Upgrading eaSuite 4.0 from Oracle8i to Oracle9i

Sun Solaris Operating Environment™ Software

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About Customer Self-Service and eaSuite™

edocs has developed the industry's most comprehensive software and services for deploying Customer Self-Service solutions. **eaSuite™** combines electronic presentment and payment (EPP), order management, knowledge management, personalization and application integration technologies to create an integrated, natural starting point for all customer service issues. eaSuite's unique architecture leverages and preserves existing infrastructure and data, and offers unparalleled scalability for the most demanding applications. With deployments across the healthcare, financial services, energy, retail, and communications industries, and the public sector, eaSuite powers some of the world's largest and most demanding customer self-service applications. eaSuite is a standards-based, feature rich, and highly scalable platform, that delivers the lowest total cost of ownership of any self-service solution available.

eaSuite is comprised of four product families:

- Electronic Presentment and Payment (EPP) Applications
- Advanced Interactivity Applications
- Enterprise Productivity Applications
- Development Tools
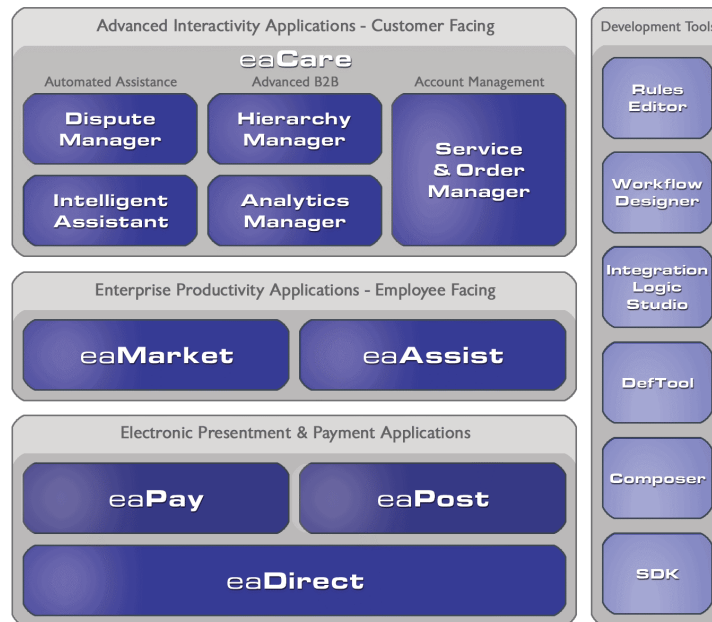
Electronic Presentment and Payment (EPP) Applications are the foundation of edocs' Customer Self-Service solution. They provide the core integration infrastructure between organizations' backend transactional systems and end users, as well as rich e-billing, e-invoicing and e-statement functionality. Designed to meet the rigorous demands of the most technologically advanced organizations, these applications power Customer Self-Service by managing transactional data and by enabling payments and account distribution.

eaDirect™ is the core infrastructure of enterprise Customer Self-Service solutions for organizations large and small with special emphasis on meeting the needs of organizations with large numbers of customers, high data volumes and extensive integration with systems and business processes across the enterprise. Organizations use eaDirect with its data access layer, composition engine, and security, enrollment and logging framework to power complex Customer Self-Service applications.

eaPay™ is the electronic payment solution that decreases payment processing costs, accelerates receivables and improves operational efficiency. eaPay is a complete payment scheduling and warehousing system with real-time and batch connections to payment gateways for Automated Clearing House (ACH) and credit card payments, and payments via various payment processing service providers.

eaPost® is the account content distribution system that handles all the complexities of enrollment, authentication and secure distribution of summary account information to any endpoint, while also bringing customers back the organization's Website to manage and control their self-service experience.

Advanced Interactivity Applications are a comprehensive set of advanced customer-facing self-service capabilities that enable the full range of business and consumer customer service activities. These sophisticated modules have the flexibility to completely customize the Customer Self-Service solution to meet vertical industry and specific company requirements.

eaCare™ consists of a rich set of sophisticated self-service modules – Dispute Manager, Intelligent Assistant, Hierarchy Manager, Analytics Manager, and Service and Order Manager - for automated assistance, advanced business-to-business applications and account management. These capabilities come together to create a web self-service dashboard for customers to access all service offerings from a single, easy-to-use interface. eaCare's modularity accelerates time to market with components that can be deployed incrementally in a phased approach.

Enterprise Productivity Applications are employee-facing solutions that empower customer service representatives, sales agents, account managers, marketing managers, broker-dealers and channel partners within an organization and external partner organizations to facilitate self-service and to support assisted service. Employees leverage edocs' Customer Self-Service solution to deliver customer service, access information, create and deploy marketing and customer service content, and perform activities for the benefit of customers.

eaAssist™ reduces interaction costs and increases customer satisfaction by enabling enterprise agents – customer service representatives (CSRs), sales agents, broker-dealers and others – to efficiently access critical account data and service-related information to effectively service customers. Through its browser interface designed especially for the enterprise agent, eaAssist enables agents to take advantage of customer-facing online capabilities to provide better service by more efficiently resolving customer account inquiries at the point of customer contact.

eaMarket™ is the personalization, campaign and content management solution that enables organizations to increase revenue and improve customer satisfaction by weaving personalized marketing and customer service messages throughout the Customer Self-Service experience. The transactional account data that provides the foundation for a Customer Self-Service solution – such as transaction activity, service or usage charges, current task and prior service history – bring valuable insight into customers and can help optimize personalized marketing and customer service campaigns. eaMarket leverages that data to present relevant marketing and customer service messages to customers.

edocs' **Development Tools** are visual development environments for designing and configuring edocs' Customer Self-Service solutions. The Configuration Tools encompass data and rules management, workflow authoring, systems integration, and a software development kit that makes it easy to create customer and employee-facing self-service applications leveraging eaSuite.

About This Guide

This guide describes the tasks required to upgrade eaSuite 4.0 software and migrate eaSuite 4.0 databases from **Oracle 8i** to **Oracle 9i** on **Solaris**.

Intended for Oracle database administrators, the guide assumes familiarity with database administration tasks including:

- making database backups

- running the `exp` and `imp` utilities

- creating databases

- creating database users

- dropping and creating tablespaces

- installing and configuring eaSuite on a database server

If you need help with any of these topics, see the appropriate Related Documentation for details.

Related Documentation

You will need a user name and password to access Oracle documentation on the web.

Document/URL	Description/Doc ID
Oracle9i Installation Guide Release 2 (9.2.0.1.0) for UNIX Systems: AIX-Based Systems, Compaq Tru64 UNIX, HP 9000 Series HP-UX, Linux Intel, and Sun Solaris	How to install Oracle 9i. Part No. A96167-01
http://download-west.oracle.com/docs/html/A96167_01/toc.htm	
Oracle9i Database Administrator's Guide Release 2 (9.2)	How to create a new database, etc. Part No. A96521-01
http://technet.oracle.com/docs/products/oracle9i/doc_library/release2/server.920/a96521/toc.htm	
Oracle8i Utilities Release 2 (8.1.6)	How to use **imp, exp** and other utilities. Part No. A76955-01
http://download-west.oracle.com/docs/cd/A87860_01/doc/server.817/a76955/toc.htm	
Oracle9i Database Utilities Release 2 (9.2)	How to use **imp, exp** and other utilities. Part No. A96652-01
http://technet.oracle.com/docs/products/oracle9i/doc_library/release2/server.920/a96652/toc.htm	
Oracle9i Net Services Administrator's Guide Release 2 (9.2)	How to configure **tnsnames.ora**, etc. Part No. A96580-01
http://technet.oracle.com/docs/products/oracle9i/doc_library/release2/network.920/a96580/toc.htm	
eaDirect Installation and Configuration Guide v4.0	How to install eaDirect 4.0, migrate existing databases Document ID: DISO-03-4.0-01

If You Need Help

Technical support is available to customers who have valid maintenance and support contracts with edocs. Technical support engineers can help you install, configure, and maintain your edocs application.

edocs provides global Technical Support services from the following Support Centers:

US Support Center
Natick, MA
Mon-Fri 8:30am – 8:00pm US EST
Telephone: 508-652-8400

Europe Support Center
London, United Kingdom
Mon-Fri 9:00am – 5:00 GMT
Telephone: +44 20 8956 2673

Asia Pac Rim Support Center
Melbourne, Australia
Mon-Fri 9:00am – 5:00pm AU
Telephone: +61 3 9909 7301

Customer Central
https://support.edocs.com

Email Support
mailto:support@edocs.com

When you report a problem, please be prepared to provide us the following information:

- What is your name and role in your organization?
- What is your company's name?
- What is your phone number and best times to call you?
- What is your e-mail address?
- In which edocs product did a problem occur?

- What is your Operating System version?

- What were you doing when the problem occurred?

- How did the system respond to the error?

- If the system generated a screen message, please send us that screen message.

- If the system wrote information to a log file, please send us that log file.

If the system crashed or hung, please tell us.

Software Requirements

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Oracle9i Database Software

Preparation guidelines, hardware and software requirements, and recommendations for installing Oracle 9i are defined in Oracle's *Oracle 9i Installation Guide.* Review the first few chapters of this guide before installing Oracle 9i, and ensure that your systems are properly set up and configured.

eaDirect Software

If necessary, upgrade eaDirect and migrate your eaDirect database to **release 4.0**. See the *eaDirect Installation and Configuration Guide* V4.0 for instructions.

eaPay Software

If eaPay software exists, upgrade eaPay and migrate your eaPay database to **release 4.0**. See the *eaPay Installation and Configuration Guide* V4.0 for instructions.

eaPost Software

If you have installed eaPost, upgrade eaPost and migrate your eaPost database to **release 4.0**. See the *eaPost Installation and Configuration Guide* V4.0 for instructions.

eaMarket Software

If you have installed eaMarket, upgrade eaPost and migrate your eaMarket database to **release 4.0**. See the *eaMarket Installation and Configuration Guide* V4.0 for instructions.

eaDirect Database

Ensure that your eaDirect database is in good working order by:

- inspecting the eaDirect database logs for errors

- validating the status of all user objects

Correct any errors or INVALID status before attempting the database upgrade.

eaPay Database

If eaPay database exists and needs to be migrated, no extra task is required since all eaPay-related objects reside in the same database as that of eaDirect and belong to the same schema. That means the eaPay data are exported/imported along with the eaDirect data. Hence, when the eaDirect database is migrated, eaPay database will be automatically migrated as well.

From this point on, any description about the migration of eaDirect database should imply that the migration of eaPay also occurs at the same time if it exists.

eaPost Database

Ensure that your eaPost database is in good working order by:

- inspecting the eaPost database logs for errors

- validating the status of all user objects

Correct any errors or INVALID status before attempting the database upgrade.

eaMarket Database

Ensure that your eaMarket database is in good working order by:

- inspecting the eaMarket database logs for errors
- validating the status of all user objects

Correct any errors or INVALID status before attempting the database upgrade.

Upgrading to Oracle 9i

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This guide uses the term **upgrade** to describe changing installed software to a newer release. Changing a database instance to *use* new software is defined as **migration.**

Overview

Upgrading your eaSuite database from Oracle8i to Oracle9i involves the following steps:

1. Ensure your environment meets system requirements.

Caution   If you are migrating your application from a version prior to 4.0, you must upgrade your application server before upgrading your database to 9i.

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2. Export your eaSuite database from Oracle8i.

3. Install Oracle9i to upgrade your database software.

4. Create one or more new Oracle9i databases to migrate your database instance.

5. Create tablespaces in the new database(s).

6. Create a new user for the new database(s).

7. Import your Oracle8i database(s) into the new database(s).

8. Update Oracle administrative files to refer to the new SID(s).

9. Update your application server environment with **edx_config** to refer to the correct Oracle home directory and database instance for eaDirect. Also update **edx_payment.config** for eaPay, and run **set_eam_env** for eaMarket (if installed).

10. Update your application server configuration file to refer to the new SID.

Meet System Requirements

Review and comply with the Requirements section of this guide.

Export Your eaDirect Database

As the Oracle DBA, export a copy of your existing Oracle8i database with the **exp** utility in **full** mode, for example:

```
exp system/manager file=edx0_export FULL=Y
```

Caution	You will need to export the edocs (e.g. *edx0*) database. If WebSphere (instead of WebLogic) is used, then its database (e.g. *was*) needs to be exported as well in the same manner as that of the edocs database. When performing the export, ensure the Oracle 8.1.7 database and listener are running in order to perform the export successfully.

This will create a flat file version of your database that you will import later. Do not use the database user username/password, for example **edx_dba/edxadmin**, as only the Oracle DBA user supports **full** mode for export.

For details about the **exp** utility, see the *Oracle8i Utilities* guide.

Caution	Be sure to export any **custom** tablespaces you have added to your eaDirect database.

Install Oracle9i

Follow the instructions in the *Oracle9i Installation Guide*. During the install, the Oracle Universal Installer will prompt for several values. Respond as noted in the following table.

Value	Notes
Database Configuration	Select "Software Only" to avoid creating a new database during installation. You will create your eaDirect database separately.
Global Database Name	Name your global database according to Oracle recommendations.
SID	Enter a SID that is different from the existing Oracle 8i database SID.

As the database user, navigate to your Oracle home directory and change the Oracle profile (`.profile`) to refer to the 9i version of the Oracle home directory.

> **Tip** The Oracle8i client will support eaDirect for **conventional load** indexing. To use **direct load**, you must install the Oracle9i client on your application server. For details, see the eaDirect *Installation and Configuration* and *Production* guides.

Create A New Oracle9i Database

Using the Oracle Database Configuration Assistant (DBCA) or a manual script, create a new Oracle9i database, for example **edx1**, containing:

- A LOGFILE made up of 3 groups

- A system DATAFILE

- An UNDO tablespace

- A TEMPORARY tablespace

- The character set WE8ISO8859P1

- The national character set AL16UTF16

Be sure that database creation is successful before proceeding to the next step.

> **Caution** You cannot migrate an existing Oracle 8i database directly for eaDirect.
> You must create a new Oracle9i database and export/import your data.

For details, see the *Oracle9i Database Administrator's Guide*.

Create Tablespaces In The New Database

Create the following tablespaces in the new database for **eaDirect** (this also supports **eaPay**):

```
edx_data

edx_data_idx

edx_app_data

edx_app_data_idx

edx_cda_data

edx_cda_data_idx

edx_fs_data

edx_fs_data_idx

edx_load_data

edx_load_data_idx

edx_stage_data

edx_stage_data_idx

edx_pwc_data

edx_pwc_data_idx
```

> **Caution** Be sure to create any **custom** tablespaces you have added to your
> eaDirect database.

Create the following tablespaces in the new database for **eaPost**:

```
usr

bp_data_sm
```

```
bp_idx_sm
bp_data_lrg
bp_idx_lrg
```

Create the following tablespaces in the new database for **eaMarket**:

```
edx_data
```

Be sure that tablespace creation is successful before proceeding to the next step.

For details, see the *Oracle9i Database Administrator's Guide*.

Create A New User For The New Database

1. Create a new DBA user for the new database, for example **edx_dba** for eaDirect, eaPay and eaMarket. **epx_dba** for eaPost.

2. Execute the CREATE USER command using the appropriate values for your database, for example:

    ```
    CREATE USER DEFAULT TABLESPACE edx_data TEMPORARY
    TABLESPACE temp PROFILE DEFAULT
    ```

3. Grant this user the following roles:

    ```
    ALTER SESSION
    CREATE PROCEDURE
    CREATE SEQUENCE
    CREATE SESSION
    CREATE TABLE
    CREATE ANY TRIGGER
    CREATE VIEW
    EXECUTE ANY LIBRARY
    EXECUTE ANY PROCEDURE
    SELECT ANY TABLE
    SELECT ANY DICTIONARY
    ```

```
UNLIMITED TABLESPACE
```

For details, see the *Oracle9i Database Administrator's Guide*.

Import Your Oracle8i Database

As the Oracle DBA, import your existing Oracle8i database(s) with the **imp** utility under Oracel9i. For example:

```
imp system/manager fromuser=edx_dba touser=edx_dba
file=edx0_export
```

Do not use the database user username/password, for example **edx_dba/edxadmin**, as only the Oracle DBA user supports **full** mode for import. This will import the flat file version of your database into your new database. For details about the **imp** utility, see the *Oracle9i Utilities* guide.

Caution	Be sure to import any **custom** tablespaces you have added to your eaDirect database. The WebSphere database needs to be imported as well into this new 9i instance.

Update Oracle Administrative Files

Update the files **tnsnames.ora** and **listener.ora** to refer to the new SID. For details, see the *Oracle9i Net Services Administrator's Guide*.

Caution	Be sure to restart the Oracle listener process after updating these files.

Update Your Application Server Environment

Working with your application server administrator, run the eaDirect environment script **$EDX_HOME/bin/edx_config** on the application server as the application server owner. As prompted, enter the new values for your eaDirect environment to refer to your new Oracle9i home directory (**$ORACLE_HOME**), database username and password, and SID, for example **edx1**. For details, see the *eaDirect Installation and Configuration Guide*.

Also update **edx_payment.config** for eaPay, and run **set_eam_env** for eaMarket (if installed). See the installation guides for eaPay and eaPost for more information.

Update Your Application Server JDBC Resources

WebSphere

Working with your WebSphere application server administrator through the WebSphere administrative console, update the resources for **each** JDBC data source in your application server configuration to refer to the new SID, for example **edx1**, and database username and password (if you changed these). You will also need to update the database name in the **URL** setting for each JDBC data source, for example jdbc:oracle:thin:@localhost:1521:**edx1**.

WebLogic

Working with the WebLogic Server administrator,use the WebLogic console to update and database references to use the new SID and the new DBA username and password.

For details, see the *eaDirect Installation and Configuration Guide*.