
  - migrationid: Use the migrationid parameter to include the migration identification value in the REST API request.
- Request body:

```
{
 "body":{
 "migrationid": "<Migration Id value>
 }
}
```

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response parameters:
  - trackingid: Returns the tracking identification value.
- Response body:

```
{
 "trackingid": "tracking id value>"
}
```

Getting Status with the Migration Application Data Service With Transformation

You can get status for a Migration Application Data Service With Transformation resource by sending an HTTP POST request to the repository resource's URI.

The following details are for a request to get status for a resource:

- URI: **http://<host>:<port>/siebel/v1.0/service/Migration Application Data Service With Transformation/GetStatus**
- HTTP Method: POST
- Content-Type: application/json
- Authorization: Basic
- Request parameters:
  - trackingid: Contains the tracking identification value.
  - getlog: If the value of this parameter is true, the log content of the resource along with the status is returned in the response. If the value is false, only the status is returned in the response.
  - migrationid: Use the migrationid parameter to include the migration identification value in the REST API request.
- Request body:

```
{
 "body":
 {
 "trackingid": "tracking id value>",
 "migrationid": "Migration Id value>
 "getlog": "true"
 }
}
```

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response parameters:
  - status: Returns a value for the status of the request:
    - running: Indicates that the resource is running.
    - success: Indicates that the request was completed successfully.
    - error: Indicates that the request failed and the error parameter is populated with an error message.
  - error: Returns an error message if an error is encountered.
- Response body:

```
{
 "status": "success",
 "error": ""
}
```

Importing with the Migration Application Data Service With Transformation

You can import a Migration Application Data Service With Transformation resource by sending an HTTP POST request to the repository resource's URI.

The following details are for a request to import a resource:

- URI: **http://<host>:<port>/siebel/v1.0/service/Migration Application Data Service With Transformation/Import**
- HTTP Method: POST
- Content-Type: application/json
- Authorization: Basic
- Request parameters:
  - filename: Use the filename parameter to include the name of the file to be imported.
  - migrationid: Use the migrationid parameter to include the migration identification value in the REST API request.
- Request body:

```
{
 "body":
 {
 "filename": "filename value>"
 "migrationid": "Migration Id>
 }
}
```

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response parameters:
  - trackingid: Returns the tracking identification value.
- Response body:

```
{
 "trackingid": "tracking id value>"
}
```

Using REST API with the Migration Incremental Runtime Repository Data Service

The Migration Incremental Runtime Repository Data Service identifies the version of the repository data that was previously migrated. If you select the latest migration version, then this service takes the changes from the previous migration version and latest version and migrates the data to the target environment. If you do not make any selections, the service only considers the latest migration version and migrates the data to the target environment.

The following table includes the methods supported for the Migration Incremental Runtime Repository Data Service. For information on how to activate the workflow and taskflow after importing the incremental runtime repository, see *Activating the Workflow and Taskflow with the Migration Incremental Runtime Repository Data Service*.

Method	Definition
Export	Method used to export the incremental Runtime Repository changes for a migration. For more information, see *Exporting with the Migration Incremental Runtime Repository Data Service*.
Import	Method used to import the incremental Runtime Repository for a migration. For more information, see *Importing with the Migration Incremental Runtime Repository Data Service*.
GetWatermark	Method used to get a watermark for a migration. For more information, see *Getting a Watermark with the Migration Incremental Runtime Repository Data Service*.
DBCheck	Method used to check a database has a migration. For more information, see *Checking a Database with the Migration Incremental Runtime Repository Data Service*.
GetStatus	Method used to get the status of a migration. For more information, see *Getting Status with the Migration Incremental Runtime Repository Data Service*.

Getting a Watermark with the Migration Incremental Runtime Repository Data Service

You can get a watermark for a Migration Incremental Runtime Repository Data Service resource by sending an HTTP POST request to the repository resource's URI.

The following details are for a request to get a watermark for a resource:

- URI: **`http://<host>:<port>/siebel/v1.0/service/Migration Incremental Runtime Repository Data Service/GetWatermark`**
- HTTP Method: POST
- Content-Type: application/json
- Authorization: Basic
- Request body:

```
{
```

```
 "body":{}
}
```

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response parameters:
  - watermark: Returns the watermark value.
- Response body:

```
{
 "watermark": "watermark value>"
}
```

Exporting with the Migration Incremental Runtime Repository Data Service

You can export a Migration Incremental Runtime Repository Data Service resource by sending an HTTP POST request to the repository resource's URI.

The following details are for a request to export a resource:

- URI: **http://<host>:<port>/siebel/v1.0/service/Migration Incremental Runtime Repository Data Service/Export**
- HTTP Method: POST
- Content-Type: application/json
- Authorization: Basic
- Request parameters:
  - migrationid: Use the migrationid parameter to include the migration identification value in the REST API request.
  - watermark: Use the watermark parameter to include the watermark value.
- Request body:

```
{
 "body":
 "migrationid": "<Migration Id value>
 {
 "watermark": "<watermark value>"
 }
}
```

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response parameters:

    - trackingid: Returns the tracking identification value.

- Response body:

```
{
"trackingid": "<tracking id value>"
}
```

Getting Status with the Migration Incremental Runtime Repository Data Service

You can get status for a Migration Incremental Runtime Repository Data Service resource by sending an HTTP POST request to the repository resource's URI.

The following details are for a request to get status for a resource:

- URI: **`http://<host>:<port>/siebel/v1.0/service/ Migration Incremental Runtime Repository Data Service/GetStatus`**
- HTTP Method: POST
- Content-Type: application/json
- Authorization: Basic
- Request parameters:
    - trackingid: Contains the tracking identification value.
    - getlog: If the value of this parameter is true, the log content of the resource along with the status is returned in the response. If the value is false, only the status is returned in the response.
    - migrationid: Use the migrationid parameter to include the migration identification value in the REST API request.
- Request body:

```
{
 "body":
 {
 "trackingid": "<tracking id value>",
 "migrationid", "<Migration Id value>"
 "getlog": "true"
 }
}
```

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response parameters:
    - status: Returns a value for the status of the request:
        - running: Indicates that the resource is running.
        - success: Indicates that the request was completed successfully.
        - error: Indicates that the request failed and the error parameter is populated with an error message.

- error: Returns an error message if an error is encountered.

- Response body:

```
{
 "status": "success",
 "error": ""
}
```

Importing with the Migration Incremental Runtime Repository Data Service

You can import a Migration Incremental Runtime Repository Data Service resource by sending an HTTP POST request to the repository resource's URI.

The following details are for a request to import a resource:

- URI: **http://<host>:<port>/siebel/v1.0/service/ Migration Incremental Runtime Repository Data Service/ Import**
- HTTP Method: POST
- Content-Type: application/json
- Authorization: Basic
- Request parameter:
  - filename: Use the filename parameter to include the name of the file to be imported.
  - migrationid: Use the migrationid parameter to include the migration identification value in the REST API request.
- Request body:

```
{
 "body":
 {
 "filename":"file name value>",
 "migrationid", "Migration Id value>"
 }
}
```

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response parameters:
  - trackingid: Returns the tracking identification value.
- Response body:

```
{
"trackingid": "tracking id value>"
}
```

Checking a Database with the Migration Incremental Runtime Repository Data Service

You can check a database for a Migration Incremental Runtime Repository Data Service resource by sending an HTTP POST request to the repository resource's URI.

The following details are for a request to check a database for a resource:

- URI: **http://<host>:<port>/siebel/v1.0/service/ Migration Incremental Runtime Repository Data Service/DBCheck**
- HTTP Method: POST
- Content-Type: application/json
- Authorization: Basic
- Request body:

```
{
 "body":{}
}
```

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response parameters:
  - trackingid: Returns the tracking identification value.
- Response body:

```
{
"trackingid": "<tracking id value>"
}
```

Activating the Workflow and Taskflow with the Migration Incremental Runtime Repository Data Service

You can activate the workflow and taskflow after importing the incremental runtime repository by sending an HTTP POST request to the repository resource's URL.

The following details are for a request to activate the workflow and taskflow for a resource:

- URI: **http://<host>:<port>/siebel/v1.0/service/Migration Runtime Repository Data Service/ActivateWorkflowsTasks**
- HTTP Method: POST
- Content-Type: application/json
- Authorization: Basic

- Request body:

```
{
 "body":{}
}
```

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response parameters:
  - status: Returns a value for the status of the request:
    - running: Indicates that the resource is running.
    - success: Indicates that the request was completed successfully.
    - error: Indicates that the request failed and the error parameter is populated with an error message.
- Response body:

```
{
"status:success
}
```

Using REST API with the Migration Runtime Repository Data Service

The Migration Runtime Repository Data Service migrates only the runtime repository from the source environment to the target environment. The following table includes the methods supported for the Migration Runtime Repository Data Service.

Method	Definition
Export	Method used to export the Runtime Repository for a migration. For more information, see *Exporting with the Migration Runtime Repository Data Service*.
Import	Method used to import the Runtime Repository for a migration. For more information, see *Importing with the Migration Runtime Repository Data Service*.
GetWatermark	Method used to get a watermark for a migration. For more information, see *Getting a Watermark with the Migration Runtime Repository Data Service*.
DBCheck	Method used to check a database for a migration. For more information, see *Checking a Database with the Migration Runtime Repository Data Service*.
GetStatus	Method used to get the status of a migration. For more information, see *Getting Status with the Migration Runtime Repository Data Service*.
GetRRInfo	Method used to get Runtime Repository information. For more information, see *Getting Runtime Repository Information with the Migration Runtime Repository Data Service*.

Method	Definition

Getting Runtime Repository Information with the Migration Runtime Repository Data Service

You can get runtime repository information for a Migration Runtime Repository Data Service resource by sending an HTTP POST request to the repository resource's URI.

The following details are for a request to get runtime repository information for a resource:

- URI: **http://<host>:<port>/siebel/v1.0/service/Migration Runtime Repository Data Service/GetRRInfo**
- HTTP Method: POST
- Content-Type: application/json
- Authorization: Basic
- Request body:

```
{
 "body":{}
}
```

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response parameters:
  - workspace: Returns the name of the workspace branch, the latest version of the workspace branch, and workspace languages. If there are multiple workspace branches in the Siebel environment, then the branch name and its latest version will be separated by a comma in the response. The response lists all the Siebel environment languages. If there is only one language, then only one language is listed in the response.
- Response body:

```
{
 "workspace":
 {
 "Branch Name": "Last Version Number of the Branch"
 },
 "languages":
 {...
 }
}
```

Getting a Watermark with the Migration Runtime Repository Data Service

You can get a water mark for a Migration Runtime Repository Data Service resource by sending an HTTP POST request to the repository resource's URI.

The following details are for a request to get a watermark for a resource:

- URI: **http://<host>:<port>/siebel/v1.0/service/Migration Runtime Repository Data Service/GetWaterMark**
- HTTP Method: POST
- Content-Type: application/json
- Authorization: Basic
- Request parameters:
  - workspace: Use the workspace parameter to enter the name of the workspace branch in the REST API request.
  - version: Use the version parameter to enter the version number of the workspace branch. The value is 0 to the latest version of the specified workspace branch.
- Request body:

```
{
 "body":
 {
 "workspace":"workspace branch name>",
 "version":"version>",
 }
}
```

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response parameters:
  - watermark: Returns the watermark value.
- Response body:

```
{
 "watermark": "Watermark value>"
}
```

Exporting with the Migration Runtime Repository Data Service

You can export a Migration Runtime Repository Data Service resource by sending an HTTP POST request to the repository resource's URI.

The following details are for a request to export a resource:

- URI: **http://<host>:<port>/siebel/v1.0/service/Migration Runtime Repository Data Service/Export**
- HTTP Method: POST
- Content-Type: application/json
- Authorization: Basic
- Request parameters:
  - watermark: Use the watermark parameter to include the name of the watermark in the REST API request.

    - migrationid: Use the migrationid parameter to include the migration identification value in the REST API request.
- Request body:

```
{
 "body":
 {
 "watermark": "Watermark value>"
 "migrationid", "Migration Id value>"
 }
}
```

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response parameters:
    - trackingid: Returns the tracking identification value.
- Response body:

```
{
 "trackingid": "tracking id value>"
}
```

Getting Status with the Migration Runtime Repository Data Service

You can get status for a Migration Runtime Repository Data Service resource by sending an HTTP POST request to the repository resource's URI.

The following details are for a request to get status for a resource:

- URI: **`http://<host>:<port>/siebel/v1.0/service/Migration Runtime Repository Data Service/GetStatus`**
- HTTP Method: POST
- Content-Type: application/json
- Authorization: Basic
- Request parameters:
    - trackingid: Contains the tracking identification value.
    - getlog: If the value of this parameter is true, the log content of the resource along with the status is returned in the response. If the value is false, only the status is returned in the response.
    - migrationid: Use the migrationid parameter to include the migration identification value in the REST API request.
- Request body:

```
{
 "body":
 {
 "trackingid":"tracking id value>",
 "migrationid", "Migration Id value>"
 "getlog":"TRUE"
```

```
}
}
```

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response parameters:
  - status: Returns a value for the status of the request:
    - running: Indicates that the resource is running.
    - success: Indicates that the request was completed successfully.
    - error: Indicates that the request failed and the error parameter is populated with an error message.
  - error: Returns an error message if an error is encountered.
  - log: Returns log file content if the getlog parameter value is set to TRUE.
- Response body:

```
{
 "status": "success",
 "error": "",
 "log":log file content>
}
```

Importing with the Migration Runtime Repository Data Service

You can import a Migration Runtime Repository Data Service resource by sending an HTTP POST request to the repository resource's URI.

The following details are for a request to import a resource:

- URI: **`http://<host>:<port>/siebel/v1.0/service/Migration Runtime Repository Data Service/Import`**
- HTTP Method: POST
- Content-Type: application/json
- Authorization: Basic
- Request parameters:
  - filename: Use the filename parameter to enter the name of the file to be imported.
  - migrationid: Use the migrationid parameter to include the migration identification value in the REST API request.
- Request body:

```
{
 "body":
 {
 "filename":"file name value>",
 "migrationid", "Migration Id value>"
 }
}
```

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response parameters:
  - trackingid: String that contains the tracking identification value.
- Response body:

```
{
 "trackingid": "tracking id value>"
}
```

Checking a Database with the Migration Runtime Repository Data Service

You can check a database for a Migration Runtime Repository Data Service resource by sending an HTTP POST request to the repository resource's URI.

The following details are for a request to check a database for a resource:

- URI: **`http://<host>:<port>/siebel/v1.0/service/Migration Runtime Repository Data Service/DBCheck`**
- HTTP Method: POST
- Content-Type: application/json
- Authorization: Basic
- Request body:

```
{
 "body":{}
}
```

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response parameters:
  - trackingid: Returns the tracking identification value.
- Response body:

```
{
"trackingid": "tracking id value>"
}
```

Using REST API with the Migration Incremental Application Workspace Data Service

The Migration Incremental Application Workspace Data Service identifies the version that was previously migrated. This service takes all the changes from the previously migrated version to the latest version and migrates them to the target environment. The following table includes the methods supported for the Migration Incremental Application Workplace Data Service. For information on how to invalidate seed caches, see *Invalidating Seed Caches with the Migration Incremental Application Workspace Data service*.

Method	Definition
Export	Method used to export the Workspace data for a migration. For more information, see *Exporting with the Migration Incremental Application Workspace Data Service*.
Import	Method used to import the Workspace data for a migration. For more information, see *Importing with the Migration Incremental Application Workspace Data Service*.
GetWatermark	Method used to get a watermark for a migration. For more information, see *Getting a Watermark with the Migration Incremental Application Workspace Data Service*.
GetStatus	Method used to get the status of a migration. For more information, see *Getting Status with the Migration Incremental Application Workspace Data Service*.

Getting Status with the Migration Incremental Application Workspace Data Service

You can get status for a Migration Incremental Application Workspace Data Service resource by sending an HTTP POST request to the repository resource's URI.

The following details are for a request to get status for a resource:

- URI: **`http://<host>:<port>/siebel/v1.0/service/Migration Incremental Application Workspace Data Service/GetStatus`**
- HTTP Method: POST
- Content-Type: application/json
- Authorization: Basic
- Request parameters:
  - trackingid: Contains the tracking identification value.
  - getlog: If the value of this parameter is true, the log content of the resource along with the status is returned in the response. If the value is false, only the status is returned in the response.
  - migrationid: Use the migrationid parameter to include the migration identification value in the REST API request.
- Request body:

```
{
 "body":
 {
 "trackingid":"tracking id value>",
 "migrationid", "Migration Id value>"
 "getlog":"TRUE"
 }
}
```

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response parameters:
  - status: Returns a value for the status of the request:
    - running: Indicates that the resource is running.
    - success: Indicates that the request was completed successfully.
    - error: Indicates that the request failed and the error parameter is populated with an error message.
  - error: Returns an error message if an error is encountered.
  - log: Return log file content if the getlog parameter is set to TRUE.
- Response body:

```
{
"status": "success",
"error": "",
"log": log file content
}
```

Getting a Watermark with the Migration Incremental Application Workspace Data Service

You can get a watermark for a Migration Incremental Application Workspace Data Service resource by sending an HTTP POST request to the repository resource's URI.

The following details are for a request to get a watermark for a resource:

- URI: **`http://<host>:<port>/siebel/v1.0/service/Migration Incremental Application Workspace Data Service/GetWaterMark`**
- HTTP Method: POST
- Content-Type: application/json
- Authorization: Basic
- Request body:

```
{
 "body":{}
}
```

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response parameters:
  - watermark: Returns the watermark value.
- Response body:

```
{
 "watermark": "watermark value"
}
```

Exporting with the Migration Incremental Application Workspace Data Service

You can export a Migration Incremental Application Workspace Data Service resource by sending an HTTP POST request to the repository resource's URI.

The following details are for a request to export a resource:

- URI: **http://<host>:<port>/siebel/v1.0/service/Migration Incremental Application Workspace Data Service/Export**
- HTTP Method: POST
- Content-Type: application/json
- Authorization: Basic
- Request parameters:
  - migrationid: Use the migrationid parameter to include the migration identification value in the REST API request.
  - watermark: Use the watermark parameter to include the watermark value in the REST API request.
- Request body:

```
{
 "body":
 "migrationid", "Migration Id value>"
 {
 "watermark": "watermark value>"
 }
}
```

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response parameters:
  - trackingid: Returns the tracking identification value.
- Response body:

```
{
"trackingid": "tracking id value>"
}
```

Importing with the Migration Incremental Application Workspace Data Service

You can import a Migration Incremental Application Workspace Data Service resource by sending an HTTP POST request to the repository resource's URI.

The following details are for a request to import a resource:

- URI: **http://<host>:<port>/siebel/v1.0/service/Migration Incremental Application Workspace Data Service/Import**
- HTTP Method: POST
- Content-Type: application/json
- Authorization: Basic
- Request parameters:
  - filename: Use the filename parameter to include the name of the file to be imported.
  - migrationid: Use the migrationid parameter to include the migration identification value in the REST API request.
- Request body:

```
{
 "body":
 {
 "filename": "file name value>"
 "migrationid", "Migration Id value>"
 }
}
```

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response parameters:
  - trackingid: Returns the tracking identification value.
- Response body:

```
{
 "trackingid": "tracking id value>"
}
```

Invalidating Seed Caches with the Migration Incremental Application Workspace Data service

You can invalidate seed caches for a Migration Incremental Application Workspace Data service resource by sending an HTTP POST request to the repository resource's URI.

The following details are for a request to invalidate seed caches for a resource:

- URI: **http://<host>:<port>/siebel/v1.0/service/Migration Incremental Application Workspace Data service/InvalidateSeedCaches**
- HTTP Method: POST
- Content-Type: application/json
- Authorization: Basic
- Request body:

```
{
 "body":{}
}
```

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response parameters:
  - status: Returns a value for the status of the request:
    - running: Indicates that the resource is running.
    - success: Indicates that the request was completed successfully.
    - error: Indicates that the request failed and the error parameter is populated with an error message.
- Response body:

```
{
 "status": "success"
}
```

Using REST API with Migration Application Workspace Data Service

The Migration Application Workspace Data Service migrates the seed records from the source environment to the target environment. The following table includes the methods supported for the Migration Application Workspace Data Service. For information on how to invalidate seed caches, see *Invalidating the Seed Caches with the Migration Application Workspace Data Service*.

Method	Definition
GetSeedCopyWatermark	Method used to get the watermark that is needed for the SeedCopyExport method for a migration. For more information, see *Getting a Seed Copy Watermark with the Migration Application Workspace Data Service*.
GetFullSeedWatermark	Method used to get the watermark that is needed for the FullSeedExport method for a migration. For more information, see *Getting the Full Seed Watermark with the Migration Application Workspace Data Service*.
SeedCopyExport	Method used to export the Workspace data (LOV) from the Siebel Repository in the target environment. For more information, see *Getting a Seed Copy Export with the Migration Application Workspace Data Service*.
SeedCopyImport	Method used to import the Workspace data (LOV), that was exported using the SeedCopyExport method, into the Migrated Repository in the target environment. This helps move the additional LOVs that are present in the Siebel Repository to the Migrated Repository. For more information, see *Getting a Seed Copy Import with the Migration Application Workspace Data Service*.
FullSeedExport	Method used to export the Workspace data (LOV) from a chosen Integration Workspace in the source environment. For more information, see *Getting the Full Seed Export with the Migration Application Workspace Data Service*.
FullSeedImport	Method used to import the Workspace data (LOV), that was exported using the FullSeedExport method, into the Migrated Repository in the target environment. For more information, see *Getting the Full Seed Import with the Migration Application Workspace Data Service*.
GetStatus	Method used to get the status of a migration. For more in formation, see *Getting Status with the Migration Application Workspace Data Service*.

Getting a Seed Copy Watermark with the Migration Application Workspace Data Service

You can get a seed copy watermark for a Migration Application Workspace Data Service resource by sending an HTTP POST request to the repository resource's URI.

The following details are for a request to get a seed copy watermark for a resource:

- URI: **`http://<host>:<port>/siebel/v1.0/service/Migration Application Workspace Data Service/GetSeedCopyWatermark`**
- HTTP Method: POST
- Content-Type: application/json
- Authorization: Basic
- Request body:

```
{
 "body":{}
}
```

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response parameters:
  - watermark: Returns the watermark value.
- Response body:

```
{
"watermark": "<Watermark value>"
}
```

Getting the Full Seed Watermark with the Migration Application Workspace Data Service

You can get the full seed watermark for a Migration Application Workspace Data Service resource by sending an HTTP POST request to the repository resource's URI.

The following details are for a request to get the full seed watermark for a resource:

- URI: **`http://<host>:<port>/siebel/v1.0/service/Migration Application Workspace Data Service/GetFullSeedWatermark`**
- HTTP Method: POST
- Content-Type: application/json
- Authorization: Basic
- Request body:

```
{
 "body":{}
}
```

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response parameters:
  - watermark: Returns the watermark value.
- Response body:

```
{
"watermark": "<Watermark value>"
}
```

Getting Status with the Migration Application Workspace Data Service

You can get status for a Migration Application Workspace Data Service resource by sending an HTTP POST request to the repository resource's URI.

The following details are for a request to get status for a resource:

- URI: **http://<host>:<port>/siebel/v1.0/service/Migration Application Workspace Data Service/GetStatus**
- HTTP Method: POST
- Content-Type: application/json
- Authorization: Basic
- Request parameters:
  - trackingid: Contains the tracking identification value.
  - getlog: If the value of this parameter is true, the log content of the resource along with the status is returned in the response. If the value is false, only the status is returned in the response.
  - migrationid: Use the migrationid parameter to include the migration identification value in the REST API request.
- Request body:

```
{
 body":
 {
 "trackingid":"<tracking id value>"
 "migrationid", "<Migration Id value>"
 "getlog":"TRUE"
 }
}
```

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response parameters:
  - status: Returns a value for the status of the request:
    - running: Indicates that the resource is running.
    - success: Indicates that the request was completed successfully.
    - error: Indicates that the request failed and the error parameter is populated with an error message.
  - error: Returns an error message if an error is encountered.
  - log: Returns log file content if the getlog parameter value is set to TRUE.
- Response body:

```
{
"status": "success",
"error": "",
"log": "log file content
```

```
}
```

Getting a Seed Copy Export with the Migration Application Workspace Data Service

You can get a seed copy export for a Migration Application Workspace Data Service resource by sending an HTTP POST request to the repository resource's URI.

The following details are for a request to get a seed copy export for a resource:

- URI: **`http://<host>:<port>/siebel/v1.0/service/Migration Application Workspace Data Service/SeedCopyExport`**
- HTTP Method: POST
- Content-Type: application/json
- Authorization: Basic
- Request parameters:
  - migrationid: Use the migrationid parameter to include the migration identification value in the REST API request.
  - watermark: Use the watermark parameter to include the watermark value in the REST API request.
- Request body:

```
{
 "body":
 "migrationid", "<Migration Id value>"
 {
 "watermark": "<Watermark value>"
 }
}
```

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response parameters:
  - trackingid: Returns the tracking identification value.
- Response body:

```
{
 "trackingid": "<tracking id value>"
}
```

Getting a Seed Copy Import with the Migration Application Workspace Data Service

You can get a seed copy import for a Migration Application Workspace Data Service resource by sending an HTTP POST request to the repository resource's URI.

The following details are for a request to get a seed copy import for a resource:

- URI: **`http://<host>:<port>/siebel/v1.0/service/Migration Application Workspace Data Service/SeedCopyImport`**
- HTTP Method: POST
- Content-Type: application/json
- Authorization: Basic
- Request parameters:
  - filename: Use the filename parameter to include the name of the file to be imported.
  - migrationid: Use the migrationid parameter to include the migration identification value in the REST API request.
- Request body:

```
{
 "body":
 {
 "filename":"<file name value>"
 "migrationid", "<Migration Id value>"
 }
}
```

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response parameters:
  - trackingid: Returns the tracking identification value.
- Response body:

```
{
 "trackingid": "<tracking id value>"
}
```

Getting the Full Seed Export with the Migration Application Workspace Data Service

You can get a full seed export for a Migration Application Workspace Data Service resource by sending an HTTP POST request to the repository resource's URI.

The following details are for a request to get a full seed export for a resource:

- URI: **http://<host>:<port>/siebel/v1.0/service/Migration Application Workspace Data Service/FullSeedExport**
- HTTP Method: POST
- Content-Type: application/json
- Authorization: Basic
- Request parameters:
  - watermark: Use the watermark parameter to include the watermark value in the REST API request.
  - migrationid: Use the migrationid parameter to include the migration identification value in the REST API request.
- Request body:

```
{
 "body":
 "migrationid", "<Migration Id value>"
 {
 "watermark": "<watermark value>"
 }
}
```

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response parameters:
  - trackingid: Returns the tracking identification value.
- Response body:

```
{
 "trackingid": "<tracking id value>"
}
```

Getting the Full Seed Import with the Migration Application Workspace Data Service

You can get full seed import for a Migration Application Workspace Data Service resource by sending an HTTP POST request to the repository resource's URI.

The following details are for a request to get full seed import for a resource:

- URI: **http://<host>:<port>/siebel/v1.0/service/Migration Application Workspace Data Service/FullSeedImport**
- HTTP Method: POST
- Content-Type: application/json
- Authorization: Basic
- Request parameters:

  - filename: Use the filename parameter to include the name of the file to be imported.
  - migrationid: Use the migrationid parameter to include the migration identification value in the REST API request.
- Request body:

```
{
"body":
 {
 "filename":"<file name value>"
 "migrationid", "<Migration Id value>"
 }
}
```

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response parameters:
  - trackingid: Returns the tracking identification value.
- Response body:

```
{
 "trackingid": "<tracking id value>"
}
```

Invalidating the Seed Caches with the Migration Application Workspace Data Service

You can invalidate seed caches for a Migration Application Workspace Data Service resource by sending an HTTP POST request to the repository resource's URI.

The following details are for a request to invalidate seed caches for a resource:

- URI: **http://<host>:<port>/siebel/v1.0/service/Migration Application Workspace Data Service/InvalidateSeedCaches**
- HTTP Method: POST
- Content-Type: application/json
- Authorization: Basic
- Request body:

```
{
 "body":{}
}
```

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json

- Response body:

```
{
"status": "success"
}
```

Using REST API with the Migration File Prepare and Deploy Service

The Migration File Prepare and Deploy Service identifies all the new and modified files and migrates those files from the source environment to the target environment. The following table shows the methods supported by the Migration File Prepare and Deploy Service.

Method	Definition
Export	Method used to export modified files. For more information, see *Exporting with the Migration File Prepare and Deploy Service*.
Import	Method used to import modified files. For more information, see *Importing with the Migration File Prepare and Deploy Service*.
generateWatermark	Method used to generate a watermark for modified files. For more information, see *Generating a Watermark with the Migration File Prepare and Deploy Service*.
readwatermarkfile	Method used to read the watermark for modified files. For more information, see *Reading the Watermark with the Migration File Prepare and Deploy Service*.
writewatermarkfile	Method used to write the watermark for modified files. For more information, see *Writing the Watermark with the Migration File Prepare and Deploy Service*.
GetStatus	Method used to get the status of modified files. For more information, see *Getting Status with the Migration File Prepare and Deploy Service*.

Exporting with the Migration File Prepare and Deploy Service

You can export a File Prepare and Deploy resource by sending an HTTP POST request to the (source) repository resource's URI.

The following details are for a request to export a resource (that is, the *source* files for a File Prepare and Deploy resource):

- URI: **`http://<host>:<port>/siebel/v1.0/MigrationFilePrepareAndDeploy/Export`**
- HTTP Method: POST
- Content-Type: application/json
- Authorization: Basic
- Request parameters:

    - migrationid: Use the migrationid parameter to include the migration identification value in the REST API request.
- Request body:

```
{
 "body":{
 "migrationid": "<Migration Id Value>",
 "watermarkFile": "<Watermark File Name>"
 }
}
```

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response parameters:
    - trackingid: Returns the tracking identification value.
- Response body:

```
{
 "trackingid": "<tracking ID value>"
}
```

Getting Status with the Migration File Prepare and Deploy Service

You can get (the API Export or Import) status for a Migration File Prepare and Deploy resource by sending an HTTP POST request to the repository resource's URI.

The following details are for a request to get status for a resource:

- URI: **http://<host>:<port>/siebel/v1.0/MigrationFilePrepareAndDeploy/getstatus**
- HTTP Method: POST
- Content-Type: application/json
- Authorization: Basic
- Request parameters:
    - trackingid: Contains the tracking identification value.
    - getlog: If the value of this parameter is true, the log content of the resource along with the status is returned in the response. If the value is false, only the status is returned in the response.
    - migrationid: Use the migrationid parameter to include the migration identification value in the REST API request.
- Request body:

```
{"body":{
 "trackingid": "<Tracking Id value>",
 "migrationid": "<Migration Id value>",
 "getlog": "true"
 }
```

```
}
```

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response parameters:

  #
  - status: Returns a value for the status of the request:
    - running: Indicates that the resource is running.
    - success: Indicates that the request was completed successfully.
    - error: Indicates that the request failed and the error parameter is populated with an error message.
  - error: Returns an error message if an error is encountered.

- Response body:

```
{
 "status": "success",
 "error": ""
}
```

Importing with the Migration File Prepare and Deploy Service

You can import a Migration File Prepare and Deploy resource by sending an HTTP POST request to the (target) repository resource's URI.

The following details are for a request to import a resource:

- URI: **`http://<host>:<port>/siebel/v1.0/MigrationFilePrepareAndDeploy/Import`**
- HTTP Method: POST
- Content-Type: application/json
- Authorization: Basic
- Request parameters:
  - migrationid: Use the migrationid parameter to include the migration identification value in the REST API request.
- Request body:

```
{"body":{
 "migrationid": "<Migration Id value>
 }
}
```

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response parameters:

- trackingid: Returns the tracking identification value.

- Response body:

```
{
 "trackingid": "<tracking id value>"
}
```

Generating a Watermark with the Migration File Prepare and Deploy Service

You can generate a watermark for a Migration File Prepare and Deploy resource by sending an HTTP POST request to the (target) repository resource's URI.

The following details are for a request to generate a watermark for a resource:

- URI: **http://<host>:<port>/siebel/v1.0/MigrationFilePrepareAndDeploy/generateWatermark**
- HTTP Method: POST
- Content-Type: application/json
- Authorization: Basic
- Request parameters:
  - migrationid: Use the migrationid parameter to include the migration identification value in the REST API request.
  - filename: File name for the watermark.
- Request body:

```
{"body":{
 "migrationid": "<Migration Id value>",
 "Filename": "<File Name>"
 }
}
```

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response parameters:
  - trackingid: Returns the tracking identification value.
- Response body:

```
{
 "tracking id": "<tracking id value>"
}
```

Reading the Watermark with the Migration File Prepare and Deploy Service

You can read the watermark for a Migration File Prepare and Deploy resource by sending an HTTP POST request to the (target) repository resource's URI.

The following details are for a request to read the watermark for a resource:

- URI: **http://<host>:<port>/siebel/v1.0/MigrationFilePrepareAndDeploy/readwatermarkfile**
- HTTP Method: POST
- Content-Type: application/json
- Authorization: Basic
- Request parameters:
  - migrationid: Use the migrationid parameter to include the migration identification value in the REST API request.
  - filename: Name of the watermark file.
- Request body:

```
{"body":{
 "migrationid": "<Migration Id value>",
 "Filename": "<File Name>"
 }
}
```

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response parameters:
  - trackingid: Returns the tracking identification value.
  - watermarkContents: Returns the watermark.
- Response body:

```
{
 "tracking id": "<tracking id value>"
 "watermarkContents": "<Watermark contents>"
}
```

Writing the Watermark with the Migration File Prepare and Deploy Service

You can write the watermark received from the target by sending an HTTP POST request to the (source) repository resource's URI.

The following details are for a request to write the watermark (received from the target) for a resource:

- URI: **`http://<host>:<port>/siebel/v1.0/MigrationFilePrepareAndDeploy/writewatermarkfile`**
- HTTP Method: POST
- Content-Type: application/json
- Authorization: Basic
- Request parameters:
  - migrationid: Use the migrationid parameter to include the migration identification value in the REST API request.
  - filename: File name for the watermark.
  - watermarkContents: Watermark contents received from the target.
- Request body:

```
{"body":{
 "migrationid": "<Migration Id value>",
 "Filename": "<File Name>",
 "watermarkContents": "<Watermark contents>"
 }
}
```

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response parameters:
  - trackingid: Returns the tracking identification value.
- Response body:

```
{
 "tracking id": "<tracking id value>"
}
```

Note: If you generate the watermark in the target environment and you then want to transfer the Watermark Content to the source environment, then use the ReadWatermark and Writewatermark APIs as detailed in this topic. Otherwise, you must manually copy the Watermark from target to source, and you must do this before performing the export on source.

Using REST API with Siebel Migration Application

You can use REST APIs both before and after the repository upgrade is done. Use the asynchronous migration feature only if both source (development) and target (production) environments are in a Repository Upgraded state. If either (source or target) environment is not in a Repository Upgraded state, then the migration execution will be performed in synchronous mode.

You can use REST API with Siebel Migration Application to do the following:

- Work with connections. You can use REST APIs to create connections, update your existing connection, get information about connections, generate a watermark for your connection, and delete your connection.
- Work with migration plans. You can use REST APIs to create migration plans, update migration plans, get information about migration plans, and delete migration plans.
- Execute migration plans. You can use REST APIs to execute migration plans and get status about your running migration plans by plan name, resource name, and operation. You can also get the log file based on an operation for a running migration plan.
- Get history information about migration plans. You can use REST APIs to get history information about your migration plans by ID, resource name, plan name, and operation. You can also get the log file based on an operation for a particular history record.

This topic contains the following subtopics:

- *Using REST API to Configure Siebel Migration Application Connections*
- *Using REST API to Configure Siebel Migration Application Migration Plans*
- *Using REST API to Execute Siebel Migration Plans*
- *Using REST API to Get Siebel Migration Plan History*

Using REST API to Configure Siebel Migration Application Connections

You can use the Siebel Migration REST API to configure connections for your migration plan. For more information, see the following subtopics:

- *Getting All Connections*
- *Getting a Connection by Name*
- *Creating a New Connection*
- *Creating a Watermark for a Connection*
- *Updating the Connection*
- *Deleting a Connection*

Getting All Connections

You can get all connections for your migration by sending an HTTP GET request to the Siebel Migration Application.

The following details are for a request to get all connections for a migration:

- URI: `https://{hostname}:{port}/siebel/v1.0/migration/connection`
- HTTP Method: GET
- Content-Type: application/json
- Authorization: Basic

The following are the details for the response to a successful request:

- HTTP Code: 200

- Content-Type: application/json
- Response body:


```
[
 {
 "id":"88-1V5WJZ",
 "name":"Dev",
 "restEndpoint":"https://{hostname}:{port}/siebel/v1.0",
 "isFavourite":"false",
 "uri":"https://{hostname}:{port}/siebel/v1.0",
 "connectionId":"88-1V5WJZ",
 "resources":[
 {
 "id":"88-1V5WK0",
 "name":"Migration Schema Service",
 "displayName":"Schema Service",
 "type":"DB Util"
 },
 {
 "id":"88-1V5WK2",
 "name":"Migration Runtime Repository Data Service",
 "displayName":"Runtime Repository Data Service",
 "type":"DB Util"
 },
 {
 "id":"88-1V5WK3",
 "name":"Migration Application Workspace Data Service",
 "displayName":"Application Workspace Data Service",
 "type":"DB Util"
 },
 {
 "id":"88-1V5WK4",
 "name":"Migration Incremental Runtime Repository Data Service",
 "displayName":"Incremental Runtime Repository Data Service",
 "type":"DB Util"
 },
 {
 "id":"88-1V5WK5",
 "name":"Migration Incremental Application Workspace Data Service",
 "displayName":"Incremental Application Workspace Data Service",
 "type":"DB Util"
 },
 {
 "id":"88-1V5WK6",
 "name":"Migration Application Data Service",
 "displayName":"Application Data Service",
 "type":"DB Util"
 },
 {
 "id":"88-1V5WK7",
 "name":"Migration Application Data Service With Transformation",
 "displayName":"Application Data Service With Transformation",
 "type":"DB Util"
 },
 {
 "id":"88-1V5WK8",
 "name":"MigrationFilePrepareAndDeploy",
 "displayName":"File Prepare And Deploy",
 "type":"DB Util"
 },
 {
 "id":"88-1V5WK9",
 "name":"FINS BIB",
 "displayName":"FINS BIB",
 "type":"ADM"
 }
```

```
]
},
{
"id":"88-1V5WLD",
"name":"Prod",
"restEndpoint":"https://slc07fnj.us.oracle.com:16690/siebel/v1.0",
"isFavourite":"false",
"uri":"https://slc07fnj.us.oracle.com:16690/siebel/v1.0",
"connectionId":"88-1V5WLD",
"resources":[
{
"id":"88-1V5WLE",
"name":"Migration Schema Service",
"displayName":"Schema Service",
"type":"DB Util"
},
{
"id":"88-1V5WLG",
"name":"Migration Runtime Repository Data Service",
"displayName":"Runtime Repository Data Service",
"type":"DB Util"
},
{
"id":"88-1V5WLH",
"name":"Migration Application Workspace Data Service",
"displayName":"Application Workspace Data Service",
"type":"DB Util"
},
{
"id":"88-1V5WLI",
"name":"Migration Incremental Runtime Repository Data Service",
"displayName":"Incremental Runtime Repository Data Service",
"type":"DB Util"
},
{
"id":"88-1V5WLJ",
"name":"Migration Incremental Application Workspace Data Service",
"displayName":"Incremental Application Workspace Data Service",
"type":"DB Util"
},
{
"id":"88-1V5WLK",
"name":"Migration Application Data Service",
"displayName":"Application Data Service",
"type":"DB Util"
},
{
"id":"88-1V5WLL",
"name":"Migration Application Data Service With Transformation",
"displayName":"Application Data Service With Transformation",
"type":"DB Util"
},
{
"id":"88-1V5WLM",
"name":"MigrationFilePrepareAndDeploy",
"displayName":"File Prepare And Deploy",
"type":"DB Util"
},
{
"id":"88-1V5WLN",
"name":"FINS BIB",
"displayName":"FINS BIB",
"type":"ADM"
}
]
}
```

```
]
```

Getting a Connection by Name

You can get a connection for your migration by sending an HTTP GET request to the Siebel Migration Application.

The following details are for a request to get a connection by name for a migration:

- URI: **`https://{hostname}:{port}/siebel/v1.0/migration/connection/{connectionName}`**
- HTTP Method: GET
- Content-Type: application/json
- Authorization: Basic

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response body:


```
{
 "id":"88-1V5WLD",
 "name":"Prod",
 "restEndpoint":"https://slc07fnj.us.oracle.com:16690/siebel/v1.0",
 "isFavourite":"false",
 "uri":"https://slc07fnj.us.oracle.com:16690/siebel/v1.0",
 "connectionId":"88-1V5WLD",
 "resources":[
 {
 "id":"88-1V5WLE",
 "name":"Migration Schema Service",
 "displayName":"Schema Service",
 "type":"DB Util"
 },
 {
 "id":"88-1V5WLG",
 "name":"Migration Runtime Repository Data Service",
 "displayName":"Runtime Repository Data Service",
 "type":"DB Util"
 },
 {
 "id":"88-1V5WLH",
 "name":"Migration Application Workspace Data Service",
 "displayName":"Application Workspace Data Service",
 "type":"DB Util"
 },
 {
 "id":"88-1V5WLI",
 "name":"Migration Incremental Runtime Repository Data Service",
 "displayName":"Incremental Runtime Repository Data Service",
 "type":"DB Util"
 },
 {
 "id":"88-1V5WLJ",
 "name":"Migration Incremental Application Workspace Data Service",
 "displayName":"Incremental Application Workspace Data Service",
 "type":"DB Util"
 },
 {
 "id":"88-1V5WLK",
 "name":"Migration Application Data Service",
 "displayName":"Application Data Service",
 "type":"DB Util"
```

```
},
{
"id":"88-1V5WLL",
"name":"Migration Application Data Service With Transformation",
"displayName":"Application Data Service With Transformation",
"type":"DB Util"
},
{
"id":"88-1V5WLM",
"name":"MigrationFilePrepareAndDeploy",
"displayName":"File Prepare And Deploy",
"type":"DB Util"
},
{
"id":"88-1V5WLN",
"name":"FINS BIB",
"displayName":"FINS BIB",
"type":"ADM"
}
]
}
```

Creating a New Connection

You can create a new connection for your migration by sending an HTTP POST request to the Siebel Migration Application.

The following details are for a request to create a new connection for a migration:

- URI: **`https://{hostname}:{port}/siebel/v1.0/migration/connection`**
- HTTP Method: POST
- Content-Type: application/json
- Authorization: Basic
- Request Body:

```
{
 "name":"Demo Source",
 "restEndpoint":"https://{hostname}:{port}/siebel/v1.0",
 "isFavourite":"true"
}
```

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response Body:

```
{
 "id":"88-1V5ZL2",
 "name":"Demo Source",
 "restEndpoint":"https://{hostname}:{port}/siebel/v1.0",
 "isFavourite":"false",
 "resources":[
 {
 "id":"88-1V5ZL3",
 "name":"Migration Schema Service",
 "displayName":"Schema Service",
 "type":"DB Util"
 },
 {
 "id":"88-1V5ZL5",
 "name":"Migration Runtime Repository Data Service",
 "displayName":"Runtime Repository Data Service",
```

```
"type":"DB Util"
},
{
"id":"88-1V5ZL6",
"name":"Migration Application Workspace Data Service",
"displayName":"Application Workspace Data Service",
"type":"DB Util"
},
{
"id":"88-1V5ZL7",
"name":"Migration Incremental Runtime Repository Data Service",
"displayName":"Incremental Runtime Repository Data Service",
"type":"DB Util"
},
{
"id":"88-1V5ZL8",
"name":"Migration Incremental Application Workspace Data Service",
"displayName":"Incremental Application Workspace Data Service",
"type":"DB Util"
},
{
"id":"88-1V5ZL9",
"name":"Migration Application Data Service",
"displayName":"Application Data Service",
"type":"DB Util"
},
{
"id":"88-1V5ZLA",
"name":"Migration Application Data Service With Transformation",
"displayName":"Application Data Service With Transformation",
"type":"DB Util"
},
{
"id":"88-1V5ZLB",
"name":"MigrationFilePrepareAndDeploy",
"displayName":"File Prepare And Deploy",
"type":"DB Util"
},
{
"id":"88-1V5ZLC",
"name":"FINS BIB",
"displayName":"FINS BIB",
"type":"ADM"
}
]
}
```


Creating a Watermark for a Connection

You can create a watermark for your migration connection by sending an HTTP POST request to the Siebel Migration Application.

The following details are for a request to create a watermark for a migration connection:

- URI: **`https://{hostname}:{port}/siebel/v1.0/migration/connection/{connectionName}/watermark`**
- HTTP Method: POST
- Content-Type: application/json
- Authorization: Basic
- Request Body:

```
{
 "fileName":"demo.txt"
```

```
}
```

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response Body:

```
{
 "watermarkFile":"c:\\fs\\migration\\demo.txt"
}
```

Updating the Connection

You can update a connection for your migration by sending an HTTP PUT request to the Siebel Migration Application.

The following details are for a request to update a connection for a migration:

- URI: `https://{hostname}:{port}/siebel/v1.0/migration/connection/{connectionName}`
- HTTP Method: PUT
- Content-Type: application/json
- Authorization: Basic
- Request Body:

```
{
 "name":"Demo Dev",
 "restEndpoint":"https://{hostname}:{port}/siebel/v1.0",
 "isFavourite":"true"
}
```

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response Body:

```
{
 "id":"88-1V5ZL2",
 "name":"Demo Dev",
 "restEndpoint":"https://slc04ovj.us.oracle.com:5021/siebel/v1.0",
 "isFavourite":"true",
 "resources":[
 {
 "id":"88-1V5ZL3",
 "name":"Migration Schema Service",
 "displayName":"Schema Service",
 "type":"DB Util"
 },
 {
 "id":"88-1V5ZL5",
 "name":"Migration Runtime Repository Data Service",
 "displayName":"Runtime Repository Data Service",
 "type":"DB Util"
 },
 {
 "id":"88-1V5ZL6",
 "name":"Migration Application Workspace Data Service",
 "displayName":"Application Workspace Data Service",
 "type":"DB Util"
 },
 {
```

```
"id":"88-1V5ZL7",
"name":"Migration Incremental Runtime Repository Data Service",
"displayName":"Incremental Runtime Repository Data Service",
"type":"DB Util"
},
{
"id":"88-1V5ZL8",
"name":"Migration Incremental Application Workspace Data Service",
"displayName":"Incremental Application Workspace Data Service",
"type":"DB Util"
},
{
"id":"88-1V5ZL9",
"name":"Migration Application Data Service",
"displayName":"Application Data Service",
"type":"DB Util"
},
{
"id":"88-1V5ZLA",
"name":"Migration Application Data Service With Transformation",
"displayName":"Application Data Service With Transformation",
"type":"DB Util"
},
{
"id":"88-1V5ZLB",
"name":"MigrationFilePrepareAndDeploy",
"displayName":"File Prepare And Deploy",
"type":"DB Util"
},
{
"id":"88-1V5ZLC",
"name":"FINS BIB",
"displayName":"FINS BIB",
"type":"ADM"
}
]
}
```


Deleting a Connection

You can delete a migration connection by sending an HTTP DELETE request to the Siebel Migration Application.

The following details are for a request to delete a migration connection:

- URI: `https://{hostname}:{port}/siebel/v1.0/migration/connection/{connectionName}`
- HTTP Method: DELETE
- Content-Type: application/json
- Authorization: Basic

Using REST API to Configure Siebel Migration Application Migration Plans

You can use the Siebel Migration REST API to configure your migration plan. For more information, see the following subtopics:

- *Getting All Migration Plans*
- *Getting a Migration Plan by Name*

- *Creating a New Migration Plan*
- *Updating a Migration Plan*
- *Deleting a Migration Plan*

Getting All Migration Plans

You can get all migration plans for your migration by sending an HTTP GET request to the Siebel Migration Application.

The following details are for a request to get all migration plans for a migration:

- URI: **`https://{hostname}:{port}/siebel/v1.0/migration/plan`**
- HTTP Method: GET
- Content-Type: application/json
- Authorization: Basic

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response Body:


```
[
 {
 "id":"88-1V5WMR",
 "name":"IRRMigration",
 "description":"IRRMigration",
 "source":"Dev",
 "target":"Prod",
 "resources":[
 {
 "id":"88-1V5WMS",
 "name":"Migration Schema Service",
 "displayName":"Schema Service",
 "isSelected":"false",
 "integrationBranchName":"",
 "versionNumber":"0",
 "language":"",
 "sequenceNumber":"0"
 },
 {
 "id":"88-1V5WMU",
 "name":"Migration Runtime Repository Data Service",
 "displayName":"Runtime Repository Data Service",
 "isSelected":"false",
 "integrationBranchName":"",
 "versionNumber":"0",
 "language":"",
 "sequenceNumber":"0"
 },
 {
 "id":"88-1V5WMV",
 "name":"Migration Application Workspace Data Service",
 "displayName":"Application Workspace Data Service",
 "isSelected":"false",
 "integrationBranchName":"",
 "versionNumber":"0",
 "language":"",
 "sequenceNumber":"0"
 },
 {
 "id":"88-1V5WMW",
```

```
"name":"Migration Incremental Runtime Repository Data Service",
"displayName":"Incremental Runtime Repository Data Service",
"isSelected":"true",
"integrationBranchName":"",
"versionNumber":"0",
"language":"",
"sequenceNumber":"0"
},
{
"id":"88-1V5WMX",
"name":"Migration Incremental Application Workspace Data Service",
"displayName":"Incremental Application Workspace Data Service",
"isSelected":"false",
"integrationBranchName":"",
"versionNumber":"0",
"language":"",
"sequenceNumber":"0"
},
{
"id":"88-1V5WMY",
"name":"Migration Application Data Service",
"displayName":"Application Data Service",
"isSelected":"false",
"integrationBranchName":"",
"versionNumber":"0",
"language":"",
"sequenceNumber":"0"
},
{
"id":"88-1V5WMZ",
"name":"Migration Application Data Service With Transformation",
"displayName":"Application Data Service With Transformation",
"isSelected":"false",
"integrationBranchName":"",
"versionNumber":"0",
"language":"",
"sequenceNumber":"0"
},
{
"id":"88-1V5WN0",
"name":"MigrationFilePrepareAndDeploy",
"displayName":"File Prepare And Deploy",
"isSelected":"false",
"integrationBranchName":"",
"versionNumber":"0",
"language":"",
"sequenceNumber":"0"
},
{
"id":"88-1V5WN1",
"name":"FINS BIB",
"displayName":"FINS BIB",
"isSelected":"false",
"integrationBranchName":"",
"versionNumber":"0",
"language":"",
"sequenceNumber":"0"
}
]
},
{
"id":"88-1V5Y2U",
"name":"Data Mig",
"description":"Data Mig",
"source":"Dev",
"target":"Prod",
```

```
"resources":[
{
"id":"88-1V5Y2V",
"name":"Migration Schema Service",
"displayName":"Schema Service",
"isSelected":"false",
"integrationBranchName":"",
"versionNumber":"0",
"language":"",
"sequenceNumber":"0"
},
{
"id":"88-1V5Y2X",
"name":"Migration Runtime Repository Data Service",
"displayName":"Runtime Repository Data Service",
"isSelected":"false",
"integrationBranchName":"",
"versionNumber":"0",
"language":"",
"sequenceNumber":"0"
},
{
"id":"88-1V5Y2Y",
"name":"Migration Application Workspace Data Service",
"displayName":"Application Workspace Data Service",
"isSelected":"false",
"integrationBranchName":"",
"versionNumber":"0",
"language":"",
"sequenceNumber":"0"
},
{
"id":"88-1V5Y2Z",
"name":"Migration Incremental Runtime Repository Data Service",
"displayName":"Incremental Runtime Repository Data Service",
"isSelected":"false",
"integrationBranchName":"",
"versionNumber":"0",
"language":"",
"sequenceNumber":"0"
},
{
"id":"88-1V5Y30",
"name":"Migration Incremental Application Workspace Data Service",
"displayName":"Incremental Application Workspace Data Service",
"isSelected":"false",
"integrationBranchName":"",
"versionNumber":"0",
"language":"",
"sequenceNumber":"0"
},
{
"id":"88-1V5Y31",
"name":"Migration Application Data Service",
"displayName":"Application Data Service",
"isSelected":"true",
"integrationBranchName":"",
"versionNumber":"0",
"language":"",
"sequenceNumber":"0"
},
{
"id":"88-1V5Y32",
"name":"Migration Application Data Service With Transformation",
"displayName":"Application Data Service With Transformation",
"isSelected":"false",
```

```
"integrationBranchName":"",
"versionNumber":"0",
"language":"",
"sequenceNumber":"0"
},
{
"id":"88-1V5Y33",
"name":"MigrationFilePrepareAndDeploy",
"displayName":"File Prepare And Deploy",
"isSelected":"false",
"integrationBranchName":"",
"versionNumber":"0",
"language":"",
"sequenceNumber":"0"
},
{
"id":"88-1V5Y34",
"name":"FINS BIB",
"displayName":"FINS BIB",
"isSelected":"false",
"integrationBranchName":"",
"versionNumber":"0",
"language":"",
"sequenceNumber":"0"
}
]
}
]
```


Getting a Migration Plan by Name

You can get a migration plan by name for your migration by sending an HTTP GET request to the Siebel Migration Application.

The following details are for a request to update a connection for a migration:

- URI: **`https://{hostname}:{port}/siebel/v1.0/migration/plan/{planName}`**
- HTTP Method: GET
- Content-Type: application/json
- Authorization: Basic

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response Body:


```
{
"id":"88-1V5WMR",
"name":"IRRMigration",
"description":"IRRMigration",
"source":"Dev",
"target":"Prod",
"resources":[
{
"id":"88-1V5WMS",
"name":"Migration Schema Service",
"displayName":"Schema Service",
"isSelected":"false",
"integrationBranchName":"",
"versionNumber":"0",
"language":"",
```

```
"sequenceNumber":"0"
},
{
"id":"88-1V5WMU",
"name":"Migration Runtime Repository Data Service",
"displayName":"Runtime Repository Data Service",
"isSelected":"false",
"integrationBranchName":"",
"versionNumber":"0",
"language":"",
"sequenceNumber":"0"
},
{
"id":"88-1V5WMV",
"name":"Migration Application Workspace Data Service",
"displayName":"Application Workspace Data Service",
"isSelected":"false",
"integrationBranchName":"",
"versionNumber":"0",
"language":"",
"sequenceNumber":"0"
},
{
"id":"88-1V5WMW",
"name":"Migration Incremental Runtime Repository Data Service",
"displayName":"Incremental Runtime Repository Data Service",
"isSelected":"true",
"integrationBranchName":"",
"versionNumber":"0",
"language":"",
"sequenceNumber":"0"
},
{
"id":"88-1V5WMX",
"name":"Migration Incremental Application Workspace Data Service",
"displayName":"Incremental Application Workspace Data Service",
"isSelected":"false",
"integrationBranchName":"",
"versionNumber":"0",
"language":"",
"sequenceNumber":"0"
},
{
"id":"88-1V5WMY",
"name":"Migration Application Data Service",
"displayName":"Application Data Service",
"isSelected":"false",
"integrationBranchName":"",
"versionNumber":"0",
"language":"",
"sequenceNumber":"0"
},
{
"id":"88-1V5WMZ",
"name":"Migration Application Data Service With Transformation",
"displayName":"Application Data Service With Transformation",
"isSelected":"false",
"integrationBranchName":"",
"versionNumber":"0",
"language":"",
"sequenceNumber":"0"
},
{
"id":"88-1V5WN0",
"name":"MigrationFilePrepareAndDeploy",
"displayName":"File Prepare And Deploy",
```

```
"isSelected":"false",
"integrationBranchName":"",
"versionNumber":"0",
"language":"",
"sequenceNumber":"0"
},
{
"id":"88-1V5WN1",
"name":"FINS BIB",
"displayName":"FINS BIB",
"isSelected":"false",
"integrationBranchName":"",
"versionNumber":"0",
"language":"",
"sequenceNumber":"0"
}
]
},
```


Creating a New Migration Plan

You can create a new migration plan for your migration by sending an HTTP POST request to the Siebel Migration Application.

The following details are for a request to create a new migration plan for a migration:

- URI: **`https://{hostname}:{port}/siebel/v1.0/migration/plan`**
- HTTP Method: POST
- Content-Type: application/json
- Authorization: Basic
- Request Body:


```
{
 "name":"Demo Data Mig",
 "description":"Demo Data Migration",
 "source":"Dev",
 "target":"Prod",
 "resources":[
 {
 "id":"88-1V5WLP",
 "name":"Migration Schema Service",
 "displayName":"Schema Service",
 "isSelected":"false",
 "integrationBranchName":"",
 "versionNumber":"0",
 "language":"",
 "sequenceNumber":"0"
 },
 {
 "id":"88-1V5WLR",
 "name":"Migration Runtime Repository Data Service",
 "displayName":"Runtime Repository Data Service",
 "isSelected":"false",
 "integrationBranchName":"",
 "versionNumber":"0",
 "language":"",
 "sequenceNumber":"0"
 },
 {
 "id":"88-1V5WLS",
 "name":"Migration Application Workspace Data Service",
 "displayName":"Application Workspace Data Service",
 "isSelected":"false",
```

```
"integrationBranchName":"",
"versionNumber":"0",
"language":"",
"sequenceNumber":"0"
},
{
"id":"88-1V5WLT",
"name":"Migration Incremental Runtime Repository Data Service",
"displayName":"Incremental Runtime Repository Data Service",
"isSelected":"false",
"integrationBranchName":"",
"versionNumber":"0",
"language":"",
"sequenceNumber":"0"
},
{
"id":"88-1V5WLU",
"name":"Migration Incremental Application Workspace Data Service",
"displayName":"Incremental Application Workspace Data Service",
"isSelected":"false",
"integrationBranchName":"",
"versionNumber":"0",
"language":"",
"sequenceNumber":"0"
},
{
"id":"88-1V5WLV",
"name":"Migration Application Data Service",
"displayName":"Application Data Service",
"isSelected":"true",
"integrationBranchName":"",
"versionNumber":"0",
"language":"",
"sequenceNumber":"0"
},
{
"id":"88-1V5WLW",
"name":"Migration Application Data Service With Transformation",
"displayName":"Application Data Service With Transformation",
"isSelected":"false",
"integrationBranchName":"",
"versionNumber":"0",
"language":"",
"sequenceNumber":"0"
},
{
"id":"88-1V5WLX",
"name":"MigrationFilePrepareAndDeploy",
"displayName":"File Prepare And Deploy",
"isSelected":"false",
"integrationBranchName":"",
"versionNumber":"0",
"language":"",
"sequenceNumber":"0"
},
{
"id":"88-1V5WLY",
"name":"FINS BIB",
"displayName":"FINS BIB",
"isSelected":"false",
"integrationBranchName":"",
"versionNumber":"0",
"language":"",
"sequenceNumber":"0"
}
]
```

```
}
```

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response Body:


```
{
 "name":"Demo Data Mig",
 "description":"Demo Data Migration",
 "source":"Dev",
 "target":"Prod",
 "resources":[
 {
 "id":"88-1V5WLP",
 "name":"Migration Schema Service",
 "displayName":"Schema Service",
 "isSelected":"false",
 "integrationBranchName":"",
 "versionNumber":"0",
 "language":"",
 "sequenceNumber":"0"
 },
 {
 "id":"88-1V5WLR",
 "name":"Migration Runtime Repository Data Service",
 "displayName":"Runtime Repository Data Service",
 "isSelected":"false",
 "integrationBranchName":"",
 "versionNumber":"0",
 "language":"",
 "sequenceNumber":"0"
 },
 {
 "id":"88-1V5WLS",
 "name":"Migration Application Workspace Data Service",
 "displayName":"Application Workspace Data Service",
 "isSelected":"false",
 "integrationBranchName":"",
 "versionNumber":"0",
 "language":"",
 "sequenceNumber":"0"
 },
 {
 "id":"88-1V5WLT",
 "name":"Migration Incremental Runtime Repository Data Service",
 "displayName":"Incremental Runtime Repository Data Service",
 "isSelected":"false",
 "integrationBranchName":"",
 "versionNumber":"0",
 "language":"",
 "sequenceNumber":"0"
 },
 {
 "id":"88-1V5WLU",
 "name":"Migration Incremental Application Workspace Data Service",
 "displayName":"Incremental Application Workspace Data Service",
 "isSelected":"false",
 "integrationBranchName":"",
 "versionNumber":"0",
 "language":"",
 "sequenceNumber":"0"
 },
 {
```

```
"id":"88-1V5WLV",
"name":"Migration Application Data Service",
"displayName":"Application Data Service",
"isSelected":"true",
"integrationBranchName":"",
"versionNumber":"0",
"language":"",
"sequenceNumber":"0"
},
{
"id":"88-1V5WLW",
"name":"Migration Application Data Service With Transformation",
"displayName":"Application Data Service With Transformation",
"isSelected":"false",
"integrationBranchName":"",
"versionNumber":"0",
"language":"",
"sequenceNumber":"0"
},
{
"id":"88-1V5WLX",
"name":"MigrationFilePrepareAndDeploy",
"displayName":"File Prepare And Deploy",
"isSelected":"false",
"integrationBranchName":"",
"versionNumber":"0",
"language":"",
"sequenceNumber":"0"
},
{
"id":"88-1V5WLY",
"name":"FINS BIB",
"displayName":"FINS BIB",
"isSelected":"false",
"integrationBranchName":"",
"versionNumber":"0",
"language":"",
"sequenceNumber":"0"
}
]
}
```


Updating a Migration Plan

You can update a migration plan for your migration by sending an HTTP PUT request to the Siebel Migration Application.

The following details are for a request to update a migration plan for a migration:

- URI: **`https://{hostname}:{port}/siebel/v1.0/migration/plan/{planName}`**
- HTTP Method: PUT
- Content-Type: application/json
- Authorization: Basic
- Request Body:


```
{
"name":"Demo Data Migration Plan",
"description":"Demo Data Migration for Winter",
"source":"Dev",
"target":"Prod",
"resources":[
{
"name":"Migration Schema Service",
"displayName":"Schema Service",
```

```
"isSelected":"false",
"integrationBranchName":"",
"versionNumber":"0",
"language":"",
"sequenceNumber":"0"
},
{
"name":"Migration Runtime Repository Data Service",
"displayName":"Runtime Repository Data Service",
"isSelected":"false",
"integrationBranchName":"",
"versionNumber":"0",
"language":"",
"sequenceNumber":"0"
},
{
"name":"Migration Application Workspace Data Service",
"displayName":"Application Workspace Data Service",
"isSelected":"false",
"integrationBranchName":"",
"versionNumber":"0",
"language":"",
"sequenceNumber":"0"
},
{
"name":"Migration Incremental Runtime Repository Data Service",
"displayName":"Incremental Runtime Repository Data Service",
"isSelected":"false",
"integrationBranchName":"",
"versionNumber":"0",
"language":"",
"sequenceNumber":"0"
},
{
"name":"Migration Incremental Application Workspace Data Service",
"displayName":"Incremental Application Workspace Data Service",
"isSelected":"false",
"integrationBranchName":"",
"versionNumber":"0",
"language":"",
"sequenceNumber":"0"
},
{
"name":"Migration Application Data Service",
"displayName":"Application Data Service",
"isSelected":"true",
"integrationBranchName":"",
"versionNumber":"0",
"language":"",
"sequenceNumber":"0"
},
{
"name":"Migration Application Data Service With Transformation",
"displayName":"Application Data Service With Transformation",
"isSelected":"false",
"integrationBranchName":"",
"versionNumber":"0",
"language":"",
"sequenceNumber":"0"
},
{
"name":"MigrationFilePrepareAndDeploy",
"displayName":"File Prepare And Deploy",
"isSelected":"true",
"integrationBranchName":"",
"versionNumber":"0",
```

```
"language":"",
"sequenceNumber":"0"
},
{
"name":"FINS BIB",
"displayName":"FINS BIB",
"isSelected":"false",
"integrationBranchName":"",
"versionNumber":"0",
"language":"",
"sequenceNumber":"0"
}
]
}
```


The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response Body: None

Deleting a Migration Plan

You can delete for your migration by sending an HTTP DELETE request to the Siebel Migration Application.

The following details are for a request to delete a migration plan for a migration:

- URI: **`https://{hostname}:{port}/siebel/v1.0/migration/plan/{planName}`**
- HTTP Method: DELETE
- Content-Type: application/json
- Authorization: Basic
- Request Body:
  None

The following are the details for the response to a successful request:

- HTTP Code: 200
- Response Body: None

Using REST API to Execute Siebel Migration Plans

You can use the Siebel Migration REST API to execute migration plans. For more information, see the following subtopics:

- *Executing a Migration Plan*
- *Getting Status for a Running Migration Plan by Name*
- *Getting Status for a Running Migration Plan by Plan Name and Resource Name*
- *Getting Execution Status by Migration Plan Name, Resource Name, and Operation*
- *Getting the Migration Execution Operation Log*

Executing a Migration Plan

You can execute a migration plan for your migration by sending an HTTP POST request to the Siebel Migration Application.

Depending on the migration service that you selected in your migration plan, you must provide the following additional information in your REST API request:

- If you selected a Schema Service with Export & Import or Import only for your migration plan, then you must provide the following parameters and values in your REST API request:
  - schemaUser. The name of the schema user.
  - schemaPassword. The password for the schema user. The schemaPassword must be encrypted by using base64 in the REST API request.
  - isUnicodeDatabase. If you are using a NON-UNICODE Database, then you must select the NON-UNICODE Database option.
- If you selected the Incremental Runtime Repository or the Incremental Application Workspace Data Service or the File Prepare and Deploy Service with Export only for your migration plan, then you must provide the watermarkFilename parameter and value in your REST API request.
- If you want to only migrate a specific version when run the Incremental Runtime Repository (Export & Import or Export only) migration, then you must provide the irrEndVersion parameter and value in the REST API request. If you do not provide the irrEndVersion parameter and value, then, the migration migrates up to the latest version.
- For all Export only or Import only migration plans, you must provide the packageFilename parameter and value in the REST API request.

The following details are for a request to update a connection for a migration:

- URI: **`https://{hostname}:{port}/siebel/v1.0/migration/execution/{planName}`**
- HTTP Method: POST
- Content-Type: application/json
- Authorization: Basic
- Request Body:

```
{
 "schemaUser":"",
 "schemaPassword":"",
 "watermarkFilename":"",
 "irrEndVersion":"",
 "packageFilename":"",
 "isUnicodeDatabase":""
}
```

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response Body:

```
{
 "id":"88-1V5YFC",
 "planName":"Data Mig",
 "description":"Data Mig",
 "status":"Running",
 "startDate":"2018-07-24 09:50:20",
 "endDate":"",
 "source":"Dev",
 "target":"Prod",
 "packageName":"",
 "resources":[
 {
 "id":"88-1V5YFD",
 "name":"",
```

```
 "operation":"Export",
 "sequenceNumber":"1",
 "mode":"Asynchronous",
 "status":"Not Started",
 "startTime":"",
 "endTime":"",
 "resourceType":""
 },
 {
 "id":"88-1V5YFE",
 "name":"",
 "operation":"Import",
 "sequenceNumber":"2",
 "mode":"Asynchronous",
 "status":"Not Started",
 "startTime":"",
 "endTime":"",
 "resourceType":""
 }
 ]
}
```


Getting Status for a Running Migration Plan by Name

You can get status for a running migration plan by name for your migration by sending an HTTP GET request to the Siebel Migration Application.

The following details are for a request to get status for a migration plan by name for a migration:

- URI: `https://{hostname}:{port}/siebel/v1.0/migration/execution/{planName}`
- HTTP Method: GET
- Content-Type: application/json
- Authorization: Basic
- Request Body: None

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response Body:


```
{
 "id":"88-1V5WPF",
 "planName":"IRRMigration",
 "description":"IRR Migration",
 "status":"Running",
 "startDate":"2018-07-17 04:33:54",
 "endDate":"",
 "source":"Dev",
 "target":"Prod",
 "packageName":"",
 "resources":[
 {
 "id":"88-1V5WPG",
 "name":"",
 "operation":"Export",
 "sequenceNumber":"1",
 "mode":"Asynchronous",
 "status":"Not Applicable",
 "startTime":"",
 "endTime":"",
 "resourceType":""
```

```
},
{
"id":"88-1V5WPH",
"name":"",
"operation":"Import",
"sequenceNumber":"2",
"mode":"Asynchronous",
"status":"Not Applicable",
"startTime":"",
"endTime":"",
"resourceType":""
},
{
"id":"88-1V5WPI",
"name":"",
"operation":"Export",
"sequenceNumber":"3",
"mode":"Asynchronous",
"status":"Running",
"startTime":"2018-07-17 04:33:55",
"endTime":"",
"resourceType":""
},
{
"id":"88-1V5WPJ",
"name":"",
"operation":"Import",
"sequenceNumber":"4",
"mode":"Asynchronous",
"status":"Not Started",
"startTime":"",
"endTime":"",
"resourceType":""
},
{
"id":"88-1V5WPK",
"name":"",
"operation":"ActivateWorkflowsTasks",
"sequenceNumber":"5",
"mode":"Asynchronous",
"status":"Not Started",
"startTime":"",
"endTime":"",
"resourceType":""
},
{
"id":"88-1V5WPL",
"name":"",
"operation":"DBCheck",
"sequenceNumber":"6",
"mode":"Asynchronous",
"status":"Not Started",
"startTime":"",
"endTime":"",
"resourceType":""
}
]
}
```


Getting Status for a Running Migration Plan by Plan Name and Resource Name

You can get status for a running migration plan by plan name and resource name for your migration by sending an HTTP GET request to the Siebel Migration Application.

The following details are for a request to get status for a running migration plan by plan name and resource name for a migration:

- URI: **https://{hostname}:{port}/siebel/v1.0/migration/execution/{planName}/{resourceName}**
- HTTP Method: GET
- Content-Type: application/json
- Authorization: Basic
- Request Body: None

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response Body:


```
{
 "id":"88-1V60OJ",
 "planName":"Repo Export",
 "description":"Repo Export",
 "status":"Running",
 "startDate":"2018-08-17 06:02:39",
 "endDate":"",
 "source":"Dev",
 "target":"",
 "packageName":"irr_export.zip",
 "resources":[
 {
 "id":"88-1V61H2",
 "name":"Incremental Runtime Repository Data Service",
 "operation":"Export",
 "sequenceNumber":"1",
 "mode":"Asynchronous",
 "status":"Running",
 "startTime":"2018-08-17 06:02:39",
 "endTime":"",
 "resourceType":"DB Util"
 }
 ]
}
```


Getting Execution Status by Migration Plan Name, Resource Name, and Operation

You can get execution status by migration plan name, resource name, and operation for your migration by sending an HTTP GET request to the Siebel Migration Application.

The following details are for a request to get execution status by migration plan name, resource name, and operation for a migration:

- URI: **https://{hostname}:{port}/siebel/v1.0/migration/execution/{planName}/{resourceName}/{operation}**
- HTTP Method: GET
- Content-Type: application/json
- Authorization: Basic
- Request Body: None

The following are the details for the response to a successful request:

- HTTP Code: 200

- Content-Type: application/json
- Response Body:


```
{
 "id":"88-1V5WPF",
 "planName":"Test REST Execution",
 "description":"Test REST Execution",
 "status":"Running",
 "startDate":"2018-07-17 04:33:54",
 "endDate":"",
 "source":"Dev",
 "target":"Prod",
 "packageName":"",
 "resources":[
 {
 "id":"88-1V5WPI",
 "name":"Incremental Runtime Repository Data Service",
 "operation":"Export",
 "sequenceNumber":"3",
 "mode":"Asynchronous",
 "status":"Running",
 "startTime":"2018-07-17 04:33:55",
 "endTime":"",
 "resourceType":""
 }
 ]
}
```


Getting the Migration Execution Operation Log

You can get the migration execution operation log for your migration by sending an HTTP GET request to the Siebel Migration Application.

The following details are for a request to get the migration execution operation log for a migration:

- URI: **`https://{hostname}:{port}/siebel/v1.0/migration/execution/{planName}/{resourceName}/{operation}/log`**
- HTTP Method: GET
- Content-Type: application/json
- Authorization: Basic
- Request Body: None

The response returns the migration execution operation log for your migration. The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json

Using REST API to Get Siebel Migration Plan History

You can use the Siebel Migration REST API to get migration plan history.

This topic includes the following topics:

- *Getting All Migration History*
- *Getting Migration History by Migration Plan Name*
- *Getting Migration History by ID Number*

- *Getting Migration History by ID and Resource Name*
- *Getting Migration History by ID, Resource Name, and Operation*
- *Getting the Migration History Operation Log*

Getting All Migration History

You can get all the history for your migration by sending an HTTP GET request to the Siebel Migration Application.

The following details are for a request to get all the history for a migration:

- URI: **`https://{hostname}:{port}/siebel/v1.0/migration/history`**
- HTTP Method: GET
- Content-Type: application/json
- Authorization: Basic
- Request Body: None

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response Body:


```
[
 {
 "id":"88-1V5YFC",
 "planName":"Data Mig",
 "description":"Data Mig",
 "status":"Success",
 "startDate":"2018-07-24 09:50:20",
 "endDate":"2018-07-24 09:51:07",
 "source":"Dev",
 "target":"Prod",
 "packageName":"",
 "resources":[
 {
 "id":"88-1V5YFD",
 "name":"Application Data Service",
 "operation":"Export",
 "sequenceNumber":"1",
 "mode":"Asynchronous",
 "status":"Success",
 "startTime":"2018-07-24 09:50:20",
 "endTime":"2018-07-24 09:50:36",
 "resourceType":"DB Util"
 },
 {
 "id":"88-1V5YFE",
 "name":"Application Data Service",
 "operation":"Import",
 "sequenceNumber":"2",
 "mode":"Asynchronous",
 "status":"Success",
 "startTime":"2018-07-24 09:50:52",
 "endTime":"2018-07-24 09:51:07",
 "resourceType":"DB Util"
 }
 ]
 },
 {
 "id":"88-1V5Y4X",
```

```
"planName":"Data Mig",
"description":"Data Mig",
"status":"Success",
"startDate":"2018-07-23 02:47:14",
"endDate":"2018-07-23 02:48:00",
"source":"Dev",
"target":"Prod",
"packageName":"",
"resources":[
{
"id":"88-1V5Y4Y",
"name":"Application Data Service",
"operation":"Export",
"sequenceNumber":"1",
"mode":"Asynchronous",
"status":"Success",
"startTime":"2018-07-23 02:47:14",
"endTime":"2018-07-23 02:47:29",
"resourceType":"DB Util"
},
{
"id":"88-1V5Y4Z",
"name":"Application Data Service",
"operation":"Import",
"sequenceNumber":"2",
"mode":"Asynchronous",
"status":"Success",
"startTime":"2018-07-23 02:47:44",
"endTime":"2018-07-23 02:47:59",
"resourceType":"DB Util"
}
]
},
{
"id":"88-1V5WOX",
"planName":"IRRMigration",
"description":"IRRMigration",
"status":"Error",
"startDate":"2018-07-17 04:29:06",
"endDate":"2018-07-17 04:29:22",
"source":"Dev",
"target":"Prod1",
"packageName":"",
"resources":[
{
"id":"88-1V5WP0",
"name":"Incremental Runtime Repository Data Service",
"operation":"Export",
"sequenceNumber":"1",
"mode":"Asynchronous",
"status":"Error",
"startTime":"2018-07-17 04:29:07",
"endTime":"2018-07-17 04:29:22",
"resourceType":"DB Util"
},
{
"id":"88-1V5WP1",
"name":"Incremental Runtime Repository Data Service",
"operation":"Import",
"sequenceNumber":"2",
"mode":"Asynchronous",
"status":"Not Started",
"startTime":"",
"endTime":"",
"resourceType":"DB Util"
},
```

```
{
"id":"88-1V5WP2",
"name":"Incremental Runtime Repository Data Service",
"operation":"ActivateWorkflowsTasks",
"sequenceNumber":"3",
"mode":"Asynchronous",
"status":"Not Started",
"startTime":"",
"endTime":"",
"resourceType":"DB Util"
},
{
"id":"88-1V5WP3",
"name":"Incremental Runtime Repository Data Service",
"operation":"DBCheck",
"sequenceNumber":"4",
"mode":"Asynchronous",
"status":"Not Started",
"startTime":"",
"endTime":"",
"resourceType":"DB Util"
}
]
},
{
"id":"88-1V5WOU",
"planName":"Rest Testing",
"description":"Rest Testing",
"status":"Error",
"startDate":"2018-07-17 04:28:35",
"endDate":"2018-07-17 04:28:51",
"source":"Dev",
"target":"Prod1",
"packageName":"",
"resources":[
{
"id":"88-1V5WOV",
"name":"Application Data Service",
"operation":"Export",
"sequenceNumber":"1",
"mode":"Asynchronous",
"status":"Error",
"startTime":"2018-07-17 04:28:35",
"endTime":"2018-07-17 04:28:51",
"resourceType":"DB Util"
},
{
"id":"88-1V5WOW",
"name":"Application Data Service",
"operation":"Import",
"sequenceNumber":"2",
"mode":"Asynchronous",
"status":"Not Started",
"startTime":"",
"endTime":"",
"resourceType":"DB Util"
}
]
},
{
"id":"88-1V5WON",
"planName":"IRRMigration",
"description":"IRRMigration",
"status":"Error",
"startDate":"2018-07-17 04:28:06",
"endDate":"2018-07-17 04:28:22",
```

```
 "source":"Dev",
 "target":"Prod1",
 "packageName":"",
 "resources":[
 {
 "id":"88-1V5WOQ",
 "name":"Incremental Runtime Repository Data Service",
 "operation":"Export",
 "sequenceNumber":"1",
 "mode":"Asynchronous",
 "status":"Error",
 "startTime":"2018-07-17 04:28:07",
 "endTime":"2018-07-17 04:28:22",
 "resourceType":"DB Util"
 },
 {
 "id":"88-1V5WOR",
 "name":"Incremental Runtime Repository Data Service",
 "operation":"Import",
 "sequenceNumber":"2",
 "mode":"Asynchronous",
 "status":"Not Started",
 "startTime":"",
 "endTime":"",
 "resourceType":"DB Util"
 },
 {
 "id":"88-1V5WOS",
 "name":"Incremental Runtime Repository Data Service",
 "operation":"ActivateWorkflowsTasks",
 "sequenceNumber":"3",
 "mode":"Asynchronous",
 "status":"Not Started",
 "startTime":"",
 "endTime":"",
 "resourceType":"DB Util"
 },
 {
 "id":"88-1V5WOT",
 "name":"Incremental Runtime Repository Data Service",
 "operation":"DBCheck",
 "sequenceNumber":"4",
 "mode":"Asynchronous",
 "status":"Not Started",
 "startTime":"",
 "endTime":"",
 "resourceType":"DB Util"
 }
 ]
 }
]
```


Getting Migration History by Migration Plan Name

You can get the migration history by migration plan name for your migration by sending an HTTP GET request to the Siebel Migration Application.

The following details are for a request to get the migration history by migration plan name for a migration:

- URI: **`https://{hostname}:{port}/siebel/v1.0/migration/history?plan=<planName>`**
- HTTP Method: GET
- Content-Type: application/json

- Authorization: Basic
- Request Body: None

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response Body:


```
[
 {
 "id":"88-1V5YFF",
 "planName":"Data Mig",
 "description":"Data Mig",
 "status":"Success",
 "startDate":"2018-07-24 08:44:42",
 "endDate":"2018-07-24 08:45:27",
 "source":"Dev",
 "target":"Prod",
 "packageName":"",
 "resources":[
 {
 "id":"88-1V5YFG",
 "name":"Application Data Service",
 "operation":"Export",
 "sequenceNumber":"1",
 "mode":"Asynchronous",
 "status":"Success",
 "startTime":"2018-07-24 08:44:42",
 "endTime":"2018-07-24 08:44:57",
 "resourceType":"DB Util"
 },
 {
 "id":"88-1V5YFH",
 "name":"Application Data Service",
 "operation":"Import",
 "sequenceNumber":"2",
 "mode":"Asynchronous",
 "status":"Success",
 "startTime":"2018-07-24 08:45:12",
 "endTime":"2018-07-24 08:45:27",
 "resourceType":"DB Util"
 }
 ]
 },
 {
 "id":"88-1V5YFC",
 "planName":"Data Mig",
 "description":"Data Mig",
 "status":"Success",
 "startDate":"2018-07-24 09:50:20",
 "endDate":"2018-07-24 09:51:07",
 "source":"Dev",
 "target":"Prod",
 "packageName":null,
 "resources":[
 {
 "id":"88-1V5YFD",
 "name":"Application Data Service",
 "operation":"Export",
 "sequenceNumber":"1",
 "mode":"Asynchronous",
 "status":"Success",
 "startTime":"2018-07-24 09:50:20",
 "endTime":"2018-07-24 09:50:36",
```

```
"resourceType":"DB Util"
},
{
"id":"88-1V5YFE",
"name":"Application Data Service",
"operation":"Import",
"sequenceNumber":"2",
"mode":"Asynchronous",
"status":"Success",
"startTime":"2018-07-24 09:50:52",
"endTime":"2018-07-24 09:51:07",
"resourceType":"DB Util"
}
]
},
{
"id":"88-1V5YB6",
"planName":"Data Mig",
"description":"Data Mig",
"status":"Success",
"startDate":"2018-07-23 09:37:39",
"endDate":"2018-07-23 09:38:24",
"source":"Dev",
"target":"Prod",
"packageName":null,
"resources":[
{
"id":"88-1V5YB7",
"name":"Application Data Service",
"operation":"Export",
"sequenceNumber":"1",
"mode":"Asynchronous",
"status":"Success",
"startTime":"2018-07-23 09:37:39",
"endTime":"2018-07-23 09:37:54",
"resourceType":"DB Util"
},
{
"id":"88-1V5YB8",
"name":"Application Data Service",
"operation":"Import",
"sequenceNumber":"2",
"mode":"Asynchronous",
"status":"Success",
"startTime":"2018-07-23 09:38:09",
"endTime":"2018-07-23 09:38:24",
"resourceType":"DB Util"
}
]
},
{
"id":"88-1V5YAK",
"planName":"Data Mig",
"description":"Data Mig",
"status":"Success",
"startDate":"2018-07-23 09:09:48",
"endDate":"2018-07-23 09:10:34",
"source":"Dev",
"target":"Prod",
"packageName":"",
"resources":[
{
"id":"88-1V5YAL",
"name":"Application Data Service",
"operation":"Export",
"sequenceNumber":"1",
```

```
"mode":"Asynchronous",
"status":"Success",
"startTime":"2018-07-23 09:09:48",
"endTime":"2018-07-23 09:10:03",
"resourceType":"DB Util"
},
{
"id":"88-1V5YAM",
"name":"Application Data Service",
"operation":"Import",
"sequenceNumber":"2",
"mode":"Asynchronous",
"status":"Success",
"startTime":"2018-07-23 09:10:19",
"endTime":"2018-07-23 09:10:34",
"resourceType":"DB Util"
}
]
},
{
"id":"88-1V5YAH",
"planName":"Data Mig",
"description":"Data Mig",
"status":"Success",
"startDate":"2018-07-23 07:19:46",
"endDate":"2018-07-23 07:20:32",
"source":"Dev",
"target":"Prod",
"packageName":null,
"resources":[
{
"id":"88-1V5YAI",
"name":"Application Data Service",
"operation":"Export",
"sequenceNumber":"1",
"mode":"Asynchronous",
"status":"Success",
"startTime":"2018-07-23 07:19:46",
"endTime":"2018-07-23 07:20:01",
"resourceType":"DB Util"
},
{
"id":"88-1V5YAJ",
"name":"Application Data Service",
"operation":"Import",
"sequenceNumber":"2",
"mode":"Asynchronous",
"status":"Success",
"startTime":"2018-07-23 07:20:16",
"endTime":"2018-07-23 07:20:32",
"resourceType":"DB Util"
}
]
},
{
"id":"88-1V5Y6J",
"planName":"Data Mig",
"description":"Data Mig",
"status":"Success",
"startDate":"2018-07-23 06:20:12",
"endDate":"2018-07-23 06:20:58",
"source":"Dev",
"target":"Prod",
"packageName":null,
"resources":[
{
```

```
"id":"88-1V5Y6K",
"name":"Application Data Service",
"operation":"Export",
"sequenceNumber":"1",
"mode":"Asynchronous",
"status":"Success",
"startTime":"2018-07-23 06:20:12",
"endTime":"2018-07-23 06:20:27",
"resourceType":"DB Util"
},
{
"id":"88-1V5Y6L",
"name":"Application Data Service",
"operation":"Import",
"sequenceNumber":"2",
"mode":"Asynchronous",
"status":"Success",
"startTime":"2018-07-23 06:20:43",
"endTime":"2018-07-23 06:20:58",
"resourceType":"DB Util"
}
]
},
{
"id":"88-1V5Y5Y",
"planName":"Data Mig",
"description":"Data Mig",
"status":"Success",
"startDate":"2018-07-23 06:11:24",
"endDate":"2018-07-23 06:12:37",
"source":"Dev",
"target":"Prod",
"packageName":null,
"resources":[
{
"id":"88-1V5Y5Z",
"name":"Application Data Service",
"operation":"Export",
"sequenceNumber":"1",
"mode":"Asynchronous",
"status":"Success",
"startTime":"2018-07-23 06:11:24",
"endTime":"2018-07-23 06:11:39",
"resourceType":"DB Util"
},
{
"id":"88-1V5Y60",
"name":"Application Data Service",
"operation":"Import",
"sequenceNumber":"2",
"mode":"Asynchronous",
"status":"Success",
"startTime":"2018-07-23 06:11:54",
"endTime":"2018-07-23 06:12:37",
"resourceType":"DB Util"
}
]
},
{
"id":"88-1V5Y5S",
"planName":"Data Mig",
"description":"Data Mig",
"status":"Success",
"startDate":"2018-07-23 06:11:13",
"endDate":"2018-07-23 06:12:17",
"source":"Dev",
```

```
"target":"Prod",
"packageName":null,
"resources":[
{
"id":"88-1V5Y5T",
"name":"Application Data Service",
"operation":"Export",
"sequenceNumber":"1",
"mode":"Asynchronous",
"status":"Success",
"startTime":"2018-07-23 06:11:13",
"endTime":"2018-07-23 06:11:28",
"resourceType":"DB Util"
},
{
"id":"88-1V5Y5U",
"name":"Application Data Service",
"operation":"Import",
"sequenceNumber":"2",
"mode":"Asynchronous",
"status":"Success",
"startTime":"2018-07-23 06:11:43",
"endTime":"2018-07-23 06:12:17",
"resourceType":"DB Util"
}
]
},
{
"id":"88-1V5Y5M",
"planName":"Data Mig",
"description":"Data Mig",
"status":"Success",
"startDate":"2018-07-23 06:11:07",
"endDate":"2018-07-23 06:11:53",
"source":"Dev",
"target":"Prod",
"packageName":null,
"resources":[
{
"id":"88-1V5Y5N",
"name":"Application Data Service",
"operation":"Export",
"sequenceNumber":"1",
"mode":"Asynchronous",
"status":"Success",
"startTime":"2018-07-23 06:11:07",
"endTime":"2018-07-23 06:11:22",
"resourceType":"DB Util"
},
{
"id":"88-1V5Y5O",
"name":"Application Data Service",
"operation":"Import",
"sequenceNumber":"2",
"mode":"Asynchronous",
"status":"Success",
"startTime":"2018-07-23 06:11:38",
"endTime":"2018-07-23 06:11:53",
"resourceType":"DB Util"
}
]
},
{
"id":"88-1V5Y5P",
"planName":"Data Mig",
"description":"Data Mig",
```

```
"status":"Error",
"startDate":"2018-07-23 06:11:09",
"endDate":"2018-07-23 06:11:39",
"source":"Dev",
"target":"Prod",
"packageName":null,
"resources":[
{
"id":"88-1V5Y5Q",
"name":"Application Data Service",
"operation":"Export",
"sequenceNumber":"1",
"mode":"Asynchronous",
"status":"Success",
"startTime":"2018-07-23 06:11:09",
"endTime":"2018-07-23 06:11:24",
"resourceType":"DB Util"
},
{
"id":"88-1V5Y5R",
"name":"Application Data Service",
"operation":"Import",
"sequenceNumber":"2",
"mode":"Asynchronous",
"status":"Not Started",
"startTime":"",
"endTime":"",
"resourceType":"DB Util"
}
]
},
{
"id":"88-1V5Y4X",
"planName":"Data Mig",
"description":"Data Mig",
"status":"Success",
"startDate":"2018-07-23 02:47:14",
"endDate":"2018-07-23 02:48:00",
"source":"Dev",
"target":"Prod",
"packageName":null,
"resources":[
{
"id":"88-1V5Y4Y",
"name":"Application Data Service",
"operation":"Export",
"sequenceNumber":"1",
"mode":"Asynchronous",
"status":"Success",
"startTime":"2018-07-23 02:47:14",
"endTime":"2018-07-23 02:47:29",
"resourceType":"DB Util"
},
{
"id":"88-1V5Y4Z",
"name":"Application Data Service",
"operation":"Import",
"sequenceNumber":"2",
"mode":"Asynchronous",
"status":"Success",
"startTime":"2018-07-23 02:47:44",
"endTime":"2018-07-23 02:47:59",
"resourceType":"DB Util"
}
]
},
```

```
{
"id":"88-1V5Y4B",
"planName":"Data Mig",
"description":"Data Mig",
"status":"Success",
"startDate":"2018-07-23 02:36:26",
"endDate":"2018-07-23 02:38:36",
"source":"Dev",
"target":"Prod",
"packageName":null,
"resources":[
{
"id":"88-1V5Y4C",
"name":"Application Data Service",
"operation":"Export",
"sequenceNumber":"1",
"mode":"Asynchronous",
"status":"Success",
"startTime":"2018-07-23 02:37:50",
"endTime":"2018-07-23 02:38:06",
"resourceType":"DB Util"
},
{
"id":"88-1V5Y4D",
"name":"Application Data Service",
"operation":"Import",
"sequenceNumber":"2",
"mode":"Asynchronous",
"status":"Success",
"startTime":"2018-07-23 02:38:21",
"endTime":"2018-07-23 02:38:36",
"resourceType":"DB Util"
}
]
},
{
"id":"88-1V5Y48",
"planName":"Data Mig",
"description":"Data Mig",
"status":"Success",
"startDate":"2018-07-23 02:30:33",
"endDate":"2018-07-23 02:31:19",
"source":"Dev",
"target":"Prod",
"packageName":null,
"resources":[
{
"id":"88-1V5Y49",
"name":"Application Data Service",
"operation":"Export",
"sequenceNumber":"1",
"mode":"Asynchronous",
"status":"Success",
"startTime":"2018-07-23 02:30:33",
"endTime":"2018-07-23 02:30:48",
"resourceType":"DB Util"
},
{
"id":"88-1V5Y4A",
"name":"Application Data Service",
"operation":"Import",
"sequenceNumber":"2",
"mode":"Asynchronous",
"status":"Success",
"startTime":"2018-07-23 02:31:03",
"endTime":"2018-07-23 02:31:18",
```

```
"resourceType":"DB Util"
}
]
},
{
"id":"88-1V5Y3J",
"planName":"Data Mig",
"description":"Data Mig",
"status":"Success",
"startDate":"2018-07-22 11:26:29",
"endDate":"2018-07-22 11:27:15",
"source":"Dev",
"target":"Prod",
"packageName":"",
"resources":[
{
"id":"88-1V5Y3K",
"name":"Application Data Service",
"operation":"Export",
"sequenceNumber":"1",
"mode":"Asynchronous",
"status":"Success",
"startTime":"2018-07-22 11:26:29",
"endTime":"2018-07-22 11:26:44",
"resourceType":"DB Util"
},
{
"id":"88-1V5Y3L",
"name":"Application Data Service",
"operation":"Import",
"sequenceNumber":"2",
"mode":"Asynchronous",
"status":"Success",
"startTime":"2018-07-22 11:27:00",
"endTime":"2018-07-22 11:27:15",
"resourceType":"DB Util"
}
]
},
{
"id":"88-1V5Y35",
"planName":"Data Mig",
"description":"Data Mig",
"status":"Success",
"startDate":"2018-07-22 11:17:16",
"endDate":"2018-07-22 11:18:03",
"source":"Dev",
"target":"Prod",
"packageName":"",
"resources":[
{
"id":"88-1V5Y36",
"name":"Application Data Service",
"operation":"Export",
"sequenceNumber":"1",
"mode":"Asynchronous",
"status":"Success",
"startTime":"2018-07-22 11:17:16",
"endTime":"2018-07-22 11:17:31",
"resourceType":"DB Util"
},
{
"id":"88-1V5Y37",
"name":"Application Data Service",
"operation":"Import",
"sequenceNumber":"2",
```

```
 "mode":"Asynchronous",
 "status":"Success",
 "startTime":"2018-07-22 11:17:48",
 "endTime":"2018-07-22 11:18:03",
 "resourceType":"DB Util"
 }
 ]
 }
]
```


Getting Migration History by ID Number

You can get a migration history by ID number for your migration by sending an HTTP GET request to the Siebel Migration Application.

The following details are for a request to get a migration history by ID number for a migration:

- URI: **`https://{hostname}:{port}/siebel/v1.0/migration/history/{id}`**
- HTTP Method: GET
- Content-Type: application/json
- Authorization: Basic
- Request Body: None

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response Body:


```
{
 "id":"88-1V5WON",
 "planName":"IRRMigration",
 "description":"IRRMigration",
 "status":"Error",
 "startDate":"2018-07-17 04:28:06",
 "endDate":"2018-07-17 04:28:22",
 "source":"Dev",
 "target":"Prod1",
 "packageName":"",
 "resources":[
 {
 "id":"88-1V5WOQ",
 "name":"Incremental Runtime Repository Data Service",
 "operation":"Export",
 "sequenceNumber":"1",
 "mode":"Asynchronous",
 "status":"Error",
 "startTime":"2018-07-17 04:28:07",
 "endTime":"2018-07-17 04:28:22",
 "resourceType":"DB Util"
 },
 {
 "id":"88-1V5WOR",
 "name":"Incremental Runtime Repository Data Service",
 "operation":"Import",
 "sequenceNumber":"2",
 "mode":"Asynchronous",
 "status":"Not Started",
 "startTime":"",
 "endTime":"",
 "resourceType":"DB Util"
```

```
},
{
"id":"88-1V5WOS",
"name":"Incremental Runtime Repository Data Service",
"operation":"ActivateWorkflowsTasks",
"sequenceNumber":"3",
"mode":"Asynchronous",
"status":"Not Started",
"startTime":"",
"endTime":"",
"resourceType":"DB Util"
},
{
"id":"88-1V5WOT",
"name":"Incremental Runtime Repository Data Service",
"operation":"DBCheck",
"sequenceNumber":"4",
"mode":"Asynchronous",
"status":"Not Started",
"startTime":"",
"endTime":"",
"resourceType":"DB Util"
}
]
}
```


Getting Migration History by ID and Resource Name

You can get the migration history by ID and resource name for your migration by sending an HTTP Get request to the Siebel Migration Application.

The following details are for a request to get the migration history by ID and resource name for a migration:

- URI: **`https://{hostname}:{port}/siebel/v1.0/migration/history/{id}/{resourceName}`**
- HTTP Method: GET
- Content-Type: application/json
- Authorization: Basic
- Request Body: None

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response Body:


```
{
"id":"88-1V5WON",
"planName":"IRRMigration",
"description":"IRRMigration",
"status":"Error",
"startDate":"2018-07-17 04:28:06",
"endDate":"2018-07-17 04:28:22",
"source":"Dev",
"target":"Prod1",
"packageName":"",
"resources":[
{
"id":"88-1V5WOQ",
"name":"Incremental Runtime Repository Data Service",
"operation":"Export",
"sequenceNumber":"1",
```

```
"mode":"Asynchronous",
"status":"Error",
"startTime":"2018-07-17 04:28:07",
"endTime":"2018-07-17 04:28:22",
"resourceType":"DB Util"
},
{
"id":"88-1V5WOR",
"name":"Incremental Runtime Repository Data Service",
"operation":"Import",
"sequenceNumber":"2",
"mode":"Asynchronous",
"status":"Not Started",
"startTime":"",
"endTime":"",
"resourceType":"DB Util"
},
{
"id":"88-1V5WOS",
"name":"Incremental Runtime Repository Data Service",
"operation":"ActivateWorkflowsTasks",
"sequenceNumber":"3",
"mode":"Asynchronous",
"status":"Not Started",
"startTime":"",
"endTime":"",
"resourceType":"DB Util"
},
{
"id":"88-1V5WOT",
"name":"Incremental Runtime Repository Data Service",
"operation":"DBCheck",
"sequenceNumber":"4",
"mode":"Asynchronous",
"status":"Not Started",
"startTime":"",
"endTime":"",
"resourceType":"DB Util"
}
]
}
```


Getting Migration History by ID, Resource Name, and Operation

You can get migration history by ID, resource name, and operation for your migration by sending an HTTP GET request to the Siebel Migration Application.

The following details are for a request to get migration history by ID, resource name, and operation for a migration:

- URI: **`https://{hostname}:{port}/siebel/v1.0/migration/history/{id}/{resourceName}/{operation}`**
- HTTP Method: GET
- Content-Type: application/json
- Authorization: Basic
- Request Body: None

The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json
- Response Body:

```
{
 "id":"88-1V5WON",
 "planName":"IRRMigration",
 "description":"IRRMigration",
 "status":"Error",
 "startDate":"2018-07-17 04:28:06",
 "endDate":"2018-07-17 04:28:22",
 "source":"Dev",
 "target":"Prod1",
 "packageName":"",
 "resources":[
 {
 "id":"88-1V5WOQ",
 "name":"Incremental Runtime Repository Data Service",
 "operation":"Export",
 "sequenceNumber":"1",
 "mode":"Asynchronous",
 "status":"Error",
 "startTime":"2018-07-17 04:28:07",
 "endTime":"2018-07-17 04:28:22",
 "resourceType":"DB Util"
 }
 ]
}
```


Getting the Migration History Operation Log

You can get the migration history operation log for your migration by sending an HTTP GET request to the Siebel Migration Application.

The following details are for a request to get the migration history operation log for a migration:

- URI: **`https://{hostname}:{port}/siebel/v1.0/migration/history/{id}/{resourceName}/{operation}/log`**
- HTTP Method: GET
- Content-Type: application/json
- Authorization: Basic
- Request Body: None

The response returns the migration history operation log for your migration The following are the details for the response to a successful request:

- HTTP Code: 200
- Content-Type: application/json