Upgrading IBM Content Manager Enterprise Edition V8.4.x to V8.5.x

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1. Abstract

This documentation describes a special process of upgrading IBM Content Manager Enterprise Edition (Content Manager EE) from Version 8.4.x (including 8.4.0.x, 8.4.1.x, 8.4.2.x, and 8.4.3.x) to Version 8.5.x (including 8.5.0 and later fix packs). The special process of upgrading is named Content Manager EE V8.5 Extended Upgrade (Extended Upgrade). This procedure does not require that you upgrade Content Manager EE to V8.4.3 before you upgrade to V8.5.x, which will streamline the upgrade procedure and save time by eliminating the previously required multi-step upgrade process to upgrade to Content Manager EE V8.5.x. Two upgrade samples are provided in the documentation for reference.

2. Special Notice

The document is provided to assist with the upgrade to Content Manager EE V8.5. Such Materials are provided by IBM on an “as-is” basis.

3. Preface

This documentation provides the following guidance:

- Prepare the existing Content Manager EE V8.4.x system for upgrade to Content Manager EE V8.5.
- The procedure is used to upgrade to Content Manager EE V8.5.
- Two upgrade samples for reference. The scripts and commands used during the system upgrade are included in the samples. Screen captures are also provided.

3.1 Target audience

The section helps determine whether the document is suitable for you.

3.1.1 Suitable upgrade scenarios

Customers that have long upgrade paths and requirements calling for limited downtime for upgrades are the major audience for this document. If a customer has the following scenarios and they want to reduce downtime required for the Content Manager EE V8.5 upgrade, the process outlined in this documentation is helpful.

- Upgrade a Content Manager EE system from V8.4.x to V8.5.x while you move the system to new hardware as well.
- Upgrade a Content Manager EE system from a version earlier than V8.4.3 to V8.5.x.

The documentation does not support the following scenarios.

- Upgrade a Content Manager EE system from V8.3.x or earlier version
- Upgrade across DBMS, for example, from Oracle to DB2.
- Upgrade to or from Content Manager EE on z/OS.

- Moving storage management, for example, from Tivoli Storage Manager to disk.

3.1.2 Skill requirements

Upgrading the Content Manager EE system from V8.4.x to V8.5.x can be complex, time consuming, and prone to errors. It requires a deep understanding of Content Manager EE V8.5, DBMS, storage, and the operating system (OS) technologies involved.

3.1.3 Important considerations

Here are important considerations if you want to use the upgrade process outlined in this document.

- It is recommended that the IBM Software Services team be engaged to help accomplish the system upgrade. For information related to IBM Software Services, please see: http://www-01.ibm.com/software/ecm/services/.
- It is imperative that you make a full, offline database and file system backup of your existing Content Manager EE V8.4.x system so that you can restore the environment if the upgrade fails. The IBM Content Manager EE V8.5 upgrade does not support uninstalling to the previous level. Any mistakes made while performing these steps might result in an inoperable system, which might require a complete restore of the environment. Make sure you completely back up IBM Content Manager before you perform the upgrade.
- Prior to performing the upgrade process in a production level environment, perform the upgrade on a test environment to make sure that the environment can support these upgrade steps, and develop an upgrade operation manual, which should include the detailed upgrade steps and operation scripts.
- Record all of your steps, input and results during the upgrade process. If you encounter any problems, this information will help the services team to review your process and resolve the problem.
- The system restore time needs to be taken into account during upgrade planning. If you encounter any problem which would make continuing the upgrade process impractical, you should allow enough time to recover your production environment to its original state.
- The upgrade process requires manually editing an internal file named cmconfig.xml. Make sure that a copy is saved before you edit it. If you are not comfortable editing the file yourself, either engage IBM Software Services for assistance or follow the formal upgrade steps outlined in the information center.
- If you encounter problems during the upgrade process, you can contact IBM Support for assistance. If the problems are not related to the upgrade process (for example, pure database errors, data migration tool errors, or operating system errors), contact the appropriate support team for the related product.
- If you incorrectly enter data into the database during the upgrade, restoration of the database from the backup need to be considered.
- After completing the upgrade process, you must validate the system’s overall health by running acceptance tests for your applications.

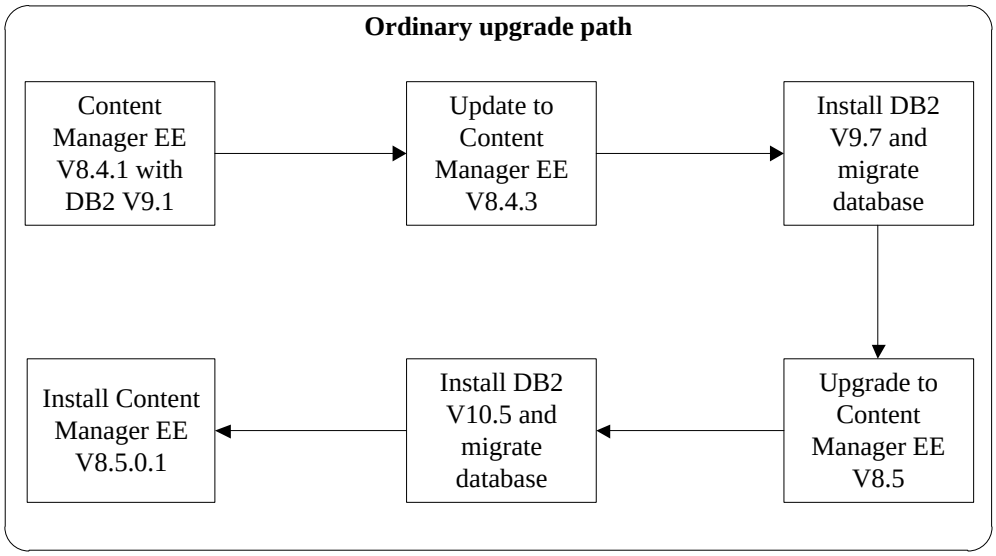
3.2 Background

The ordinary upgrade path to Content Manager EE Version 8.5 is from Version 8.4.3 or later Fix Pack, which requires that you successfully upgrade to V8.4.3 before upgrading to V8.5. Moreover, if you want to update from V8.4.3 to V8.5.0.x (x>=1), you need to upgrade to V8.5 before updating to V8.5.0.x.

The hardware and software requirements vary for different versions of IBM Content Manager EE. The transition of IBM Content Manager EE prerequisite hardware and software must be performed in a certain sequence. For an ordinary upgrade, you may need to install some interim software versions during the upgrade process.

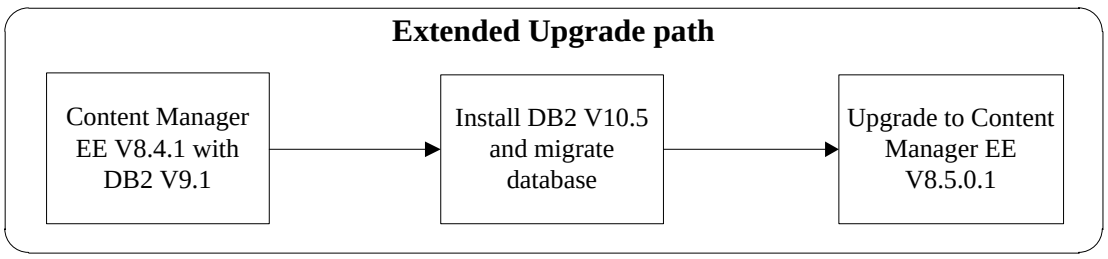
For example, you plan to upgrade an IBM Content Manager EE V8.4.1 system running with DB2 V9.1 to IBM Content Manager EE V8.5 running with DB2 V10.5. Fig 3-1 shows the ordinary upgrade path:

Fig 3-1 Ordinary upgrade path



This documentation provides a new way for you to upgrade Content Manager EE from Version 8.4.x (including 8.4.0.x, 8.4.1.x, 8.4.2.x, 8.4.3.x) to Version 8.5.x directly. Fig 3-2 shows the new upgrade path (Extended Upgrade path).

Fig 3-2 Extended Upgrade path



From Fig 3-1 and 3-2, we can clearly see the advantages of the new upgrade path:

- The Extended Upgrade path can upgrade the Content Manager EE V8.4.1 system to V8.5.0.1 directly. The ordinary upgrade path needs to install V8.4.3, DB2 V9.7, Content Manager EE V8.5.0, and DB2 V10.5 as separate steps before finally updating to Content Manager EE V8.5.0.1.
- The Extended Upgrade path separates the database migration action from the Content Manager upgrade action. You can perform database migration in one step and you only need to perform a single database backup for while running DB2 V9.1. You can engage the IBM DB2 support team to design and complete the database migration actions in one process. Comparatively, the normal upgrade path requires performing two database migration operations in two steps: V9.1 to V9.7, followed by V9.7 to V10.5; furthermore, you need to include the Content Manager EE upgrade actions between the two database migrations, and also need to back up the databases twice.

The Extended Upgrade path that is introduced in this documentation is much simpler and more efficient, since you needn't follow such a complex upgrade procedure. It will definitely shorten the upgrade path and save a lot of time.

3.3 Disclaimer

Upgrading a Content Manager EE system from V8.4.x to V8.5.x can be complex, time consuming, and prone to errors. It requires a deep understanding of Content Manager EE V8.5, DBMS, Storage, and the operating system (OS) technologies involved. This documentation focuses on Content Manager EE product configuration; refer to corresponding product documentation for questions related to third-party software such as DB2, Oracle, Tivoli Storage Manager, and storage-related tools that are used in the Content Manager EE system upgrade procedure.

Given the wide variety of possible configurations, each configuration might take a different number of steps or effort to upgrade. In some configurations, the procedure might be simple. In other cases, the solution might be more difficult. In order to give some ideas of the details and complexities, this documentation details the steps for the upgrade example as a reference.

While not all cases might be possible, it is important that a careful evaluation of this process be done in order to determine whether the procedure is appropriate for a proposed environment. Recommendation: Engage with the IBM Software Services team to help accomplish the system upgrade.

4. Upgrading overview

When you upgrade to Content Manager EE V8.5, the changes in hardware and software requirements can make for a complex and time consuming upgrade. This is especially true when you upgrade versions of Content Manager EE before V8.4.3.

This documentation provides an efficient way for users to perform the upgrade from Content Manager EE V8.4.x to Content Manager EE V8.5.x directly. This documentation covers the following upgrade paths:

- Upgrade a Content Manager EE system from versions earlier than V8.4.3 to V8.5.x.
  It will not require you to upgrade to V8.4.3 before you upgrade to V8.5.
  It supports moving the system to new hardware during the upgrade or performing an upgrade in place (remaining on the same hardware).
- Upgrade a Content Manager EE from V8.4.3.x to V8.5 when you move the system to new hardware.
  Recommendation: Follow the ordinary upgrade path if hardware will not be changed while you upgrade the Content Manager EE V8.4.3.x system to V8.5.
- Upgrade a Content Manager EE V8.4.3.x system to a V8.5 fix pack level.
  It will not require you to upgrade to V8.5.0 before you apply the V8.5 fix pack.

4.1 The methodology for Content Manager EE upgrade

This documentation divides the Content Manager EE components into two types: database components and other components. The upgrade procedure upgrades the database components (databases) from the source system to the target system, and performs the first time configuration of the other components. The source system and target system can be located on the same machine (in-place upgrade) or located on different machines (system move upgrade).

4.1.1 Database components

Database components including:

- Library server
- Resource manager database

These components will be upgraded by following the upgrade steps outlined in this documentation.

4.1.2 Other components

Other components including:

- Resource manager application
- System administration client
- Connectors

- Toolkits and samples
- Web services

These components will be freshly configured by using the Content Manager EE V8.5.x configuration manager.

Before you can upgrade to Content Manager EE V8.5, you must remove any features which were dropped from Version 8.4.x, such as the eClient, Information Center, and any unsupported connectors. You can follow the steps found in the IBM Content Management Knowledge Center to complete the removal of the dropped feature/components.

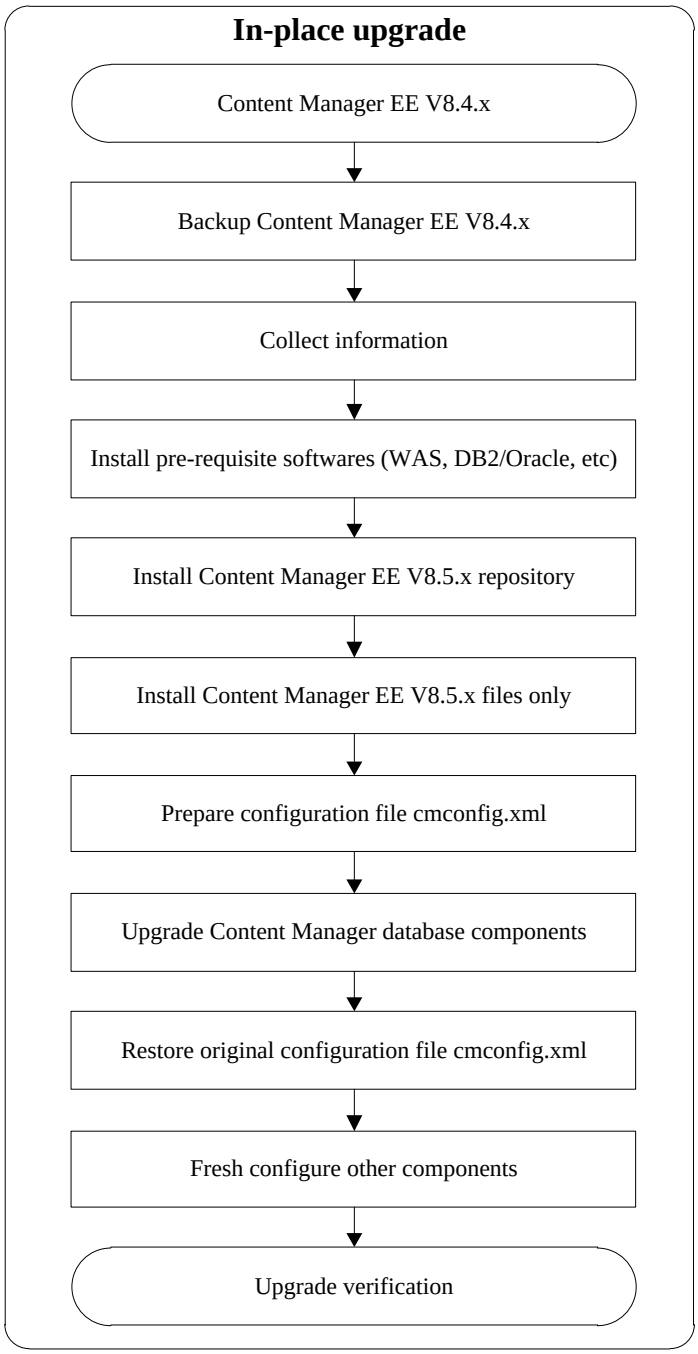
4.1.3 Content Manager EE Upgrade types

This documentation covers two types of upgrades:

- In-place upgrade

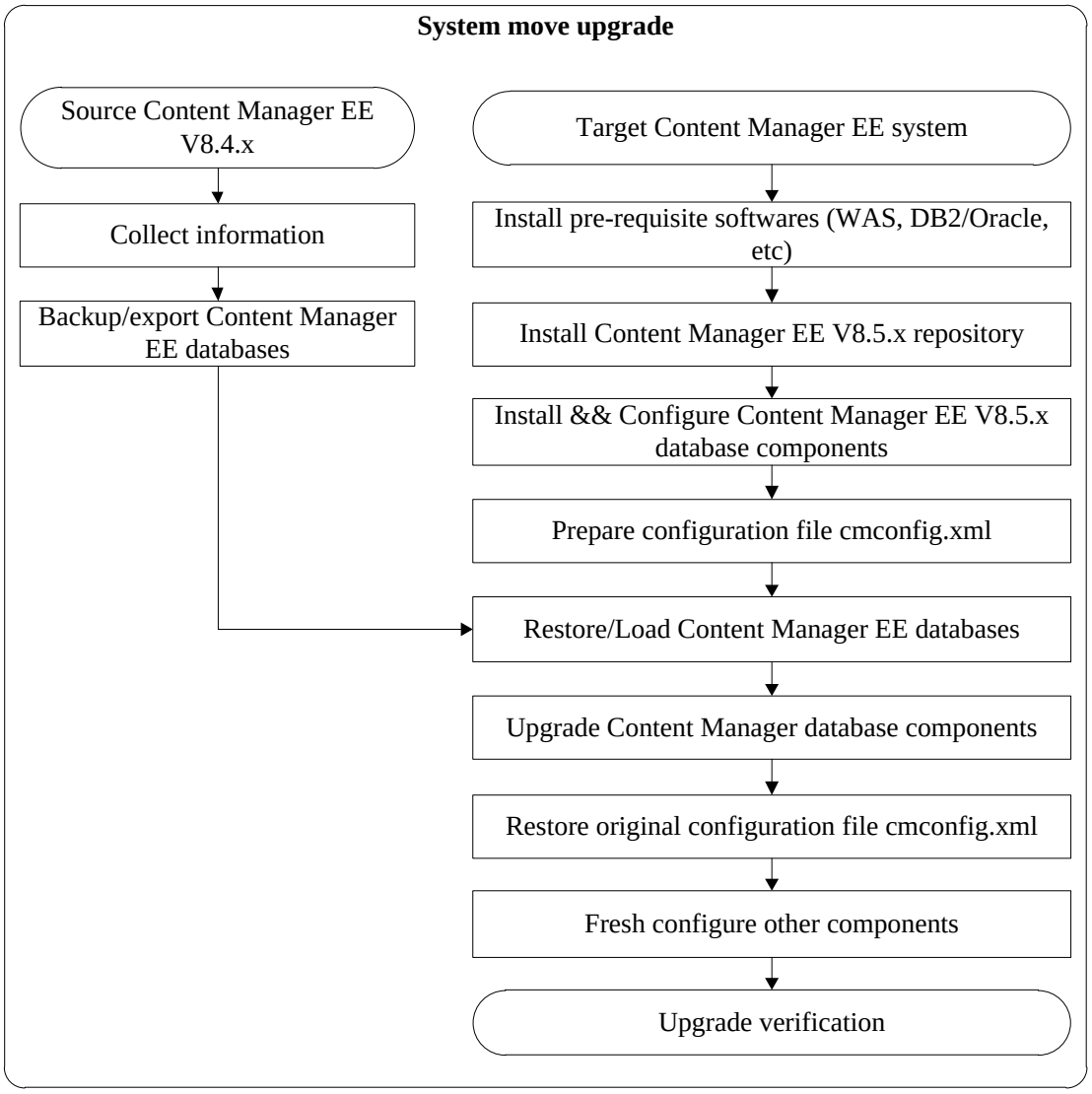
  Perform the upgrade on the existing Content Manager EE system directly. The source system and target system is actually the same machine. Fig 4-1 shows the in-place upgrade procedure.

Fig 4-1 In-place upgrade



- System move upgrade
  In this scenario, the hardware that runs Content Manager EE will be changed during the upgrade. The upgrade procedure will move the database components from the source system to the target system, and then perform the upgrade on the target system. The source system will remain intact. Fig 4-2 shows the system move upgrade procedure.

Fig 4-2 System move upgrade



4.1.4 Content Manager EE upgrade stages

To perform the Content Manager EE upgrade, complete the following four stages:

1. Collect the configuration information for the source system.
2. Prepare and set up the target system.
3. Move the databases from the source system to the target system for a system move upgrade type.
4. Upgrade Content Manager EE.

4.2 Requirements

4.2.1 Source system

The source system is your existing Content Manager EE V8.4.x system. Make sure that your system is functioning properly before the upgrade.

4.2.2 Target system

The target system is the Content Manager EE V8.5.x system. The source system and target system can be the same machine or separate machines. Make sure that your target system meets the Content Manager EE 8.5.x prerequisite software levels described in the following article:
http://www-01.ibm.com/support/docview.wss?uid=swg27038464.

5. Prepare for upgrade

The following preparations need to be done before the Content Manager EE V8.5.x upgrade:

- The Content Manager EE V8.4.x configuration information and database settings needs to be collected.
- Content Manager databases and products need to be backed up in offline/quiesced mode for the in-place upgrade scenario.
- The Content Manager EE V8.5.x configuration repository needs to be built.
- The new prerequisite software needs to be installed and configured according to documentated procedures.

5.1 Collect information and backup

Step 1.1 Collect Content Manager product information

Before upgrade, you can follow the steps found in Chapter 5 of Documentation for IBM Content Manager Enterprise Edition System Move to collect all required information except the Information Integrator for Content federated database configuration (not needed since support for this feature is dropped in V8.5).

For a system move upgrade scenario, in order to move the library server and resource manager databases from the source to the target, you need to consider using the migration tool that is provided by the DBMS product support team. If you have a backup/restore tool to support your move scenario, you can back up the database on the source, and then restore the database to the target host. Otherwise, you need to export all Content Manager EE data from the source database, and then import the data into the database on target host.

Following are certain 'system move upgrade' scenarios where the export/import approach might be best.

1. Move DB2 databases from one platform to another platform for which DB2 does not support backup and restore between platform types. See DB2 Backup and restore operations between different operating systems and hardware platforms for details.
2. Move DB2 database from version A in source machine to higher version B in target machine. The backup of DB2 version A cannot be restored to DB2 version B directly. If you don't want to install an interim DB2 version C for the backup/restore approach, you can use the export/import approach instead. For example, the backup of DB2 V9.1 cannot be restored to DB2 V10.5 directly.
   Move Oracle10G database in source machine to Oracle11G database in target machine. Other considerations can also affect the need for using the export/import approach instead of the backup/restore approach.

If you plan to move Content Manager Databases to another system using the

export/import approach, you need to collect database information for database creation in the target machine.

DB2

You can log onto the original server using a DB2 administration user ID, and then issue the following commands to collect database information:

```
db2 get dbm cfg
db2 get db cfg
```

Note: You need to collect the information for the library server database and resource manager database separately.

ORACLE

Content Manager EE has not created Oracle databases or table spaces since V8.4.1, and the Oracle DBA owns these tasks to comply with Oracle best practices. Before the oracle DBA creates new oracle instances and databases, the Oracle DBA needs to follow the Oracle documentation to collect the database-related information from the source system.

Step 1.2 Content Manager EE V8.4.x Backup

Content Manager EE upgrade does not support UN-installation and rollback, so a full database and system backup is required before upgrading.

Backup the Content Manager EE V8.4.x directory (IBMCMROOT)

Fully back up product directory before upgrade. Its location was gathered in Step 1.1 Collect Content Manager product information

Backup the working directory (Working dir)

Fully back up working directory before upgrade. Its location was gathered in Step 1.1 Collect Content Manager product information

Backup the Installation Data Repository (IDR) file

Fully back up the existing Installation Data Repository (IDR) file before upgrading. Its location is defined according to operating system type in Table 5-1:

Table 5-1 Installation Data Repository (IDR) file location

UNIX/Linux	/var/ibm/ecm/ECMInstallDataV8.xml
Windows	% ALLUSERSPROFILE%\IBM\ecm\ECMInstallDataV8.xml

Backup databases

Fully back up the library server and each resource manager databases in offline mode before upgrading.

Recommendation: Involve the DBMS product services team in the database backup process. If the database backup requires taking Content Manager EE system offline, you might do it until 6.1 Step 1: Taking Content Manager EE system offline complete.

Notes: For the system move upgrade scenario, if you do not change any configuration settings on the source system, you can ignore all of the above referenced backup

steps. The source system can be considered as the backup.

Step 1.3 Back up and delete cminstall.data file

Back up and delete the cminstall.data file found in %IBMCMROOT%\cmgmt on Windows or /opt/IBM/db2cmv8/cmgmt on UNIX if it exists.

5.2 Install new software

Step 2.1 Install Content Manager EE V8.5 configuration repository

You can follow the Content Manager EE V8.5 information center article http://pic.dhe.ibm.com/infocenter/cmgmt/v8r5m0/topic/com.ibm.installingcm.doc/dcmco095.htm to install the Content Manager EE V8.5 configuration repository. If you want to upgrade to a Content Manager EE V8.5 fix pack level, you will also need to install the Content Manager EE V8.5's fix pack repository in the same machine. Content Manager EE V8.5 supports remote configuration, so the machine that installs Content Manager EE V8.5 configuration repository can be a different machine that Content Manager EE V8.4.x or the new target machine. See IBM Content Manager EE V8.5 remote configuration for details.

Step 2.2 Install prerequisite software

Before upgrading, ensure that the target system's software versions meet the minimum software requirements of Content Manager EE V8.5. See https://www.ibm.com/support/docview.wss?uid=swg27038464 to verify the software requirements. If you want to upgrade the Content Manager EE databases immediately after you install the proper RDBMS product as referenced in the in-place scenario, refer to the In-place scenario referenced in Section 6.A.3 Step 3: Migrate Content Manager EE V8.4.x data.

Step 2.3 Setting up target system (system move upgrade only)

2.3.1. Preparing and setting up the target system

You can follow the steps found in Chapter 6 "Preparing and setting up the target system" in Documentation for IBM Content Manager Enterprise Edition System Move to set up the target system.

2.3.2 Library server and resource manager database initialization

Fresh configuration of the library server and resource manager database(s)

Follow the instructions in http://pic.dhe.ibm.com/infocenter/cmgmt/v8r5m0/topic/com.ibm.installingcm.doc/dcmco095.htm to run the configuration manager and perform the fresh configuration of the library server and/or resource manager database(s) on the target machine, Ensure that the Content Manager EE V8.5 file installation and configuration is initially done in the target machine.

2.3.3 Special considerations for export/import approach

If you choose the export/import approach to move the data to a target machine, you need to perform the following steps to first clean and then recreate the DB2 database or Oracle administration users before you load data into target machine. Using the clean databases option for DB2 or the clean schema option for Oracle will avoid data conflicts when you load data to the target system.

Note:

For Oracle, since the administration users need to be dropped and recreated before you load data into the target machine, make sure the administration users for the library server and resource manager for Content Manager EE are not shared with other applications.

DB2:

1. Drop the library server database and resource manager database that were created under the Fresh configure library server and resource manager database section.
2. Use the CODESET and TERRITORY determined under section 5.1 Collect information and backup: Step 1.1: DB2 to create an empty library server database and resource manager database.
   For example: db2 “CREATE database icmnlsdb USING CODESET UTF8 TERRITORY US”

Oracle:

1. Drop library server and resource manager administration users.
   For example: issue the following commands in PL/SQL with the Oracle instance sysadmin user:
   drop user icmadmin cascade
   drop user rmadmin cascade
2. Recreate the users and grant proper privileges for them
   Change the directory, which includes icmlsschemas.sql and icmrmschema.sql
   sqlplus sys/<sys's password>@<icmnlsdb> as sysdba
   @icmlsschemas.sql icmadmin password icmconct password ICMLFQ32 TEMP
   where:
   - icmadmin password represents your library server administration database user and password.
   - icmconct password represents your library server connection database user and password
   - ICMLFQ32 TEMP represents the default table spaces for library server database users. These two values are required but ignored.

   sqlplus sys/<sys's password>@<rmdb> as sysdba
   @icmrmschema.sql rmadmin password OBJECTS TEMP
   where:
   - rmadmin password represents your resource manager administration

database user and password.

- OBJECTS TEMP represents the default table spaces for resource manager database users. These two values are required but ignored.

6. Upgrading Content Manager EE V8.5.x

The steps at following section require taking the Content Manager EE system offline. You need to plan for this outage accordingly. In many cases, the Content Manager EE databases need to be migrated before the upgrade, and the process would depend upon the DBMS data migration tools. Therefore, a deep understanding of the Content Manager EE and DBMS products is required.

Recommendation: Involve the DBMS product services team in the database migration process. Before migrating the actual databases, the operational steps need to be validated in a test (non-production) environment.

6.A In-place Upgrade

6.A.1 Step 1: Taking Content Manager EE system offline

Follow the steps described in **Chapter 7.1 Taking Content Manager EE system on the source offline** found in Documentation for IBM Content Manager Enterprise Edition System Move.

6.A.2 Step 2: Install Content Manager EE V8.5.x files

Step 2.1 Remove Installation Data Repository (IDR) file

Remove the Installation Data Repository (IDR) file from each IBM Content Manager EE V8.4.x server (its location has been previously indicated in Table 5-1 Installation Data Repository (IDR) file location).

Run the cmlevel script from the IBMCMROOT/bin (UNIX) or IBMCMROOT\bin path to verify that the Installation Data Repository (IDR) file does not exist. You should receive an error message similar to:

```
The data file "/var/ibm/ecm/ECMInstallDataV8.xml" does not exist.
Program completed with exit code "3".
```

The Installation Data Repository (IDR) file is the registry file for Content Manager EE V8.4 and V8.5. When it is removed, the Content Manager EE V8.5 configuration manager won’t detect any IBM Content Manager EE V8.4 components which were previously installed.

Step 2.2 Install Library Server and Resource Manager Database files only

Step 2.2.1 Run the IBM Content Manager EE V8.5 configuration manager from the latest fix pack repository as indicated in the section 5.2 Install new software: Step 2.1 Install Content Manager EE V8.5 configuration repository.

Step 2.2.2 Add Library Server and/or Resource Manager Database server as target machine

Make sure that no Content Manager EE components are detected by the host validation.

Step 2.2.3 Select Library Server and/or Resource Manager Database and **select the** "Copy selected components to the product directory on the target machine, but do not configure" checkboxes

Step 2.2.4 Complete the installation

Step 2.2.5 Run cmlevel script to verify the installation

If the library server and resource manager databases are configured on separate machines, or if there are multiple resource manager database servers, repeat above steps for each server.

6.A.3 Step 3: Migrate Content Manager EE V8.4.x data

The data that discussed in this section includes the library server database, resource manager database and the binary objects stored by the resource manager.

If the DBMS where Content Manager EE V8.4.x is running is not supported by Content Manager EE V8.5.x, you need to migrate (upgrade) the databases before you upgrade to Content Manager EE V8.5.x.

Upgrade DB2 with Content Manager EE V8.4.x

Unix/Linux: http://www-01.ibm.com/support/docview.wss?uid=swg21413805
Windows: http://www-01.ibm.com/support/docview.wss?uid=swg21413817
The highest version of DB2 is v9.7 in the links above. For DB2 v10.1 and v10.5, follow the upgrade path for DB2 v9.7 described in the links.

Note: The upgrade methodologies that are mentioned in the above links are not the only way to upgrade DB2. You may prefer to involve IBM DB2 services team to design a customized DB2 upgrade solution.

Upgrade Oracle with Content Manager EE V8.4.x

Recommendation: Engage the IBM Software services team or Oracle product services team to design and complete the Oracle upgrade.
For the Oracle 11g upgrade process, please see:
http://docs.oracle.com/cd/E11882_01/server.112/e23633/upgrade.htm#UPGRD003

6.A.4 Step 4: Prepare cmconfig.xml

The upgrade process that is mentioned in this documentation is not an ordinary upgrade process; rather, it is regarded as an Extended Upgrade. The only upgrade path supported by the Content Manager EE V8.5 configuration manager is to move from Content Manager EE V8.4.3.x to V8.5.0. However, the Extended Upgrade process extends the source Content Manager EE version to the whole Content Manager EE 8.4 product line, and the target system to Content Manager EE 8.5 fix pack levels.

The modification of the cmconfig.xml file is a key step for the Extended Upgrade process. It is used to inform the Content Manager EE V8.5.x configuration manager that the current system needs to be upgraded instead of requiring a fresh configuration.

Notes: During the Extended Upgrade process, all of the configuration panels reflect Content Manager EE V8.5 library server database and resource manager database fresh configuration panels instead of upgrade panels. If you have multiple resource manager databases on one machine, you need to upgrade them one by one.

It is required that you back up the cmconfig.xml file before you modify it in the <IBMCMREPO>/<CM version>/cmcfgmgr directory. The original one will be used for future normal Content Manager configuration after the Extended Upgrade is completed.

Note: The following cmconfig.xml sample contents are just an illustration. Any changes in cmconfig.xml file must be consulted by IBM service.

The modification of cmconfig.xml file requires that the configuration manager is closed, and only <pages> </pages> section needs to be modified. The following sample assumes that the library server database is named icmnlsdb and the resource manager database is named rmdb,

```
<pages>
    <!-- At last page of Configuration Manager update the following parameters of
    lsrte, CM, rmdb model -->
        <page pageId="com.ibm.cm.cfg.wizards.StartConfigPage">
            <model name="lsrte">
                <property name="nextFileOperation.needToDo" value="true"
```

```
                aspect="before"></property>
        <!-- Set configuration type of lsrte to 'upgrade'-->
                <property name="nextConfigOperation.type" value="upgrade"
                aspect="before"></property>
            </model>
            <model name="rmdb" inst="rmdb">
                <property name="nextFileOperation.needToDo" value="true"
                aspect="before"></property>
        <!-- Set configuration type of rmdb to 'upgrade'-->
                <property name="nextConfigOperation.type" value="upgrade"
                aspect="before"></property>
            </model>
            <model name="cm">
        <!-- Set configuration type of cm model to 'upgrade'-->
                <property name="nextFileOperation.type" value="upgrade"
                aspect="before"></property>
        <!-- Set configuration type of cm model to 'upgrade'-->
                <property name="nextConfigOperation.type" value="upgrade"
                aspect="before"></property>
                <property name="actionType" value="UPGRADE_ADD"
                aspect="before"></property>
            </model>
        </page>
    </pages>
```

Note:

- Use the actual resource manager name to replace the inst="rmdb" in <model name="rmdb" inst="rmdb">.
- If there are multiple resource manager databases, you need to upgrade them one by one. When one resource manager database upgrade is done, close the configuration manager and replace instance name for another resource manager database in <model name="rmdb" inst="rmdb"> in cmconfig.xml, then start configuration manager again to upgrade it.
- If you need to run the upgrade more than once for multiple resource manager databases, on the second run, comment out the model for the library server component that were already upgraded, and you can only select the resource manager database component in configuration manager.
- After Extended Upgrade is completed, restore the original cmconfig.xml file.

The modification of cmconfig.xml will tell Content Manager EE V8.5.x configuration manager that the current Content Manager system will be upgraded.

6.A.5 Step 5: Upgrade library server and resource manager database to V8.5.x

In this step, Content Manager EE V8.4.x library server database and resource manager database would be upgraded to V8.5.x.

Step 5.1 Run Content Manager EE V8.5.x configuration manager from latest fix pack repository as indicated in the 5.2 Install new software: Step 2.1 Install Content Manager EE V8.5 configuration repository.

Note: If you want to upgrade to a Content Manager EE V8.5 fixpack directly, you need to run the configuration manager in <IBMCMREPO>/<version>/bin /cmcfgmgr_CM to perform the Content Manager EE installation and configuration (for example, run /opt/IBM/cmrepository/8.5.00.100/bin/cmcfgmgr_CM to install and configure Content Manager EE V8.5 fix pack 1)

Step 5.2 Add the target machine where library server and/or resource manager database are on.

Step 5.3 Select library server component if library server database is on the target machine and select resource manager database component if resource manager database are on the target machine.

Step 5.4 Input suitable values in corresponding fields, the values can be from 5.1 Collect information and backup: Step 1.1 Collect Content Manager product information.

Step 5.5 For DB2, select **use existing database** for library server and/or resource manager database

Step 5.6 Press **No**, when get **Confirm Features Reinstall** prompt

Fig 6-1 Confirm Features Reinstall

Step 5.7 Verify the configuration is successful

Verify that the complete panel shows the configuration success and there is not any ERROR/EXCEPTION in cmconfig.log.

If library server and resource manager database are configured on separate machines, or you have multiple resource manager database servers, you need to repeat above steps on each server.

6.A.6 Step 6: Configure other components

When the library server and resource manager database are upgraded successfully, you can configure Content Manager V8.5.x other components.

Step 6.1 Restore the original cmconfig.xml.

Step 6.2 Run the Content Manager EE V8.5 configuration manager from latest fix pack repository and configure the other components that were configured on Content Manager EE V8.4.x

6.A.7 Step 7: Validate the upgrade

No matter whether you used system move upgrade or in-place upgrade, the configuration is likely to be changed after this upgrade. For example, WebSphere Application Server http/https port numbers might be changed.

To make sure the configuration matches with the new environment, you need to validate the upgrade. Go through validation points in **Chapter 8.2 Match target system configuration** in Documentation for IBM Content Manager Enterprise Edition System Move.

You can configure client applications and run enough acceptance tests to validate that the system is functioning properly.

6.B System Move Upgrade

6.B.1 Step 1: Taking Content Manager EE system offline

You can totally follow the steps of **Chapter 7.1 Taking Content Manager EE system on the source offline** in Documentation for IBM Content Manager Enterprise Edition System Move.

6.B.2 Step 2: Move Content Manager EE V8.4.x data

For Content Manager EE system move scenario, you can totally follow the steps in Documentation for IBM Content Manager Enterprise Edition System Move is to move Content Manager EE V8.4.x data:

Chapter 7.2: library server database and resource manager database move

Note: If the DBMS versions for the source system and target system are different, you might need to upgrade the DBMS in the target system. You can follow the appropriate DB2 or Oracle documentation to move the databases. Here are some tips.

1. **Recommendation:** Don't upgrade the DB2 or Oracle database version on the source system because the source system is a full backup, and it can be used as workable system if the system move fails and you need to restore your production environment to a working state.
2. If you want to use the database backup/restore approach to move the data

contained in DB2, here are some restrictions to be considered for the DB2 versions supported by Content Manager version 8.5. You can see the details in the following URLs.

DB2V10.5:
http://www-01.ibm.com/support/knowledgecenter/SSEPGG_10.5.0/com.ibm.db2.luw.qb.upgrade.doc/doc/c0007191.html
DB2V10.1:
http://www-01.ibm.com/support/knowledgecenter/SSEPGG_10.1.0/com.ibm.db2.luw.qb.upgrade.doc/doc/c0007191.html
DB2V9.7:
http://www-01.ibm.com/support/knowledgecenter/SSEPGG_9.7.0/com.ibm.db2.luw.qb.upgrade.doc/doc/c0007191.html

A. DB2 Backup and restore operations between different operating systems and hardware platforms:
http://www-01.ibm.com/support/knowledgecenter/api/content/SSEPGG_10.5.0/com.ibm.db2.luw.admin.ha.doc/doc/c0005960.html

B. Restoring databases backed up from the source system on either DB2 version 9.1 or version 9.5 and restoring them directly to DB2 version 10.1 or version 10.5 on the target system is not possible. You might consider installing DB2 version 9.7 on the target system and restoring the DB2 version 9.1 or version 9.5 databases to the DB2 version 9.7 system as an interim step, then upgrade the DB2 version 9.7 databases to either DB2 version 10.1 or version 10.5 as needed.

3. See "Following are some 'system move upgrade' scenarios that the export/import approach might be chosen" information found in section 5.1 Collect information and backup Step 1.1 Collect Content Manager product information to see whether you can make use of the export/import approach.
4. **Recommendation**: Engage the IBM LAB services team or Oracle product services team to design and implement a DB2 or Oracle database move and upgrade.

Chapter 7.3: Move the Resource Manage objects

Chapter 7.5: DB2 only: DB2 Net Search Extender indexes

Chapter 7.6: Oracle only: Re-create Oracle Text Search indexes

6.B.3 Step 3: Prepare cmconfig.xml

You can totally follow the steps in section: 6.A.4 Step 4: Prepare cmconfig.xml

6.B.4 Step 4: Upgrade library server and resource manager database to V8.5.x

You can totally follow the steps in section: 6.A.5 Step 5: Upgrade library server and resource manager database to V8.5.x

6.B.5 Step 5: Configure other components

You can totally follow the steps in section: 6.A.6 Step 6: Configure other components

6.B.6 Step 6: Validate the upgrade

You can totally follow the steps in section: 6.A.7 Step 7: Validate the upgrade

7. Samples

The following details and screens captures show two examples for Content Manager EE V8.4.x to V8.5.x upgrade:

Table 7-1 samples

	In-place upgrade sample		**System move upgrade sample**	
	Source system	Target system	Source system	Target system
Content Manager EE version	Content Manager EE V8.4.2 GA	Content Manager EE V8.5.0.1	Content Manager EE V8.4.1 GA	Content Manager EE V8.5 GA
HW	Power 6	Power 6	x86	x86
OS version	AIX 6.1	AIX 6.1	Win 2k3 32-bit	Win 2k8 R2
DBMS version	DB2 V9.7 fp9 64-bit	DB2 V9.7 fp9 64-bit	Oracle 10.2.0.5 32-bit	Oracle 11.2.0.2 64-bit
WebSphere Application Server version	WebSphere Application Server 6.1 32-bit	WebSphere Application Server 8.5.5 64-bit	WebSphere Application Server 6.1 32-bit	WebSphere Application Server 8.0 64-bit
NSE	DB2 V9.7	DB2 V9.7	N/A	N/A

7.1 In-place upgrade sample

This sample outlines the upgrade process for upgrading a Content Manager EE Version 8.4.2 system to Content Manager EE Version 8.5.0.1 on AIX 6.1.

7.1.1 Collecting the configuration information

Collect the Content Manager EE Version 8.4.2 system information as outlined in table 7-2.

Table 7-2 basic information

Software information	
OS version	AIX 6.1
Hostname	aquarius
DB2 version	DB2 v9.7fp9 ESE 64-bit
DB2 Product Home	/opt/IBM/db2cmv8
DB2 Instance	db2inst1
DB2 Instance admin	db2inst1
DB2 NSE version	DB2_v97fp9
WebSphere version	IBM WebSphere Application Server 7.0.0.29
WebSphere profile	AppSrv01
Content Manager EE system information	
Content Manager EE version	8.4.2.0
Database components	library server

	resource manager
Other components	resource manager application server system administration client connectors
Directory name (IBMCMROOT)	/opt/IBM/db2cmv8
Working directory (Working DIR)	/home/ibmcmadm
Resource manager count	1
Library server configuration information	
Library server Name	icmnlsdb
Schema name	icmadmin
Administration ID	icmadmin
Password	password
Connection ID	icmconct
Password	password
Enable unicode	YES
Enable for LDAP (optional)	NO
Library server ID	1
Library server transaction ID duration	180
Database port	50000
NSE enable	YES
Resource manager database configuration information	
Resource manager database name	rmdb
Administration ID	rmadmin
Password	password
File System volume	/home
File System volume location	/home/lbosdata
Resource manager application configuration information	
Resource manager Web application name	icmrm
Resource manager Web application context root	/icmrm
HTTP port	9080
WebSphere Application Server administrative user	root
HTTPS port	9443

7.1.2 Prepare for upgrade

7.1.2.1 Backup Content Manager EE Version 8.4.2

Log in the Content Manager EE Version 8.4.2 system machine with root user, and do the following backup operations:

1. Backup Product directory (IBMCMROOT)

Change directory to **/opt/IBM** and backup the Product directory (IBMCMROOT):
root@aquarius# cp -r db2cmv8 db2cmv8.bak842
db2cmv8.bak842 is the backup directory.

2. Backup Working directory

Change directory to **/home** and backup the Working directory:
root@aquarius# cp -r ibmcmadm ibmcmadm.bak842
ibmcmadm.bak842 is the backup directory.

3. Backup Installation Data Repository (IDR) file

Change directory to **/var/ibm/ecm** and backup the Installation Data Repository (IDR) file:
root@aquarius# cp -r ECMInstallDataV8.xml ECMInstallDataV8.xml.bak842
ECMInstallDataV8.xml.bak842 is the backup file.

7.1.2.2 WebSphere Application Server setting

Install WebSphere Application Server 8.5.5.0
Table 7- 3 WebSphere Application Server configuration information

WebSphere Application Server version	IBM WebSphere Application Server 8.5.5.0
WebSphere Application Server home	/usr/IBM/WebSphere855/AppServer
Application server profile home	/usr/IBM/WebSphere855/AppServer/profiles/AppSrv01
Http port number	9082
Https port number	9446
Admin user	Root

7.1.2.3 Building the Content Manager EE Version 8.5.00.000 and 8.5.00.100 configuration repository

Open a command Window and switch into the Content Manager EE Version 8.5.00.000 product package directory. Then run the install batch file:

1. root@aquarius# ./install

2. Respond to the screen prompts as follows:

Table 7-4 Content Manager EE V8.5 configuration repository install

Screen	Action
IBM Content Manager EE V8.5 Language	Select: "**English**"
	Click **OK**
License Agreement	Select: "**I accept both the IBM and the non-IBM terms**"
	Click **Next**
Install Destination	Choose a feature store directory for this installation: **/opt/IBM/cmrepository**

	Click **Next**
Install Destination	Click **Next**
Pre-Installation Summary	Click **Install**
Installation Complete	De-select: **Run the configuration wizard**
	Click **Done**

3. Switch into the Content Manager EE Version 8.5.00.100 product package directory, repeat Step 1 and Step 2.

4. Verify both 8.5.00.000 and 8.5.00.100 repository are in IBMCMREPO

```
root@aquarius# ls $IBMCMREPO
8.5.00.000          8.5.00.100
```

7.1.3 Upgrading Content Manager EE V8.5.0.1

7.1.3.1 Stop all Content Manager EE system services

Make sure all resource manager migrator, replicator, and deletion tasks have already completed so that no tasks are pending. Make sure that all results are 0 before proceeding.

Migrator:

Enter the following commands to check for pending resource manager migration tasks.

```
> db2 connect to rmdb user rmadmin using password
> db2 "SELECT COUNT(*) FROM RMADMIN.RMMIGRATIONTASKS"
1
-----------
          0
  1 record(s) selected.
```

Replicator:

Enter following commands to check for pending resource manager replication tasks:

```
> db2 connect to rmdb user rmadmin using password
> db2 "SELECT COUNT(*) FROM RMADMIN.RMREPLICATION"
1
-----------
          0
  1 record(s) selected.
```

Deletion:

Enter the following commands to check for pending deletion tasks:

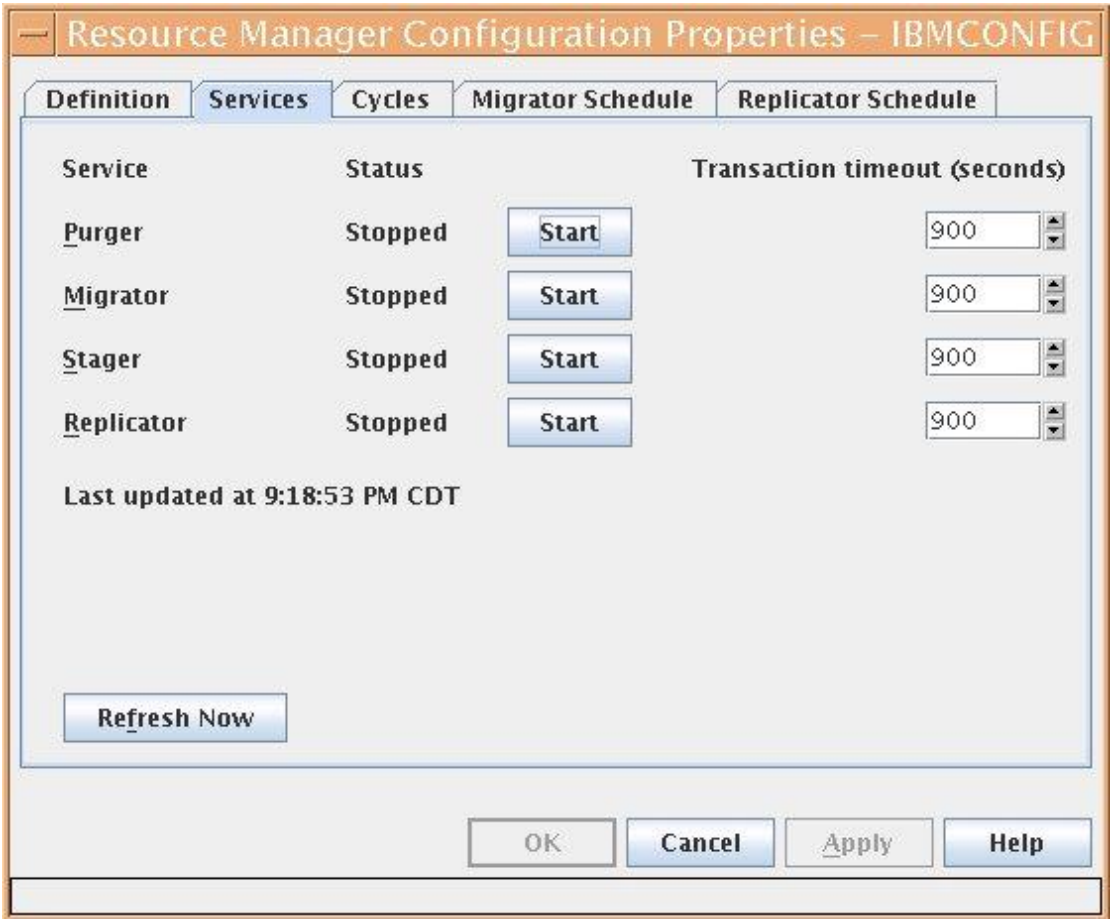
```
> db2 connect to icmnlsdb user icmadmin using password
> db2 "SELECT COUNT(*) FROM ICMADMIN.ICMSTITEMSTODELETE"
1
```

```
-----------
          0
  1 record(s) selected.
```

```
> db2 connect to rmdb user rmadmin using password
> db2 "SELECT COUNT(*) FROM RMADMIN.RMOBJECTS WHERE OBJ_STATUS='D'"
1
-----------
          0
  1 record(s) selected.
```

Stop resource manager services using the Content Manager EE system administration client

Fig 7-1 Stopping resource manager purger, migrator, stager, and replicator services.



Make sure that the library server monitor service is stopped.

```
root@aquarius# /etc/rc.cmlsproc -shutdown

/etc/rc.cmlsproc: CM monitor daemon shutdown completed!
```

1. Enter the following commands to get the DB2 Net Search Extender index table

names:

```
> db2 "SELECT LOGTABLENAME from DB2EXT.TTEXTINDEXES"
LOGTABLENAME
--------------------------------------------------------------------------------
TLOGIX444305
TLOGIX384905
TLOGIX123509
TLOGIX133509
TLOGIX143509
TLOGIX153509
TLOGIX163509
TLOGIX173509
TLOGIX183509
TLOGIX193509
TLOGIX203509
TLOGIX223509
TLOGIX243509
TLOGIX253509
TLOGIX263509
TLOGIX273509
TLOGIX473509
TLOGIX313809
TLOGIX453909

  19 record(s) selected.
```

2. Enter the following command for each LOGTABLE to make sure that the results are 0.

```
> db2 "SELECT COUNT(*) from DB2EXT.TLOGTABLE"
Example: db2 "SELECT COUNT(*) from DB2EXT. TLOGIX444305"
1
-----------
          0
  1 record(s) selected.
```

Make sure that the DB2 Net Search Extender service is stopped.

3. Stop the DB2 NSE service:

```
$ db2text stop
CTE0001 Operation completed successfully.
```

Stop the WebSphere Application Server application server:

```
[/usr/IBM/WebSphere7/AppServer/profiles/AppSrv01/bin]
root@aquarius# ./stopServer.sh server1
```

ADMU0116I: Tool information is being logged in file
/usr/IBM/WebSphere7/AppServer/profiles/AppSrv01/logs/server1/stopServer.log
ADMU0128I: Starting tool with the AppSrv01 profile
ADMU3100I: Reading configuration for server: server1
ADMU3201I: Server stop request issued. Waiting for stop status.
ADMU4000I: Server server1 stop completed.

7.1.3.2 Backup icmnlsdb and rmdb

Log on as user db2inst1 and backup icmnlsdb and rmdb:

Backup icmnlsdb

bash-3.2$ db2 backup database icmnlsdb to /home/db2inst1/DBBackupCM842
Backup successful. The timestamp for this backup image is : 20140527044444

Backup rmdb

bash-3.2$ db2 backup database rmdb to /home/db2inst1/DBBackupCM842
Backup successful. The timestamp for this backup image is : 20140527044544

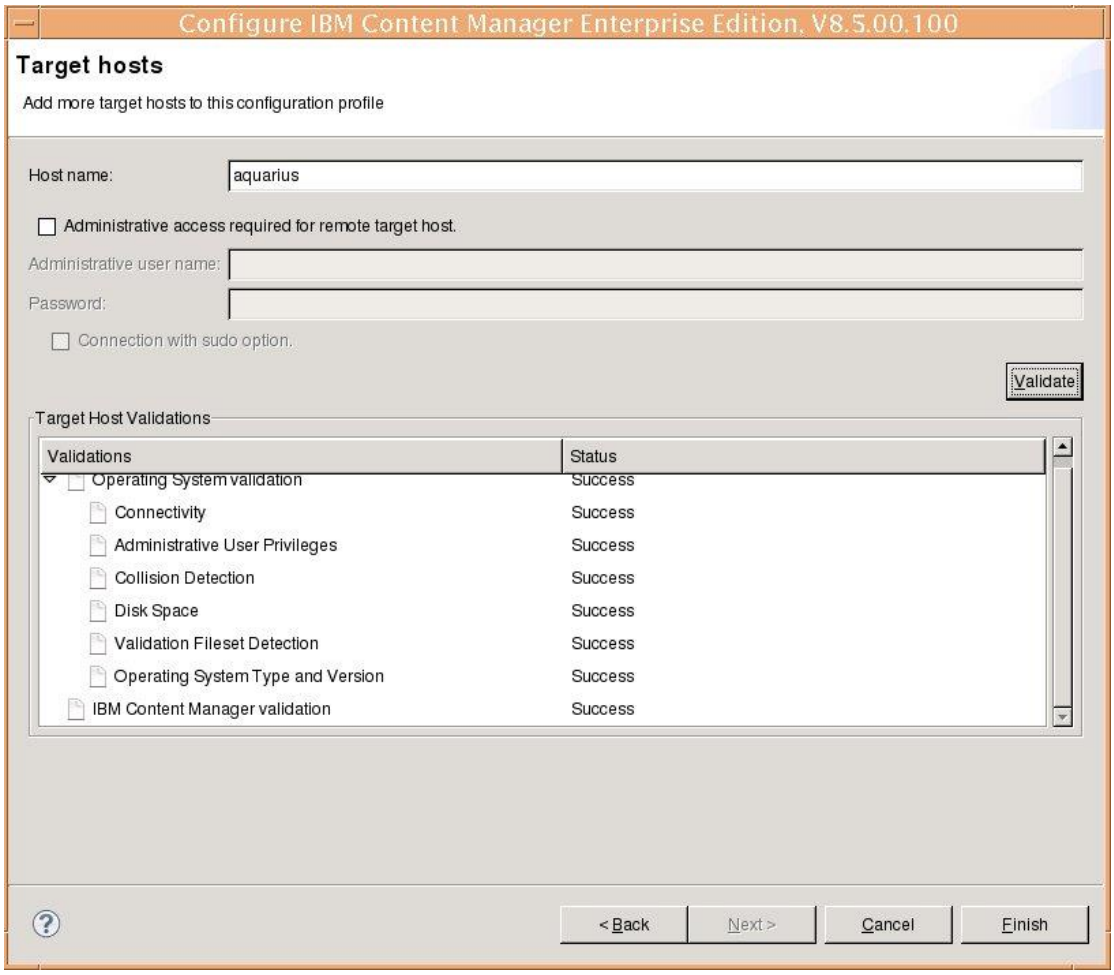
7.1.3.3 Remove Installation Data Repository (IDR) file

Change directory to **/var/ibm/ecm** and remove the Installation Data Repository (IDR) file:
root@aquarius# rm ECMInstallDataV8.xml.

7.1.3.4 Install library server and resource manager database files

1. Start **cmcfgmgr_CM** in Content Manager EE 8.5.00.100 repository
2. Add the **aquarius** as target host and validate it

Fig 7-2 validate target host aquarius



3. Press **Finish** to get configuration wizard
4. Respond to the wizard screen prompts as seen in table 7-5 below:

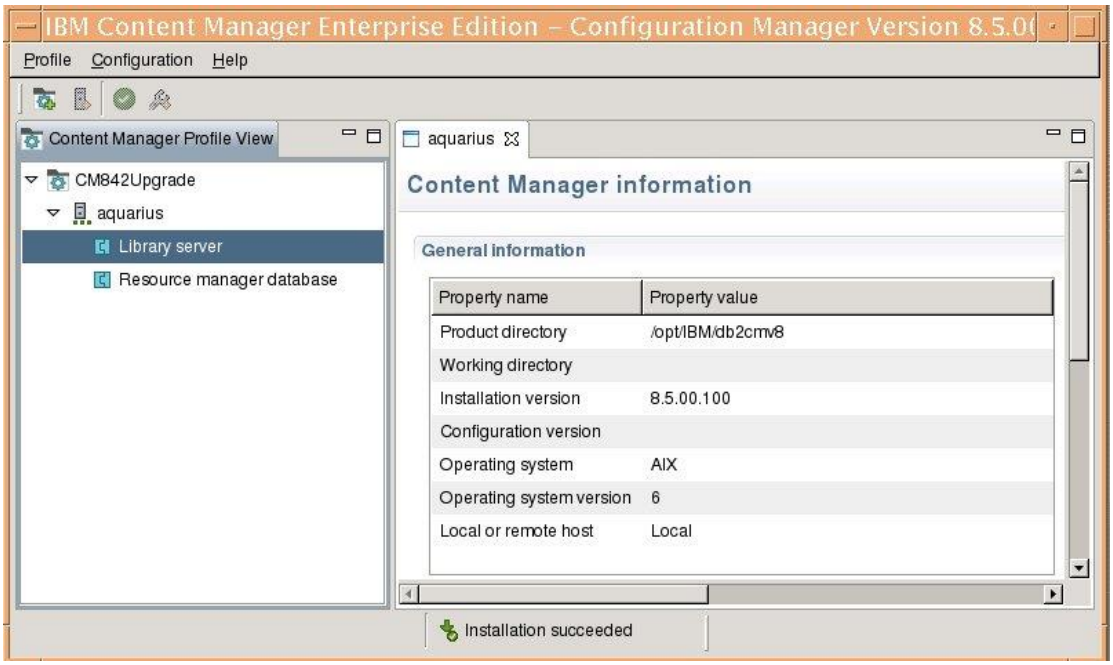
Table 7-5 Install library server and resource manager database files

Screen	Action
IBM Content Manager EE V8.5.00.100 Configuration Wizard	Click **Next**
Install Destination	Click **Next**
Product Components	Select: **Library server** **Resource manager database**
	Server Database Type: **DB2 Universal Database(TM)**
	Select: **Copy selected component to the product directory on the target machine, but do not configure**
	Click **Next**
License Type	Select: **Authorized User(UVU)**

	Click **Next**
Start Configuration	Click **Finish**
Configuration Complete	Click **Done**

5. The configuration result as Fig 7-3 below:

Fig 7-3 library server and resource manager database installation result



6. Close the configuration manager

7.1.3.5 Upgrade library server and resource manager database

1. Back up cmconfig.xml file in /opt/IBM/cmrepository/8.5.00.100/cmcfgmgr

2. Modify the cmconfig.xml file like:

```
<?xml version="1.0"?>
<cfgmgr>
    <global>
        <property name="RXA_CONNECT_TIMEOUT" value="-1"></property>
        <property name="RXA_RUN_INTERNAL_TIMEOUT_WIN"
        value="-1"></property>
        <property name="RXA_RUN_INTERNAL_TIMEOUT_UNIX"
        value="20000"></property>
        <property name="CFG_STATUS_CHECK_INTERVAL"
        value="5000"></property>
    </global>
<pages>
    <!-- At last page of Configuration Manager update the following parameters of
    lsrte, CM, rmdb model -->
        <page pageId="com.ibm.cm.cfg.wizards.StartConfigPage">
            <model name="lsrte">
                <property name="nextFileOperation.needToDo" value="true"
```

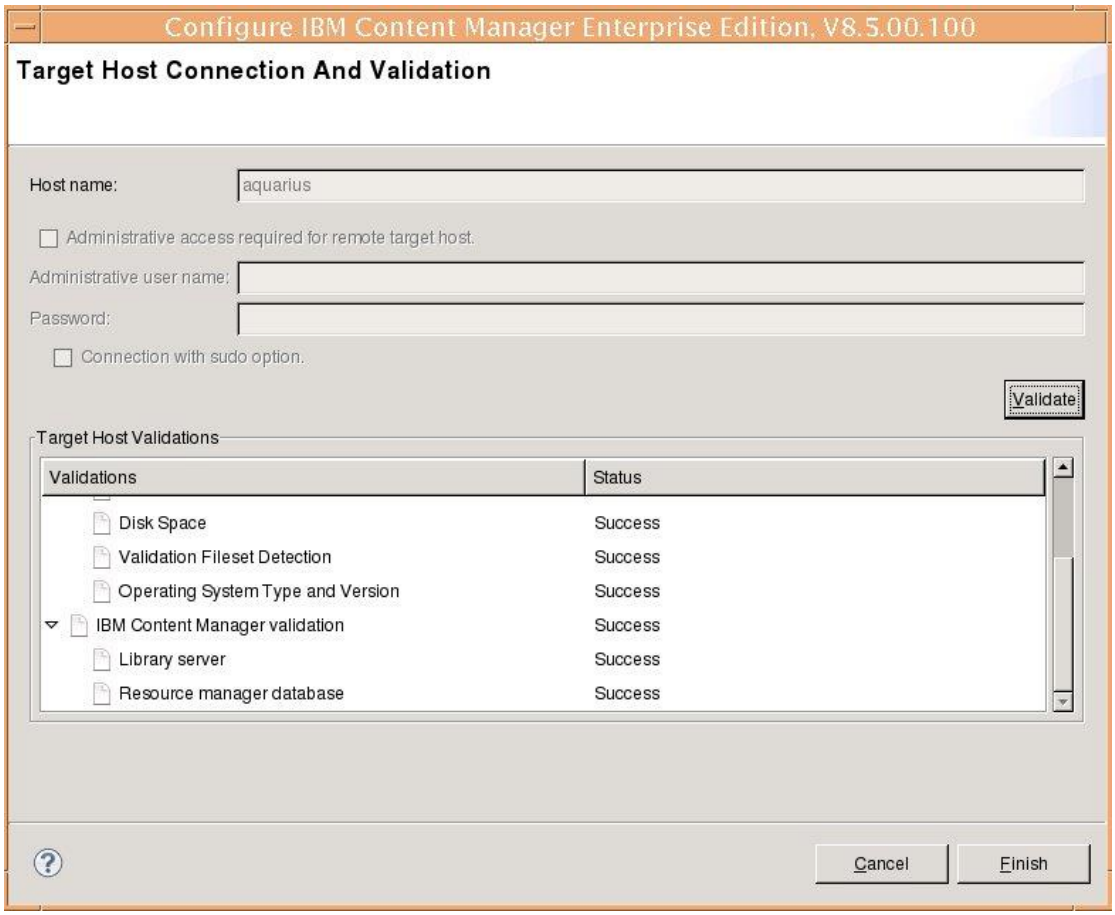
```
                aspect="before"></property>
        <!-- Set configuration type of lsrte to 'upgrade'-->
                <property name="nextConfigOperation.type" value="upgrade"
                aspect="before"></property>
            </model>
            <model name="rmdb" inst="rmdb">
                <property name="nextFileOperation.needToDo" value="true"
                aspect="before"></property>
        <!-- Set configuration type of rmdb to 'upgrade'-->
                <property name="nextConfigOperation.type" value="upgrade"
                aspect="before"></property>
            </model>
            <model name="cm">
        <!-- Set configuration type of cm model to 'upgrade'-->
                <property name="nextFileOperation.type" value="upgrade"
                aspect="before"></property>
        <!-- Set configuration type of cm model to 'upgrade'-->
                <property name="nextConfigOperation.type" value="upgrade"
                aspect="before"></property>
                <property name="actionType" value="UPGRADE_ADD"
                aspect="before"></property>
            </model>
        </page>
    </pages>
</cfgmgr>
```

3. Launch **cmcfgmgr_CM** in Content Manager EE 8.5.00.100 repository

Make sure the configuration manager has been restarted after Step 2.

4. Add the **aquarius** as target host and validate it

Fig 7-4 validate target host aquarius



5. Press **Finish** to get configuration wizard

6. Respond to the wizard screen prompts as seen in table 7-6 below:

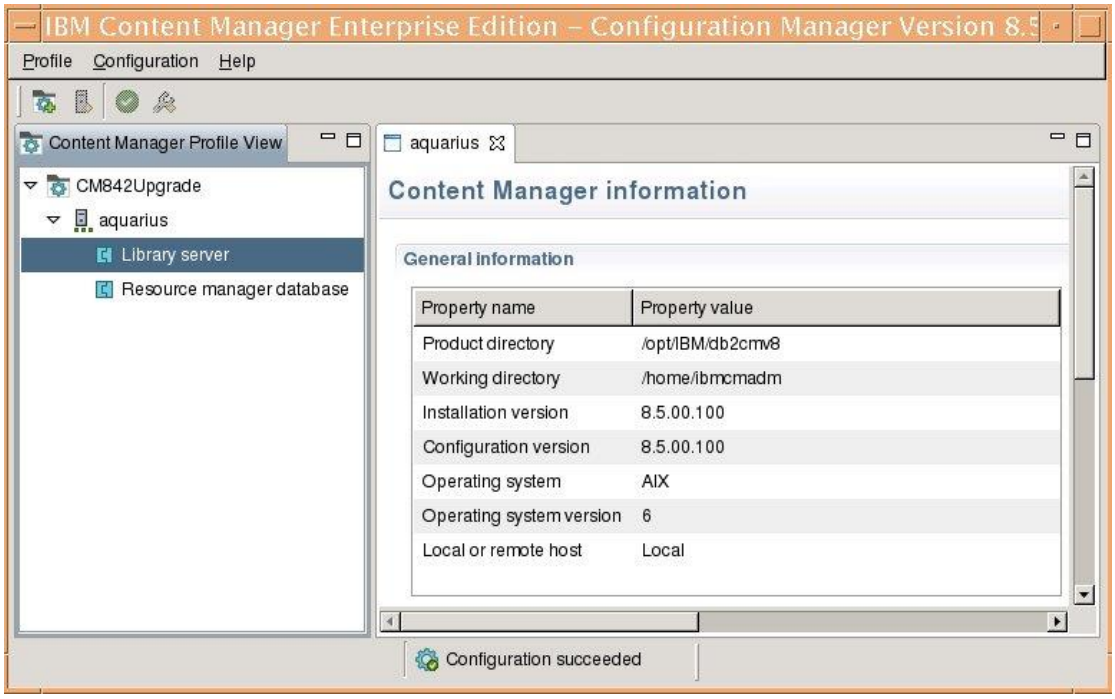
Table 7-6 Upgrade library server and resource manager database

Screen	Action
IBM Content Manager EE V8.5.00.100 Configuration Wizard	Click **Next**
Install Destination	Click **Next**
Product Components	Select: **Library server** **Resource manager database**
	Server Database Type: **DB2 Universal Database(TM)**
	De-select: **Copy selected component to the product directory on the target machine, but do not configure**
	Click **Next**
License Type	Select: **Authorized User(UVU)**
	Click **Next**

Create or identify an administrative user	User: select **Use existing user** Administrative user name: **ibmcmadm** Password: **password** Confirm password: **password** Administrative user group: **ibmcmgrp**
	Click **Next**
Database Product Directory	DB2 Database product directory: **/opt/IBM/db2/V9.7**
Library server Information	Database: select **Use existing database** Library server database name: **icmnlsdb** Library server schema name: **icmadmin** Database port: **50000** User: Select **Use existing user** Library server administration ID: **icmadmin** Password: **password** Confirm password: **password**
	Click **Next**
Library server Information	User: Select **Use existing user** Library server administration ID: **icmconct** Password: **password** Confirm password: **password**
	Click **Next**
Library server connection to resource manager Application	Resource manager application hostname: **aquarius** Resource manager Web application context root: **/icmrm** Resource manager Web application port: **9082** Resource manager secure Web application port: **9446**
	Click **Next**
Resource manager database	Database: select **Use existing database** Resource manager database name: **rmdb** Resource manager database schema name: **rmadmin** Database port: **50000** User: Select **Use existing user** Resource manager database administration ID: **rmadmin** Password: **password** Confirm password: **password**
	Click **Next**
Confirm Features Reinstall	Click **No**
Start Configuration	Click **Finish**
Configuration Complete	Click **Done**

7. Get the result as Fig 7-5

Fig 7-5 Upgrade library server and resource manager database



8. Close the configuration manager
9. Verify the library server and resource manager database upgradelibrary server database

Connect icmnlsdb with icmadmin user and run the SQL:

```
$ db2 select committed,lscurrentversion from icmstlsupdatehist order by lastupdate

COMMITTED LSCURRENTVERSION
----------- ----------------------------------------------------------------
       1024 8.4.02.000
       2000 8.5.00.100
       2010 8.5.00.100
       2020 8.5.00.100
       2030 8.5.00.100
       2050 8.5.00.100
      10002
       2060 8.5.00.100
       2080 8.5.00.100

  9 record(s) selected.
```

resource manager database

Connect rmdb with rmadmin and run the SQL:

```
bash-3.2$ db2 select rmlevel from rmversion

RMLEVEL
```

```
------------------------------
8.4.02.000
8.5.00.100

  2 record(s) selected.
```

7.1.3.6 Configure other components

1. Restore cmcmonfig.xml on Content Manager EE V8.5.00.100 configuration repository
2. Restore the original cmcmonfig.xml file, which is backed up in 7.1.3.5 Upgrade Library Server and Resource Manager Database: Step 1. Start cmcfgmgr_CM in Content Manager EE 8.5.00.100 repository

Make sure that the configuration manager is restarted after Step 1.

3. Add the **aquarius** as target host and validate it

Get the same result as 7.1.3.5 Upgrade Library Server and Resource Manager Database: Step 4.

4. Press **Finish** to get configuration wizard
5. Respond to the wizard screen prompts as seen in table 7-7 below:

Table 7-7 Configure other components

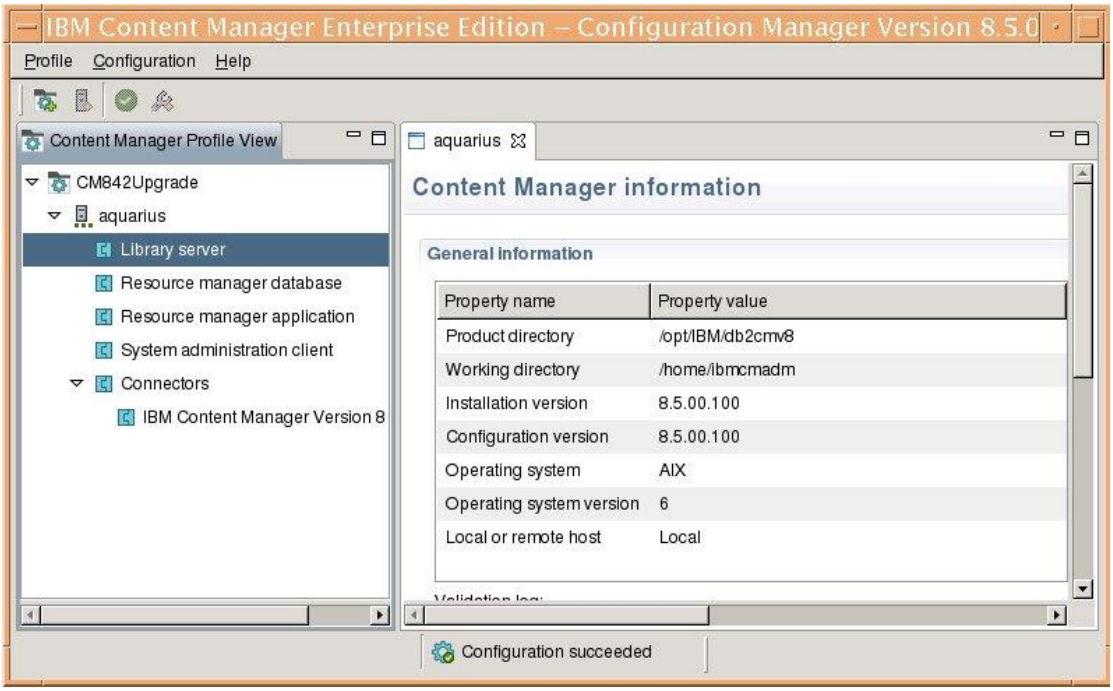
Screen	Action
IBM Content Manager EE V8.5.00.100 Configuration Wizard	Click **Next**
Install Destination	Click **Next**
Product Components	Select: **Resource manager application** **System administration client** Connectors: **IBM Content Manager Version 8 connector**
	De-select: **Copy selected component to the product directory on the target machine, but do not configure**
	Click **Next**
License Type	Click **Next**
Database Product Directory	DB2 Database product directory: **/opt/IBM/db2/V9.7**
	Click **Next**
Resource manager application server	Application server home directory: **/usr/IBM/WebSphere855/AppServer** Application profile home directory: **/usr/IBM/WebSphere855/AppServer/profiles/AppSrv01**

	De-select: **Enable LDAP** De-select: **Application server security enable** Resource manager application name: **icmrm** Resource manager application context root: **/icmrm** Select: **specify the JDBC path for the WebSphere application Server variable** WebSphere variable value for DB2_UNIVERSAL_JDBC_PATH: **/opt/IBM/db2/V9.7java**
	Click **Next**
Resource manager application deployment target Tab	Select: **Application Server**
	Application server node name or application server name: Select : **aquariusNode04/server1**
HTTP connection information tab	Hostname: **aquarius** HTTP port: **9082** HTTPS port: **9446**
	Click **Next**
Resource Manager Application connection to Library Server	Library Server host name: **aquarius** Library Server operation system: **AIX** Library server name: **icmnlsdb** Library server schema name: **icmadmin** Library server database port: **50000** Library server administration ID: **icmadmin** Password: **password**
	Click **Next**
Resource Manager Application connection to Resource Manager Database	Resource manager database host name: **aquarius** Resource manager operation system: **AIX** Resource manager database name: **rmdb** Resource manager database schema name: **rmadmin** Resource manager database port: **50000** Resource manager database administration ID: **rmadmin** Password: **password**
	Click **Next**
Resource Manager Application	Resource manager volume mount point: **/home** Resource manager staging directory: **/home/staging**
	Click **Next**
System Administration Client	Select: **Local**
	Click **Next**
System Administration Client Connection	Library server connection name: **icmnlsdb** Library Server host name: **aquarius** Library Server operation system: **AIX** Authentication type: **Server**
	Click **Next**
IBM Content Manager	Library server name: **icmnlsdb**

Version 8 Connector	Library server administrative user: **icmadmin** Database port: **50000** Library server database connection user: **icmconct** Password: **password**
	Click **Next**
Start Configuration	Click **Finish**
Configuration Complete	Click **Done**

6. The configuration result as Fig 7-6 below:

Fig 7-6 other components results



7. Close the configuration manager and restart Resource manager application WebSphere application “server1”.

7.1.4 Matching configuration on the new system

The WebSphere Application Server is changed before upgrade, so is necessary to check http/https ports in the library server and resource manager databases.

Check the port values in the library server database:

Connect to icmnlsdb with icmadmin user and run the SQL:

```
$ db2 "SELECT RMACCESSTYPE,PORT FROM
ICMADMIN.ICMSTRMACCESSTYPES where RMCODE='1'"

RMACCESSTYPE PORT
------------ -----------
           1        9082
           6        9446
```

```
  2 record(s) selected.
```

Verify that the values match and do not require updating.

Check the port values in the resource manager database:

Connect to rmdb with rmadmin user and run the SQL:

```
$ db2 " SELECT SVR_PORT from RMADMIN.RMSERVER where
SVR_SERVERTYPE ='RM"'

SVR_PORT
----------
9082

  1 record(s) selected.
```

7.2 System move upgrade sample

This sample outlines the one-shot upgrade process for upgrading a Content Manager EE Version 8.4.1 on Microsoft Windows Server 2003 32-bit environment system to Content Manager EE Version 8.5 on Microsoft Windows Server 2008 R2 environment. Because of Content Manager EE software prerequisites, a system move is required in this process.

7.2.1 Collect the configuration information of source system

Collect the source machine information on source system as seen in table 7-8:

Table 7-8 basic information on source

Software information on source system	
Operating system version	Windows server 2003 32-bit
Hostname	vmwin2k3-32bit
Oracle version	Oracle 10.2.0.5 32-bit
Oracle Home	C:\oracle\product\10.2.0\db_1
WebSphere Application Server version	IBM WebSphere Application Server 6.1.0.33
WebSphere Application Server profile	AppSrv01
Oracle Database Information: icmnlsdb	
The icmnlsdb was created with Content Manager EE V8 library server DBCA template ICM_Library_Server.dbt, which is included with the Content Manager EE V8.4.1 product installation package. All database definitions used the predefined DBCA template except for the character set.	
Database Character Set	AL32UTF8
National Character Set	AL16UTF16
Oracle Database Information: rmdb	
The rmdb was created with Content Manager EE V8 resource manager DBCA	

template ICM_Resource_Manager.dbt, which is included with the Content Manager EE V8.4.1 product installation package. All database definitions used the predefined DBCA template except for the character set.	
Database Character Set	AL32UTF8
National Character Set	AL16UTF16
Content Manager EE system information on source system	
Content Manager EE version	8.4.1.0
Database components	library server resource manager
Other components	resource manager application system administration client
Directory name (IBMCMROOT)	C:\IBM\db2cmv8
Working directory (Working DIR)	C:\IBM\db2cmv8
Resource manager count	1
Library server configuration information on source	
Library server name	icmnlsdb
Oracle listener port for library server instance	1521
Oracle net service name	icmnlsdb.cn.ibm.com
Library server database administrative user	icmadmin
Password	password
Library server database connection user	icmconct
Password	password
Frequently queried large objects	ICMVFQ04
Moderately queried large objects	ICMLFQ32
Rarely queried large objects	ICMLNF32
Frequently queried small objects	ICMSFQ04
Table indexes	ICMLSNDX
Enable for LDAP (optional)	NO
Library server ID	1
Library server transaction ID duration	180
Enable text search	No
Resource manager database configuration information	
Resource manager name	icmrm
Oracle listener port for Resource manager instance	1521
Oracle net service name	rmdb.cn.ibm.com
Resource manager administrator user	rmadmin
Password	password
Frequently queried large objects	OBJECTS

Collections	SMS
Large objects (BLOBS)	BLOBS
Specify DBREPLICAS table space information	REPLICAS
Tracking system transactions	TRACKING
Item validation	VALIDATEITM
Table Indexes	OBJINDX
File System volume	C_nolabel
File System volume location	C:\lbosdata
Resource manager application configuration information	
Resource manager WebSphere Application Server application name	icmrm
Resource manager WebSphere Application Server application context root	/icmrm
HTTP port	9080
HTTPS port	9443
WebSphere Application Server administrative user	SYSTEM

7.2.2 Prepare target system environment

Because this sample requires a system move, need to prepare a new machine for Content Manager EE V8.5 system.

7.2.2.1 System setting

Prepare the target operating system

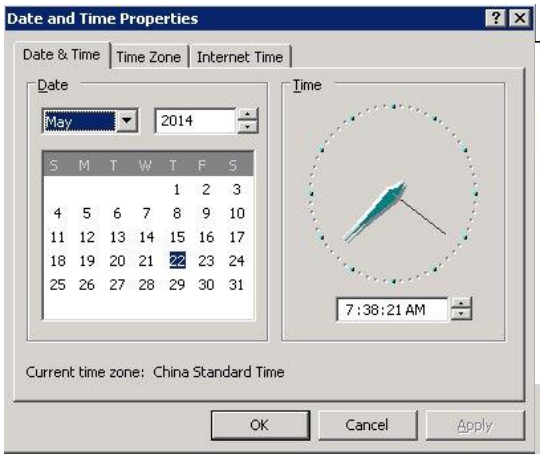
Table 7-9 Base information on target system

Operating system version	Windows Server 2008 R2
Hostname	vmwin2k8r2

Synchronize system time

Make sure that the system time is synchronized between two systems. A time difference of 1 minute or less is acceptable.

Fig 7-7 Synchronize the target time with the source



Windows Server 2003 Windows Server 2008 R2

7.2.2.2 Oracle setting

Install Oracle version 11.2.0.2 64-bit on the Windows Server 2008 R2, and create the database instance.

Table 7-10 Oracle setting on the target.

Oracle version	Oracle 11.2.0.2 64-bit
Oracle Home	C:\oralce\product\11.2.0\dbhome_1
Oracle Database Information: sharedb	
Create the shared database by using the DBCA ICM_shared_database_11g.dbt template, which is included with the Content Manager EE V8.5 product installation package. All database definitions use the predefined DBCA templates exception for the character set.	
Database Character Set	AL32UTF8
National Character Set	AL16UTF16
Oracle net service name	sharedb.cn.ibm.com
Library Server Admin ID	icmadmin
Library Server Connect ID	icmconct
Resource Manager Admin ID	rmadmin
All users' Password	password

7.2.2.3 WebSphere Application Server setting

Install WebSphere Application Server on the target.

Table 7-11 WebSphere Application Server configuration information on target

WebSphere Application Server version	IBM WebSphere Application Server 8.0.0.3
WebSphere Application Server home	C:\Program Files (x86)\IBM\WebSphere\AppServer
Application server profile home	C:\Program Files (x86)\IBM\WebSphere\AppServer\profiles\AppSrv01

Http port number	9080
Https port number	9443
Admin user	Administrator

7.2.2.4 Building the Content Manager EE V8.5 base configuration repository

Open a command prompt and switch into the Content Manager EE V8.5 base product package directory. Then, run the installation batch file:

1. C:\drivers>install.bat

2. Respond to the screen prompts as follows:

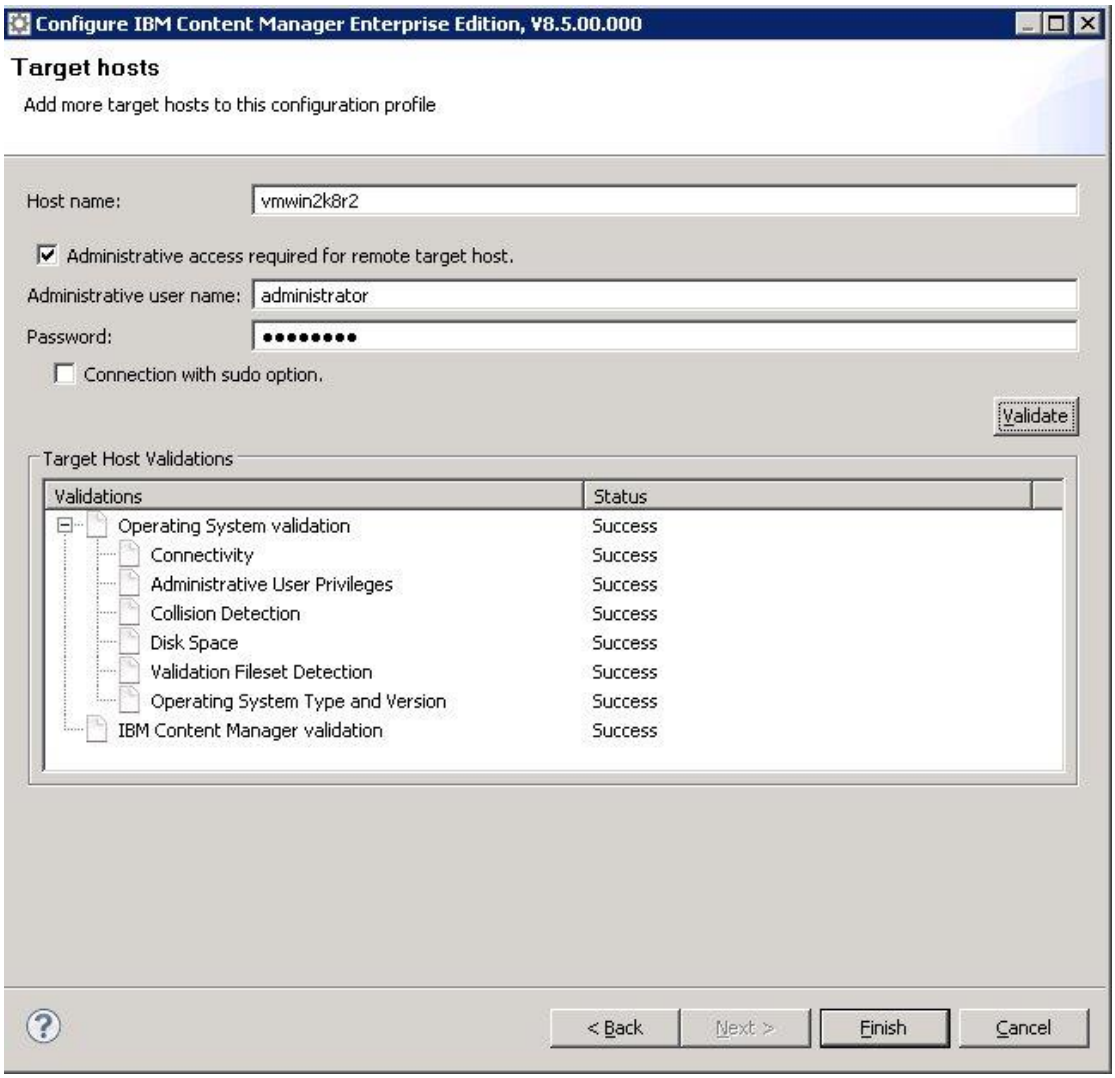
Table 7-12 Content Manager EE V8.5 configuration repository install

Screen	Action
IBM Content Manager EE V8.5 Language	Select: "**English**"
	Click **OK**
License Agreement	Select: "**I accept both the IBM and the non-IBM terms**"
	Click **Next**
Install Destination	Choose a feature store directory for this installation: **C:\IBM\cmrepository**
	Click **Next**
Install Destination	Click **Next**
Pre-Installation Summary	Click **Install**
Installation Complete	De-select: **Run the configuration wizard**
	Click **Done**

7.2.2.5 Configuring Content Manager EE V8.5 library server and resource manager database on the target machine

1. Start **cmcfgmgr_CM.bat** in Content Manager EE 8.5.00.000 repository
2. Add the **vmwin2k8r2** as target host and validate it

Fig 7-8 validate target host vmwin2k8r2



3. Press **Finish** to get configuration wizard
4. Respond to the wizard screen prompts as seen in table 7-13:

Table 7-13 Configure library server and resource manager database

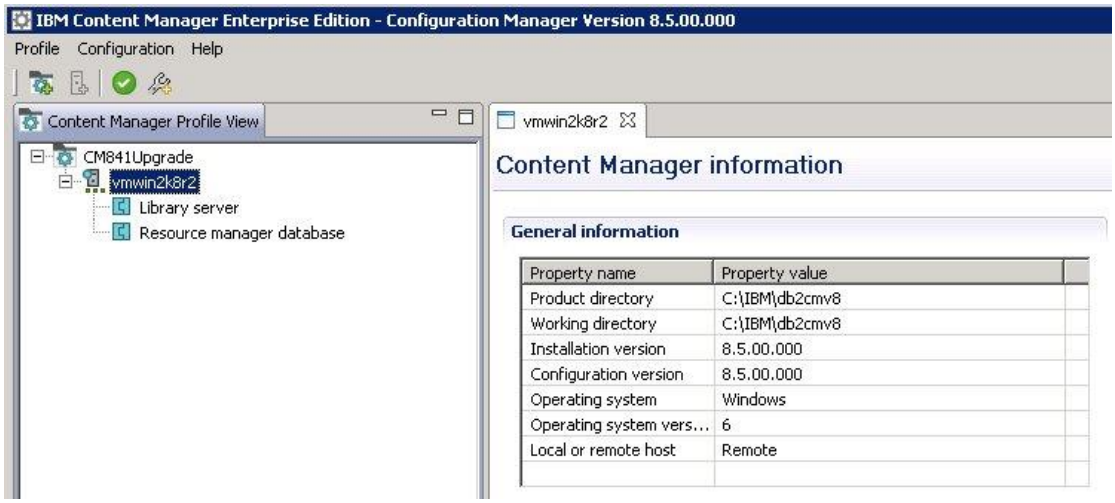
Screen	Action
IBM Content Manager EE V8.5.00.000 Configuration Wizard	Click **Next**
Install Destination	Product directory: **C:\IBM**
	Working directory: **C:\IBM\db2cmv8**
	Click **Next**

Product Components	Select: **Library server** **Resource manager database**
	Server Database Type: **Oracle Database**
	De-select: **Copy selected component to the product directory on the target machine, but do not configure**
	Click **Next**
License Type	Select: **Authorized User(UVU)**
	Click **Next**
Database Product Directory	Oracle product directory: **C:\oralce\product\11.2.0\dbhome_1**
	Click **Next**
Library Server Information	Library server name: **icmnlsdb** Listener port: **1521** Oracle service name: **sharedb.cn.ibm.com** De-select: **Share the database with the resource manager** JDBC connection string: j**dbc:oracle:thin:@//vmwin2k8r2:1521/sharedb.cn.ibm.com** Library server administrative user: **icmadmin** Password: **password**
	Click **Next**
Library Server Information	Library server database connection user: **icmconct** Password: **password**
	Click **Next**
Oracle Table Space Parameters	Frequently queried large objects: **ICMVFQ04** Moderately queried large objects: **ICMLFQ32** Rarely queried large objects: **ICMLNF32** Frequently queried small objects: **ICMSFQ04** Table indexes: **ICMLSNDX**
	Click **Next**
Library Server Connection to Resource Manager Application	Resource manager application hostname: **vmwin2k8r2** Resource manager Web application context root name: /**icmrm** Resource manager Web application port: **9080** Resource manager secure Web application port: **9443**
	Click **Next**

Resource Manager Database	Resource manager name: **rmdb** Listener port: **1521** Oracle service name: **sharedb.cn.ibm.com** JDBC connection string: **jdbc:oracle:thin:@//vmwin2k8r2:1521/sharedb.cn.ibm.com** Library server administrative user: **rmadmin** Password: **password**
	Click **Next**
Oracle Table Space Parameters	Frequently queried large objects: **OBJECTS** Collections: **SMS** Large objects (BLOBS): **BLOBS** Specify DBREPLICAS table space information: **REPLICAS** Tracking system transactions: **TRACKING** Item validation: **VALIDATEITM** Table Indexes: **OBJINDX**
	Click **Next**
Start Configuration	Click **Finish**
Configuration Complete	Click **Done**

5. The configuration result as Fig 7-9 below:

Fig 7-9 library server and resource manager database configuration result



6. Close the configuration manager

7.2.2.6 Drop and re-create icmadmin and rmadmin users in shared database.

1. Drop and re-create user icmadmin in PL/SQL

Set ORACLE_SID
C:\>set ORACLE_SID=shared

Connect database as sysdba
C:\>sqlplus /nolog

SQL*Plus: Release 11.2.0.2.0 Production on Fri May 23 00:14:13 2014
Copyright (c) 1982, 2010, Oracle. All rights reserved.
SQL> conn /as sysdba
Connected.

Drop icmadmin user
SQL> drop user icmadmin cascade;
User dropped.

Recreate icmadmin
SQL> C:\oralce\product\11.2.0\dbhome_1\assistants\dbca\templates\icmlsschemas.sql icmadmin password icmconct password ICMLFQ32 TEMP

PL/SQL procedure successfully completed.
PL/SQL procedure successfully completed.
User altered.
User altered.
Grant succeeded.
Grant succeeded.
Grant succeeded.
Grant succeeded.
Grant succeeded.
Grant succeeded.
Grant succeeded.
Grant succeeded.
Grant succeeded.
User altered.
Grant succeeded.
Disconnected from Oracle Database 11g Enterprise Edition Release 11.2.0.2.0 - 64bit Production With the Partitioning, OLAP, Data Mining and Real Application Testing options

2. Drop and recreate user rmadmin in PL/SQL

Set ORACLE_SID
C:\>set ORACLE_SID=shared

Connect database as sysdba
C:\>sqlplus /nolog
SQL*Plus: Release 11.2.0.2.0 Production on Fri May 23 00:14:13 2014
Copyright (c) 1982, 2010, Oracle. All rights reserved.
SQL> conn /as sysdba
Connected.

Drop rmadmin user
SQL> drop user rmadmin cascade;

User dropped.

Recreate icmadmin

SQL> C:\oralce\product\11.2.0\dbhome_1\assistants\dbca\templates\icmrmschema.sql rmadmin password OBJPARTS TEMP

old 4: SELECT count(*) INTO existsUser FROM all_users WHERE UPPER(username)=UPPER('&RMAdminID') and ROWNUM=1;
new 4: SELECT count(*) INTO existsUser FROM all_users WHERE UPPER(username)=UPPER('rmadmin') and ROWNUM=1;
old 7: 'CREATE USER &RMAdminID IDENTIFIED BY "&RMAdminPwd" DEFAULT TABLESPACE &DfltTblSpc TEMPORARY TABLESPACE &TempTblSpc';
new 7: 'CREATE USER rmadmin IDENTIFIED BY "password" DEFAULT TABLESPACE O
BJPARTS TEMPORARY TABLESPACE TEMP';
PL/SQL procedure successfully completed.
old 1: alter user &RMAdminID default role NONE
new 1: alter user rmadmin default role NONE
User altered.
old 3: to &RMAdminID
new 3: to rmadmin
Grant succeeded.
old 2: to &RMAdminID
new 2: to rmadmin
Grant succeeded.

7.2.2.7 Prepare cmconfig.xml file for Extended Upgrade

1. Back up cmconfig.xml file in C:\IBM\cmrepository\8.5.00.000\cmcfgmgr
2. Modify the cmconfig.xml file like:

```
<?xml version="1.0"?>
<cfgmgr>
    <global>
        <property name="RXA_CONNECT_TIMEOUT" value="-1"></property>
        <property name="RXA_RUN_INTERNAL_TIMEOUT_WIN"
        value="-1"></property>
        <property name="RXA_RUN_INTERNAL_TIMEOUT_UNIX"
        value="20000"></property>
        <property name="CFG_STATUS_CHECK_INTERVAL"
        value="5000"></property>
    </global>
<pages>
```

```
<!-- At last page of Configuration Manager update the following parameters of
lsrte, CM, rmdb model -->
        <page pageId="com.ibm.cm.cfg.wizards.StartConfigPage">
            <model name="lsrte">
                <property name="nextFileOperation.needToDo" value="true"
                aspect="before"></property>
        <!-- Set configuration type of lsrte to 'upgrade'-->
                <property name="nextConfigOperation.type" value="upgrade"
                aspect="before"></property>
            </model>
            <model name="rmdb" inst="rmdb">
                <property name="nextFileOperation.needToDo" value="true"
                aspect="before"></property>
        <!-- Set configuration type of rmdb to 'upgrade'-->
                <property name="nextConfigOperation.type" value="upgrade"
                aspect="before"></property>
            </model>
            <model name="cm">
        <!-- Set configuration type of cm model to 'upgrade'-->
                <property name="nextFileOperation.type" value="upgrade"
                aspect="before"></property>
        <!-- Set configuration type of cm model to 'upgrade'-->
                <property name="nextConfigOperation.type" value="upgrade"
                aspect="before"></property>
                <property name="actionType" value="UPGRADE_ADD"
                aspect="before"></property>
            </model>
        </page>
    </pages>
</cfgmgr>
```

7.2.3 Moving data from the source system to the target system

7.2.3.1 Stop all Content Manager EE system services on the source server

The steps are similar to 7.1.3.1 Stop all Content Manager EE system services, which can be referred to.

7.2.3.2 Export library server and resource manager database tables on source

Enter the following command to export the library server tables in user mode. The user name is icmadmin, and the dmp file name is icmadmin.dmp:

```
C:\data>exp icmadmin/password owner=icmadmin rows=y indexes=y compress=n
buffer=65536 feedback=100000 file=icmadmin.dmp log=icmadmin.log
```

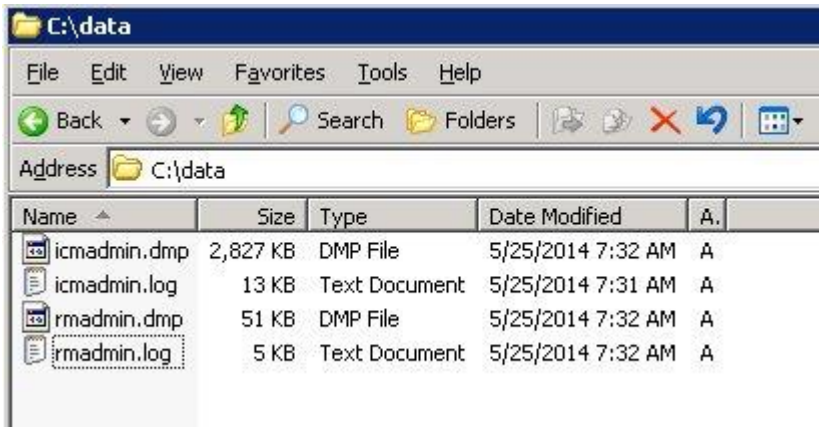
Export results:

```
Export terminated successfully with warnings.
```

Enter the following command to export the resource manager database tables in user mode. The user name is rmadmin, and the dmp file name is rmadmin.dmp:
C:\data>exp rmadmin/password owner=rmadmin rows=y indexes=y compress=n buffer=65536 feedback=100000 file=rmadmin.dmp log=rmadmin.log

Export results:
Export terminated successfully with warnings.

Fig 7-10 Database Export Output



7.2.3.3 Transfer the data files from source to target

1. Transfer the icmadmin.dmp and rmadmin.dmp files from the source server's C:\data directory into the target server's C:\data directory.
2. Transfer file system volume C_nolabel data from the source server's C:\lbosdata directory to the target server's C:\lbosdata directory. The data transfer type is binary.

7.2.3.4 Import library server and resource manager database tables on target

Enter the following command to import the library server tables in user mode. The user name is icmadmin, and the dmp file name is icmadmin.dmp:
C:\data>imp icmadmin/password fromuser=icmadmin touser=icmadmin rows=y indexes=y commit=y buffer=65536 feedback=100000 ignore=n file=c:\data\icmadmin.dmp log=icmadminimp.log

Export results:
Import terminated successfully with warnings.

Enter the following command to import the resource manager database tables in user mode. The user name is rmadmin, and the dmp file name is rmadmin.dmp:

```
C:\data> imp rmadmin/password fromuser=rmadmin touser=rmadmin rows=y indexes=y commit=y buffer=65536 feedback=100000 ignore=n file=c:\data\rmadmin.dmp log=rmadminimp.log
```

Import results:

```
Import terminated successfully with warnings.
```

7.2.4 Upgrading Content Manager EE V8.5 on the target system

7.2.4.1 Create the ICMPORSP library

Enter the following command from the PL/SQL command line as the Oracle administrative user:

```
SQL>create or replace library icmporsp as 'C:\IBM\db2cmv8\lib\icmporsp.dll';
SQL>/
```

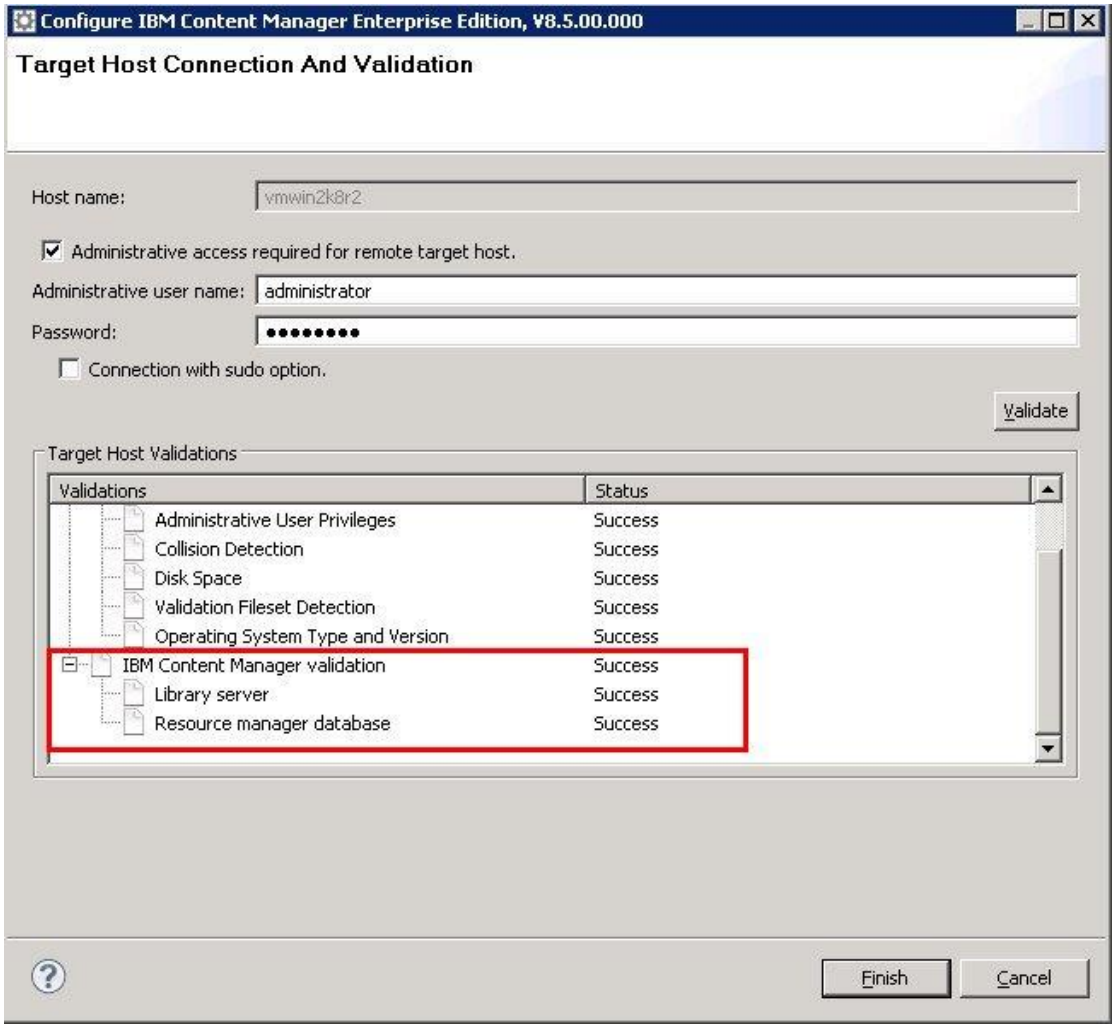
7.2.4.2 Upgrading library server and resource manager database to IBM Content Manager EE V8.5

1. Start **cmcfgmgr_CM.bat** in Content Manager EE 8.5.00.000 repository

Make sure that the configuration manager is restarted after 7.2.2.7 Prepare cmconfig.xml file for Extended Upgrade: Step 2.

2. Add the **vmwin2k8r2** as target host and validate it

Fig 7-11 validate target host vmwin2k8r2



Make sure the components library server and resource manager database are detected and their status is success.

3. Press **Finish** to get configuration wizard
4. Respond to the wizard screen prompts as 7.2.2.5 Configuring Content Manager EE V8.5 library server and resource manager database on the target machine: Step 4.

Notes: When the configuration wizard prompts **Confirm Features Reinstall** as Fig 6-1, must to press **No.**

5. Get the same result as 7.2.2.5 Configuring Content Manager EE V8.5 library server and resource manager database on the target machine: Step 5.
6. Close the configuration manager

7.2.4.3 Configuring other components

1. Restore cmcmonfig.xml on Content Manager EE V8.5 configuration repository
2. Restore the original cmcmonfig.xml file, which is backed up in 7.2.2.7 Prepare cmconfig.xml file for Extended Upgrade: Step 1. Start cmcfgmgr_CM.bat in Content Manager EE 8.5.00.000 repository

Make sure that the configuration manager is restarted after Step 1.

3. Add the vmwin2k8r2 as target host and validate it

Get the same result as 7.2.4.2 Upgrading library server and resource manager database to IBM Content Managers EE V8.5: Step 2.

4. Press **Finish** to get configuration wizard
5. Respond to the wizard screen prompts as seen in table 7-15:

Table 7-14 Configure other components

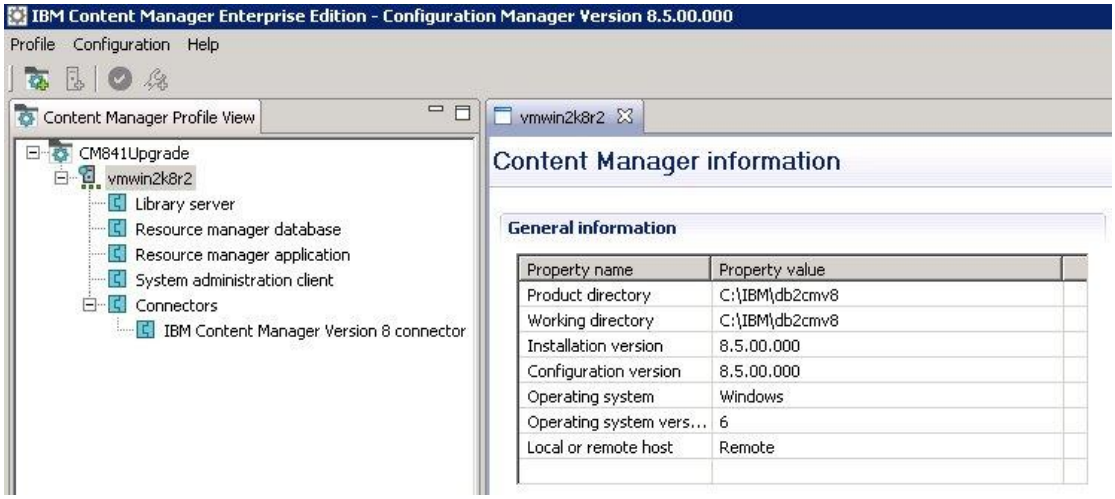
Screen	Action
IBM Content Manager EE V8.5.00.000 Configuration Wizard	Click **Next**
Install Destination	Click **Next**
Product Components	Select: **Resource manager application** **System administration client** Connectors: **IBM Content Manager Version 8 connector**
	De-select: **Copy selected component to the product directory on the target machine, but do not configure**
	Click **Next**
License Type	Click **Next**
Database Product Directory	Oracle product directory: **C:\oralce\product\11.2.0\dbhome_1**
	Click **Next**
Resource manager application server	Application server home directory: **C:\Program Files (x86)\ibm\WebSphere\AppServer** Application profile home directory: **C:\Program Files (x86)\ibm\WebSphere\AppServer\profiles\AppSrv01** De-select: **Application server security enable** Resource manager application name: **icmrm** Resource manager application context root: **/icmrm** Select: **specify the JDBC path for the WebSphere application Server variable** WebSphere variable value for

	DB2_UNIVERSAL_JDBC_PATH: **C:\oralce\product\11.2.0\dbhome_1\jdbc\lib**
	Click **Next**
Resource manager application deployment target Tab	Select: **Application Server**
	Application server node name or application server name: Select : **vmwin2k8r2Node01/server1**
HTTP connection information tab	Hostname: **vmwin2k8r2** HTTP port: **9080** HTTPS port: **9443**
	Click **Next**
Resource Manager Application connection to Library Server	Library Server host name: **vmwin2k8r2** Library Server operation system: **Windows** Library server name: **icmnlsdb** Listener port: **1521** Oracle service name: **sharedb.cn.ibm.com** JDBC connection string: j**dbc:oracle:thin:@//vmwin2k8r2:1521/sharedb.cn.ibm.com** Library server administrative user: **icmadmin** Password: **password**
	Click **Next**
Resource Manager Application connection to Resource Manager Database	Resource manager database host name: **vmwin2k8r2** Resource manager operation system: **Windows** Resource manager name: **rmdb** Listener port: **1521** Oracle service name: **sharedb.cn.ibm.com** JDBC connection string: j**dbc:oracle:thin:@//vmwin2k8r2:1521/sharedb.cn.ibm.com** Resource manager database administrative user: **rmadmin** Password: **password**
Resource Manager Application	Resource manager volume mount point: **C:** Resource manager staging directory: **C:\staging**
	Click **Next**
System Administration Client	Select: **Local**
	Click **Next**
System Administration Client Connection	Library server connection name: **icmnlsdb** Library Server host name: **vmwin2k8r2** Library Server operation system: **Windows** Authentication type: **Server**
	Click **Next**
IBM Content Manager Version 8 Connector	Library server name: **icmnlsdb** Library server administrative user: **icmadmin**

	Listener port: **1521** Oracle service name: **sharedb.cn.ibm.com** JDBC connection string: j**dbc:oracle:thin:@//vmwin2k8r2:1521/sharedb.cn.ibm.com** Library server database connection user: **icmconct** Password: **password**
	Click **Next**
Start Configuration	Click **Finish**
Configuration Complete	Click **Done**

6. The configuration result as Fig 7-12 below:

Fig 7-12 other components results



7. Close the configuration manager and restart resource manager application WebSphere application “server1”.

7.2.5 Matching configuration on the new system

The host name is changed between the target and source, so it is necessary to check and update the host name in the library server and resource manager databases.

Connect to the library server database as the Content Manager EE administrator, Then run the following SQL command to check the current hos tname in the library server database.

```
SQL> SELECT INETADDR from ICMADMIN.ICMSTRESOURCEMGR where RMNAME='icmrm';
INETADDR
--------------------------------------------------------------------------------
vmwin2k8r2
```

Connect to the resource manager database as the resource manager administrator. Then, run the following SQL command to check the current host name in the resource manager database.

```
SQL> SELECT SVR_HOSTNAME from RMADMIN.RMSERVER where SVR_SERVERTYPE ='LS';
SVR_HOSTNAME
--------------------------------------------------------------------------------
vmwin2k3-32bit
```

The result does not match the new target system, as expected.

While still connected to the resource manager database as RMADMIN, run the following SQL command to update the resource manager host name value:

```
SQL> UPDATE RMADMIN.RMSERVER SET SVR_HOSTNAME='vmwin2k8r2' where SVR_SERVERTYPE='LS';
1 row updated.
SQL> SELECT SVR_HOSTNAME from RMADMIN.RMSERVER where SVR_SERVERTYPE ='LS';
SVR_HOSTNAME
--------------------------------------------------------------------------------
vmwin2k8r2
```