Installing Telco Analytics Manager

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Preface

In This Section

Using this Manual

Welcome to Installing Telco Analytics Manager.

This manual covers installing and configuring Telco Analytics Manager.

Before You Get Started

You should be familiar with the following:

- Your application architecture
- The CBU
- Designing or working with databases and data warehouses
- SQL

Who Should Read this Manual

This manual is for anybody who needs to install the Telco Service Manager or any of its components.

- Administrators

  You will find information several topics that involve the administration of Telco Analytics Manager. There is information about preparing the environment before installation. After installing, you need to configure some of the components. There is an entire section dedicated to configuring these components.

  You may also want to consult the Configuration File Reference for the comprehensive list of configuration files and their location.

- Developers

  This manual contains information you use to install a development environment to build your solution.

  Although you may not need to configure all of the components which are installed, you must read the section concerning the location of configuration files, the CBU and configuring Notification and the CID2CBU loader.

  The Configuration File Reference is a comprehensive list of configuration files and their location.

- Project Architect

  You can use the information in this manual to determine the components you need to install on which machines. There are other topics covered in this manual, such as Notification, which have an impact on system architectures.

- Project Manager

  You will find information about the installation of the various components that make up the Analytical Application. Once you have an idea of the components you need, you should look closely at the information in the chapter about configuring the components. You need to be familiar with configuring components as you need to take into account for both development and production environments.

How this Manual is Organized

This manual covers the following:

- **Preparing to Install**

  This chapter covers the preparation of your environment before you install and configure an Analytical application.

  It contains information about:

  - Installing and configuring the database

- **Installing Telco Analytics Manager**

  This chapter covers installing an Analytical application.

  It contains information about:

  - Installing
  - Uninstalling

- **Configuring Telco Analytics Manager**

  This chapter covers configuring the Telco Service Manager after installation.

  It contains information about configuring the following:

  - Configuration files and their location
  - Communications Billing and Usage database
  - Environment variables
  - Notification
  - CID2CBU Loader

- **Configuration File Reference**

  This appendix is a configuration file reference. It covers the location and use of configuration files as well as other configuration files used for customization.

  It contains information about the following:

- File name
- Location
- Description

What Typographical Changes and Symbols Mean

This manual uses the following conventions:

TYPEFACE	MEANING	EXAMPLE
Italics	Manuals, topics or other important items	Refer to *Developing Connectors*.
Small Capitals	Software and Component names	Your application uses a database called the CID.
Fixed Width	File names, commands, paths, and on screen commands	Go to `//home/my file`

Finding the Information You Need

edocs Telco Solutions comes with comprehensive documentation that covers all aspects of building TAM solutions. You should always read the release bulletin for late-breaking information.

Getting Started

If you are new to edocs Telco Solutions, you should start by reading *Introducing Telco Analytics Manager*. This manual contains an overview of the various components along with a list of the available features. It introduces various concepts and components you must be familiar with before moving on to more specific documentation. Once you have finished, you can read the manual that covers different aspects of working with the application. At the beginning of each manual, you will find an introductory chapter that covers concepts and tasks.

Designing Your Solution

While reading *Introducing Telco Analytics Manager*, you can begin to envision how the different components can address your solution's needs.

You can refer to *Developing Analytical Applications* for information about customizing the database, synchronizing data with Telco Service Manager (TSM), loading data from external invoice files, and other design issues. The *CBU Reference Guide* also gives you the information about how the information in your solution is managed and stored. You should also read the section on integrating Telco Analytics Manager with Telco Service Manager in *Developing Analytical Applications*.

Installing Your Analytical Application

You should start by reading the Release Bulletin. For detailed installation and configuring information, refer to *Installing Telco Analytics Manager*. This manual covers installing *Telco Analytics Manager* on one or more computers. It also contains the information you need to configure the different components you install.

Building Analytical Solutions

If you are designing and programming analytical applications, you have several different sources of information. If you are programming the user interface of the solution, you should read *Building Reports*. You can also refer to the *QRA API Specification* and the *QRA Configuration File Reference Documentation* for detailed information about the different components you can use to build reports which serve as the user interface. For configuring the various components, refer to *Installing Telco Analytics Manager* and sections in other documents that specifically deal with the component to be configured.

If you are working on the data warehouse side of TAM and are interested in how the information will be loaded into the data warehouse, you should read *Developing Analytical Applications*. For more information about the design and structure of the CBU, you should refer to the *CBU Reference Guide* along with the *CBU Reference* documentation for your database.

Integrating TAM and TSM

If you are involved in configuring your solution to work with Telco Service Manager, you should read *Introducing Telco Analytics Manager* for an overview of the components and how they interact. You should then read *Developing Analytical Applications* for information about synchronizing data between the Telco Analytics Manager and Telco Service Manager. In this manual, you will also find information about loading data in both the CBU and the Telco Service Manager.

Managing Telco Analytics Manager

If you are responsible for managing Telco Analytics Manager, you should read the *Installing Telco Analytics Manager* for information about configuring various components. *Administrating Telco Analytics Manager* covers what you need to know about managing your solution at runtime.

If You Need Help

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- E-mail: support@edocs.com

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- 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.

Contents

CHAPTER 1

Preparing to Install Your Application

In This Section

Installing and Configuring the Database

Configuring a SQL Server Database for the CBU

You need to do the following before installing:

1. Go to Microsoft's Web site.
2. Download and install the Microsoft SQL Server 2000 Driver for JDBC.
3. Create the CID database.
4. Create the following file groups:
   - `USER_DATA`
   - `USER_INDEX`
   - `REQUEST_DATA`
   - `REQUEST_INDEX`
   - `INVOICE_DATA`
   - `INVOICE_INDEX`

Configuring a DB2 Database for the CBU

You need to do the following before installing:

1. Run `sqllib/java12/usejdbc2` to activate the JDBC 2 driver.
2. Create the CID instance.
3. Create the CID database in the CID instance.
4. Create the following system users:
   - `cid_admin`
   - `cid_user`

   In DB2, system user names must be in lowercase, cannot have any underscores, and are limited to 8 characters. However, they are referred to as CID_ADMIN and CID_USER.
5. Add users to the CID database. Do the following:
   1. At the system prompt, enter `db2`.

2. Enter `CONNECT TO <CID database name> USER <user of the DB2 instance that hosts CID database>`
3. Grant the necessary rights to `<CID_ADMIN>` and `<CID_USER>`

Example:

```
CONNECT TO CID USER db2inst1
GRANT CREATETAB, CONNECT, IMPLICIT_SCHEMA ON DATABASE TO USER <CID_ADMIN>
GRANT CONNECT ON DATABASE TO USER <CID_USER>
TERMINATE
```

6 Create the following DMS (Data Managed Space) tablespaces:

- `USER_DATA`
- `USER_INDEX`
- `REQUEST_DATA`
- `REQUEST_INDEX`
- `INVOICE_DATA`
- `INVOICE_INDEX`

These tablespaces require a minimum page size of 16K and a bufferpool of 16K.

7 Grant `CID_ADMIN` full rights to each of the table spaces.

8 Create the following system temporary table spaces:

- `TEMP`

These tablespaces require a minimum page size of 16K and a bufferpool of 16K.

9 Configure DB2 client to use the correct schema:

1. Open the `db2cli.ini` file
2. Add the following:

```
[CID]
CURRENTSCHEMA = CID_ADMIN
```

You must configure all DB2 clients to use the correct schema.

Configuring an Oracle Database for the CBU

You need to do the following before installing:

1 Create the CID instance.

2 Create the following tablespaces:

- USER_DATA
- USER_INDEX
- REQUEST_DATA
- REQUEST_INDEX
- INVOICE_DATA
- INVOICE_INDEX
- RBS (rollback)
- TEMP (type: TEMPORARY)

The recommended configuration is one physical disk for each table space. However, if your environment cannot have such a configuration, you should try to host a DATA tablespace on one physical disk and its corresponding INDEX tablespace on another.

3 Enable function based indexes:

1. Open the init.ora file.
2. Set the following parameters:

   QUERY_REWRITE_INTEGRITY=TRUSTED

   QUERY_REWRITE_ENABLED=TRUE

For more information about tuning and enhancing the performance of your Oracle database, refer to *Oracle - Designing and Tuning For Performance*.

CHAPTER 2

Installing Telco Analytics Manager

In This Section

About Installing

Customer Analysis comes with an easy-to-use installer to install its files. Once you are finished installing Customer Analysis, you need to configure various components.

Once you begin, you must complete the entire process of installing and configuring Customer Analysis. If you do not, you may experience problems with your installed version of Telco Analytics Manager.

To install Customer Analysis

1. Run the installer application on the TAM CD-ROM for your platform. The TAM Installer appears.
   - AIX: *tam_aix.bin*
   - HPUX: *tam_hpux.bin*
   - Solaris: *tam_solaris.bin*
   - Windows: *tam_windows.exe*
2. Click *Next*. The License Agreement window appears.
3. Read and accept the license agreement then click *Next*. The Location window appears.
4. Enter the home directory then click *Next*. The Installation Type window appears.
5. Choose one of the following then click *Next:*
   - **Customer Analysis Warehouse** to install Customer Analysis and all of its components
   - **Custom installation** to select the components to install
6. Follow the on screen instructions to define the following directory and port information:
   - Application Root Directory
   - Web Root Directory
   - Var Directory
   - Customer Dimensions Loader Administration Port Number
   - CID to CBU Loader Administration Port Number
7. Select the Database Type to use and click *Next*:
   - Oracle
   - IBM DB2
   - Microsoft SQL Server
8. Specify the location of the Database Client Home Directory and click *Next*.

9 Enter the Customer Interaction Datastore connection parameter information and click *Next*.

10 Enter the Communications Billing and Usage database connection parameter information and click *Next*.

11 The installer displays the Pre-Install Summary Screen. Confirm the settings you have chosen and click *Install*.

12 When finished, the installer displays a message.

About Uninstalling

Telco Analytics Manager does not come with an uninstaller because most of the files of your solution are customized files. Therefore, an automatic uninstaller is not the most convenient and practical way of uninstalling.

We recommend not uninstalling Customer Analysis as this module shares resources with Telco Service Manager. If you do remove Customer Analysis, you may encounter problems with Telco Service Manager.

To uninstall Customer Analysis

1. Locate the home directory.
2. Make a backup copy of all customized files.
3. Delete the directory.

CHAPTER 3

Configuring Telco Analytics Manager

In This Section

About Configuring

Once you have installed Customer Analysis, you need to install the CBU database. Once you have finished installing, you need to configure your application server by creating a dedicated datasource.

You also configure the components that manage the synchronization of CID and CBU data. By default, notification events are not generated when objects change. You need to configure the BLM to generate these notification events. You also need to configure the CID2CBU loader database connections to the CBU.

Configuring Customer Analysis involves:

- Configuring the CBU database
- Configuring a datasource
- Configuring notification
- Configuring the CID2CBU loader

Installing the CBU

Installing the CBU for Oracle

Installing and configuring the CBU database for Oracle involves:

- Creating Instances
- Creating Tablespaces
- Creating CBU users
- Creating the CBU database

You use the cbuAdminTool to create the CBU users and database. This administration tool is located in `<home_dir>/bin`.

Creating Instances

Use the values in the table below when creating CBU instances:

ORACLE PARAMETERS	VALUE
`optimizer_mode`	CHOOSE
`SGA`	Max memory / 2
`sort_area_size`	Between 256K and 4 MB
`block size`	8K
`query_rewrite_enabled`	TRUE
`star_transformation_enabled`	TRUE

Creating Tablespaces

One of the most important parts of installing and configuring the CBU is allocating enough space for the different tablespaces. The sizes depend on your application and the type of information you load into the CBU. In order to give you an idea of the space you need, we give you a sample of information that a CBU may be required to manage. For the data in the sample, the tablespaces are listed with recommended sizing information.

The CBU contains the following tablespaces:

TABLESPACE NAME	DESCRIPTION
NMY_CBU_REF_DATA	Tablespace dedicated to the reference tables
NMY_CBU_REF_INDX	Tablespace dedicated to the indexes on reference tables

TABLESPACE NAME	DESCRIPTION
NMY_CBU_USER_DATA	Tablespace dedicated to the user tables (data which come in the CID)
NMY_CBU_USER_INDX	Tablespace dedicated to the indexes on user tables
NMY_CBU_USAGE_DATA	Tablespace dedicated to the usage table
NMY_CBU_USAGE_INDX	Tablespace dedicated to the indexes on usage table
NMY_CBU_INVC_DATA	Tablespace dedicated to the invoice tables
NMY_CBU_INVC_INDX	Tablespace dedicated to the indexes on invoice tables
NMY_CBU_TEMP	Tablespace used as temporary space by the users which query the database

These tablespaces require a minimum page size of 16K and a bufferpool of 16K.

This information is used to determine the sizing recommendations.

SIZING PARAMETER	CODE	SAMPLE
Number of contracts	C	20 000
Number of BUDR/Bill Period per contract	BBP	100
Number of Bill Periods	BP	3

In this sizing recommendation, we assume that there is one billing account per contract.

The following table presents the recommended sizing formula per tablespace and sample values.

TABLESPACE	SIZING FORMULA	AVERAGE UNIT SIZE	SAMPLE
NMY_CBU_REF_DATA	static size	10M	10M
NMY_CBU_REF_INDX	static size	10M	10M
NMY_CBU_USER_DATA	C	5K	100M
NMY_CBU_USAGE_DATA	C * BBP * BP	150 Bytes	~1G
NMY_CBU_INVC_DATA	C * BP	400 Bytes	24M

For index tablespaces, you should use the same sizing recommendations as the corresponding data tablespaces.

The size of the temp tablespace depends on the number of concurrent users and the queries.

Creating CBU Users and Roles

The CBU needs the following users to run properly:

- **CBU_ADM** The Administrator to create the CBU tables, constraints, and to give the access permissions to the CBU user.
- **CBU_USR** Application user to connect the CID2CBU loader and reporting tool to the CBU database at runtime.

To create the CBU users and their associated roles, you use the CBU administration tool.

To create the CBU user and roles

1. Go to `<home_dir>/bin`.
2. Run the CBU Administration tool. Use the syntax:

```
cbuAdminTool create_cbu_users <CBU> <DBA login> <DBA password>
<CBU_ADMIN login> <CBU_ADMIN password> <CBU_USER login>
<CBU_USER password>
```

where <CBU>:

- Oracle: <instance alias>
- SQL Server: <database host> [:<port>];DatabaseName=<database name>

  If no port is specified, the tool uses the default SQL server port

  Examples: "localhost;DatabaseName=CID", "server.enterprise:2000;DatabaseName=CBU"

For DB2, the CBU users are system users and cannot be created using this tool. For more information about users and DB2, refer to *Installing the CBU for DB2.*

Creating the CBU Database

To create the CBU users and their associated roles, you use the CBU administration tool. The CBU administration comes with the following creation commands:

- install_cbu This command installs the CBU.
- create_cbu_structure This command creates the CBU structure for the sample toolkit.

If you want to install the CBU demo, refer to the sample toolkit's readme.html file for more information on installing and using the CBU demo. This file is located in <home_dir>/samples/cbu/demo_kit.

To create the CBU Database

1. Go to <home_dir>/bin.
2. Run the CBU Administration tool. Use the syntax:

   ```
   cbuAdminTool install_cbu <CBU instance alias> <CBU_ADMIN
   login> <CBU_ADMIN password> <CBU_USER login> <CBU_USER
   password>
   ```

   When finished, the CBU Administration tool displays a message.

To create the demo CBU Database

1. Go to <home_dir>/bin.

2 Run the CBU Administration tool. Use the syntax:

```
cbuAdminTool create_cbu_structure <CBU instance alias>
<CBU_ADMIN login> <CBU_ADMIN password>
```

When finished, the CBU Administration tool displays a message.

Installing the CBU for DB2

Installing and configuring the CBU database for DB2 involves:

- Activating the JDBC Driver
- Creating CBU users
- Creating Tablespaces
- Specifying the schema
- Creating the CBU database

You use the cbuAdminTool to create the CBU database. This administration tool is located in `<home_dir>/bin`.

Activating the JDBC Driver

1 Run `sqllib/java12/usejdbc2` to activate the JDBC 2 driver.

Creating CBU Users

1 Create the CBU instance.

2 Create the CBU database in the CBU instance.

3 Create the following system users:

- `CBU_ADMIN`
- `CBU_USER`

4 Add users to the CBU database. Do the following:

1. At the system prompt, enter `db2`.
2. Enter `CONNECT TO <CBU database name> USER <user of the DB2 instance that hosts CBU database>`
3. Grant the necessary rights to `<CBU_ADMIN>` and `<CBU_USER>`

Example:

```
CONNECT TO CBU USER db2inst1

GRANT CREATETAB, CONNECT, IMPLICIT_SCHEMA ON DATABASE TO USER <CBU_ADMIN>

GRANT CONNECT ON DATABASE TO USER <CBU_USER>

TERMINATE
```

Creating Tablespaces

One of the most important parts of installing and configuring the CBU is allocating enough space for the different tablespaces. The sizes depend on your application and the type of information you load into the CBU. In order to give you an idea of the space you need, we give you a sample of information that a CBU may be required to manage. For the data in the sample, the tablespaces are listed with recommended sizing information.

The CBU contains the following tablespaces:

TABLESPACE NAME	DESCRIPTION
NMY_CBU_REF_DATA	Tablespace dedicated to the reference tables
NMY_CBU_REF_INDX	Tablespace dedicated to the indexes on reference tables

TABLESPACE NAME	DESCRIPTION
NMY_CBU_USER_DATA	Tablespace dedicated to the user tables (data which come in the CID)
NMY_CBU_USER_INDX	Tablespace dedicated to the indexes on user tables
NMY_CBU_USAGE_DATA	Tablespace dedicated to the usage table
NMY_CBU_USAGE_INDX	Tablespace dedicated to the indexes on usage table
NMY_CBU_INVC_DATA	Tablespace dedicated to the invoice tables
NMY_CBU_INVC_INDX	Tablespace dedicated to the indexes on invoice tables
NMY_CBU_TEMP	Tablespace used as temporary space by the users which query the database

These tablespaces require a minimum page size of 16K and a bufferpool of 16K.

This information is used to determine the sizing recommendations.

SIZING PARAMETER	CODE	SAMPLE
Number of contracts	C	20 000
Number of BUDR/Bill Period per contract	BBP	100
Number of Bill Periods	BP	3

In this sizing recommendation, we assume that there is one billing account per contract.

The following table presents the recommended sizing formula per tablespace and sample values.

TABLESPACE	SIZING FORMULA	AVERAGE UNIT SIZE	SAMPLE
NMY_CBU_REF_DATA	static size	10M	10M
NMY_CBU_REF_INDX	static size	10M	10M
NMY_CBU_USER_DATA	C	5K	100M
NMY_CBU_USAGE_DATA	C * BBP * BP	150 Bytes	~1G
NMY_CBU_INVC_DATA	C * BP	400 Bytes	24M

For index tablespaces, you should use the same sizing recommendations as the corresponding data tablespaces.

The size of the temp tablespace depends on the number of concurrent users and the queries.

Specifying the Schema

Configure DB2 client to use the correct schema:

1. Open the `db2cli.ini` file
2. Add the following:

```
[CBU]
CURRENTSCHEMA = CBU_ADMIN
```

You must configure all DB2 clients to use the correct schema.

Creating the CBU Database

To create the CBU users and their associated roles, you use the CBU administration tool. The CBU administration comes with the following creation commands:

- `install_cbu` This command installs the CBU.
- `create_cbu_structure` This command creates the CBU structure for the sample toolkit.

If you want to install the CBU demo, refer to the sample toolkit's `readme.html` file for more information on installing and using the CBU demo. This file is located in `<home_dir>/samples/cbu/demo_kit`.

To create the CBU Database

1. Go to `<home_dir>/bin`.
2. Run the CBU Administration tool. Use the syntax:

   ```
   cbuAdminTool install_cbu <CBU instance alias> <CBU_ADMIN login> <CBU_ADMIN password> <CBU_USER login> <CBU_USER password>
   ```

   When finished, the CBU Administration tool displays a message.

To create the demo CBU Database

1. Go to `<home_dir>/bin`.
2. Run the CBU Administration tool. Use the syntax:

   ```
   cbuAdminTool create_cbu_structure <CBU instance alias> <DBA login> <DBA password> <CBU_ADMIN login> <CBU_ADMIN password> <CBU_USER login> <CBU_USER password>
   ```

   When finished, the CBU Administration tool displays a message.

Installing the CBU on SQL Server

Installing and configuring the CBU database for SQL Server involves:

- Creating File Groups
- Creating CBU users and roles
- Creating the CBU database

You use the cbuAdminTool to create the CBU users and database. This administration tool is located in `<home_dir>/bin`.

Creating File Groups

One of the most important parts of installing and configuring the CBU is allocating enough space for the different tablespaces. The sizes depend on your application and the type of information you load into the CBU. In order to give you an idea of the space you need, we give you a sample of information that a CBU may be required to manage. For the data in the sample, the tablespaces are listed with recommended sizing information.

The CBU contains the following tablespaces:

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NMY_CBU_USER_INDX	Tablespace dedicated to the indexes on user tables
NMY_CBU_USAGE_DATA	Tablespace dedicated to the usage table
NMY_CBU_USAGE_INDX	Tablespace dedicated to the indexes on usage table
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NMY_CBU_INVC_INDX	Tablespace dedicated to the indexes on invoice tables
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To create the CBU users and their associated roles, you use the CBU administration tool.

To create the CBU user and roles

1. Go to `<home_dir>/bin`.
2. Run the CBU Administration tool. Use the syntax:

```
cbuAdminTool create_cbu_users <CBU> <DBA login> <DBA password>
<CBU_ADMIN login> <CBU_ADMIN password> <CBU_USER login>
<CBU_USER password>
```

where `<CBU>`:

- Oracle: `<instance alias>`
- SQL Server: `<database host> [:<port>];DatabaseName=<database name>`

  If no port is specified, the tool uses the default SQL server port

  Examples: "`localhost;DatabaseName=CID`", "`server.enterprise:2000;DatabaseName=CBU`"

For DB2, the CBU users are system users and cannot be created using this tool. For more information about users and DB2, refer to *Installing the CBU for DB2.*

Creating the CBU Database

To create the CBU users and their associated roles, you use the CBU administration tool. The CBU administration comes with the following creation commands:

- `install_cbu` This command installs the CBU.
- `create_cbu_structure` This command creates the CBU structure for the sample toolkit.

If you want to install the CBU demo, refer to the sample toolkit's `readme.html` file for more information on installing and using the CBU demo. This file is located in `<home_dir>/samples/cbu/demo_kit`.

To create the CBU Database

1. Go to `<home_dir>/bin`.
2. Run the CBU Administration tool. Use the syntax:

   ```
   cbuAdminTool install_cbu <CBU database host> [:<port>]>
   <CBU_ADMIN login> <CBU_ADMIN password> <CBU_USER login>
   <CBU_USER password>
   ```

   If no port is specified, the tool uses the default SQL server port

   When finished, the CBU Administration tool displays a message.

To create the demo CBU Database

1. Go to <home_dir>/bin.
2. Run the CBU Administration tool. Use the syntax:

   ```
   CbuAdminTool create_cbu_structure <CBU database host>
   [:<port>]> <CBU_ADMIN login> <CBU_ADMIN password> <CBU_USER
   login> <CBU_USER password>
   ```

   If no port is specified, the tool uses the default SQL server port

   When finished, the CBU Administration tool displays a message.

Configuring Your Environment

Oracle 9i Application Server

To create a data source

1. Start the Oracle 9i Application Server Administration Server.
2. Open the Web Oracle 9i Application Server Administration Console.
3. Under *Applications*, select the application to create a data source for.
4. Under *Administration* > *Application Defaults*, click *Data Sources*. The *Data Sources* page appears showing the available data sources for this application.
5. Click *Create Data Source*. The *Create Data Source* page appears.
6. Under *General*, enter the following:

FIELD	VALUE
Name	cbuDatasource
Description	A description of the data source
Data Source Class	com.evermind.sql.DriverManagerDataSource
Schema	leave blank
Username	your CBU user name
Password	associated password
JDBC URL	refer to your application server's documentation
JDBC Driver	refer to your application server's documentation

7. Under *JNDI Locations*, enter the following:

FIELD	VALUE
Location	`jdbc/cbuDatasource`
Transactional (XA) Location	`jdbc/XA/cbuDatasource`
EJB Location	`jdbc/ejb/cbuDatasource`

8. Click *Create*. The confirmation page appears.
9. Click *Yes* to restart the instance. You must restart the instance to take into account your changes.

WebLogic

For WebLogic 6.x and 7.x

Depending on your application server and environment, you may have to carry out certain tasks before you can deploy your channel.

For this application server, preparing your environment involves:

- Creating the connection pool
- Creating the data source

To create a data source

1. Start the Weblogic Server.
2. Open the Weblogic Server Console.
3. Under *JDBC*, click *Data Sources*. The JDBC Data Sources page appears.
4. Click *Configure a new JDBC Data Source*. The Configure JDBC Data Sources page appears.
5. On the *Configuration* tab, enter the following:

FIELD	VALUE
Name	`cbuDatasource`
JNDI Name	`jdbc/cbuDatasource`

6. Click *Create*. The data source appears on the top of the page.
7. Click the home icon to return to the console home page.

   Your WebLogic Server now has a declared data source corresponding to the CBU.

WebSphere

For WebSphere 4.x

To create a data source

1. Start the WebSphere Administration Server.
2. Start the Administration Console.
3. Choose *Console>Wizards>Create Data Source*. The wizard opens.
4. Enter the following information:

   Name: `cbuDatasource`

   Database name: your database name
5. Choose *Next.*

6 Choose *Create a new JDBC Driver.*

7 Enter the following information:

- *Name:* `cbuDatasource`
- *Implementation class*

For the name of your implementation class, refer to your application server documentation.

8 Choose *Finish*.

9 Go to the *Resources>JDBC Providers>cbuDatasource/Data Sources* node on the console tree.

10 On the *General* tab, enter the following:

- *User ID:* your CBU user name
- *Password*: the associated password

Configuring Notification

You can configure your Telco Service Manager to to manage notifications to synchronize data in the CBU.

When a notification event occurs, a notification is placed in the notification queue. As the notifications in the queue may involve the same type of change to an organization, you can specify if you want more than one notification for an action. For instance, for some changes you may only want to take into account only the last modification. If a user changes their contact information four times in a single day, you only need to take into account the last notification in order to synchronize the data in the CBU. However, if a user creates two new contracts, you can configure the synchronization to take both changes into account.

Configuring notifications involves:

- Activating notification
- Activating the `is_repeatable` flag
- Specifying the notification class that handles synchronization

1. Go to `<home_dir>/classes/nmycfg/blm`.
2. Open the `config.xml` configuration file.
3. Locate the `enabled` attribute of the `<BusinessLogic name="notification">` tag.
4. Change the values of this attribute to `true`.
5. Save your changes.

To set the is_repeatable flag

1. Use your database tool to connect to the CID.
2. In the `NOTIFICATION_OBJECT_TYPE` table, find the record containing the notification you want to change. Use the tables below to help with the default values:

NOTIFICATION_TYPE_ID	DESCRIPTION
1	Create notification
2	Modify notification
3	Remove notification
4	Update notification

OBJECT_TYPE_ID	DESCRIPTION
1	Level
3	Member
4	Contract

OBJECT_TYPE_ID	DESCRIPTION
8	Billing account
10	User
17	Organization view

3. Enter 1 in the `IS_REPEATABLE` column.
4. Save your changes.

Configuring the CID2CBU Loader

The CID2CBU loader acts as a polling process that extracts notifications from the CID and updates the CBU database.

Configuring the CID2CBU loader involves:

- Setting the CID2CBU properties
- Optimizing the CID2CBU properties when required
- Setting the CID2CBU database connection properties

Setting the CID2CBU Loader Properties

You can define several CID2CBU loaders.

The CID2CBU loader uses the `cid2cbuloader.properties` configuration file to set its properties. This file is located in `<home_dir>/config/cid2cbuloader`.

For each CID2CBU loader, you configure a `cid2cbuloader.properties` configuration file.

You can configure the following:

- The user name and password to authenticate the CID2CBU loader to the BLM
- The BLM connection retry mechanism
- The CBU Database connection retry mechanism
- The number of notifications to extract from the notification queue
- The stability delay of a notification before extracting it
- The list of notification types-object types to extract
- The average number of notifications selected still to treat (Queue threshold) for one thread before selecting new ones.
- The sleep time between two executions of the notification selection when the first one returns nothing to treat.
- The sleep time between two verifications of the Queue threshold before selecting new notifications
- The running mode of the CID2CBU loader (one shot or not)
- The number of threads to allocate to process notifications
- The configuration directory path
- The administration port

To configure the CID2CBU loader

1 Go to `<home_dir>/config/cid2cbuloader`.

2 Open `cid2cbuloader.properties`.

3 Enter the following:

PARAMETER	DESCRIPTION
CONFIG_DIR	Full path of the directory containing the cid2cbuloader.properties configuration file
ADM_PORT	Port number you use to administer the CID2CBU loader (this parameter is set by the installer)
NAPPING_TIME	Milliseconds between two executions of the notification selection when the first one returns nothing to process
LOOPING_TIME	Milliseconds between two verifications of the queue threshold before selecting new notifications
Q_THRESHOLD	Average number of notifications selected still to process for one thread before selecting new notifications
BLM_USER	User login to authenticate the CID2CBU loader for the BLM
BLM_PASSWORD	Associated password
BLM_RECONNECT_RETRIES	Number of times the CID2CBU loader tries to reconnect to the BLM
BLM_RECONNECT_DELAY	Milliseconds between two BLM connection retries
CBU_RECONNECT_RETRIES	Number of times the CID2CBU loader tries to reconnect to the CBU
CBU_RECONNECT_DELAY	Milliseconds between two CBU connection retries
NB_NOTIFICATIONS	Number of notifications to extract from the notification queue
NOTIFICATION_STABILITY_DELAY	Milliseconds between a notification creation date-time and current date time to extract it.
NB_THREADS	Number of threads allocated to process notifications
ONE_SHOT	TRUE for one shot mode. This mode is usually for loading an empty CBU. FALSE for agent mode
NOTIFICATION_FILTER	TRUE to process the notification type-object type couple. FALSE to ignore Example: `{"CREATE",MEMBER,true}, {"MODIFY",MEMBER,false}` The CREATE notification event of a MEMBER is processed by the CID2CBU loader. The MODIFY notification event of a MEMBER is ignored.

4 Save your changes.

Example of cid2cbuloader.properties

CID2CBU Loader parameters	CONFIG_DIR="file:///<home_dir>/config/cid2cbuloader/" ADM_PORT=3004 NAPPING_TIME=1000 LOOPING_TIME=500 NB_THREADS=4
BLM connection parameters	BLM_USER="agent" BLM_PASSWORD="agent" BLM_RECONNECT_DELAY=60000 BLM_RECONNECT_RETRIES=30
CBU connection parameters	CBU_RECONNECT_DELAY=60000 CBU_RECONNECT_RETRIES=30
Queue parameters	Q_THRESHOLD=2 NB_NOTIFICATIONS=1000 NOTIFICATION_STABILITY_DELAY=5000 NOTIFICATION_FILTER=1
Mode	ONE_SHOT=false
Notification filter for notification type-object type couples	NOTIFICATION_FILTER={{"CREATE",ORGANIZATION,true},{"MODIFY",ORGANIZATION,true},{"UPDATE",ORGANIZATION,true}, \ {"CREATE",MEMBER,true},{"MODIFY",MEMBER,true}, \ {"CREATE",CONTRACT,true},{"MODIFY",CONTRACT,true}, {"CREATE",CONTACT,true},{"MODIFY",CONTACT,true}, \ {"CREATE",BILLINGACCOUNT,true},{"MODIFY",BILLINGACCOUNT,true}, \ {"CREATE",LOGIN,true},{"MODIFY",LOGIN,true}, \ {"CREATE",ORGVIEW,true},{"MODIFY",ORGVIEW,true},{"REMOVE",ORGVIEW,true} }

Configuring the CID2CBU Loader Database Connection

You can define the CID2CBU loader database connection parameters. By default, you enter the CID2CBU connection parameters for the CID and CBU during installation. However, you may need to change the connection parameters after installation.

The CID2CBU loader uses the following configuration files:

- `instance_route.properties` configuration file to access the CID.
- `cbu_instance.properties` configuration file to access the CBU.

These files are located in `<home_dir>/config/cid2cbuloader/nmycfg/dal/instances`.

To configure the database connection

1. Go to `<home_dir>/config/cid2cbuloader/nmycfg/cid2cbu`.
2. Do one of the following:

- To change the connection to the CID, open `instance_route.properties`.
- To change the connection to the CBU, open `cbu_instance.properties`

3 Enter the following:

- `DRIVER`: enter the name of the driver to use
- `URL`: enter the location of the database
- `USER`: enter the login
- `PASSWORD`: enter the password

4 Save your changes.

Optimizing the CID2CBU loader

The default CID2CBU loader settings may not correspond exactly to your system architecture and resources. When not optimized for your environment, the CID2CBU loader may not respond to your performance targets for data synchronization.

To optimize the performances of the CID2CBU loader, you have to change the following settings for the Java Virtual Machine (JVM):

- Number of threads
- Allocated memory

By changing these settings, you ensure that the CID2CBU loader is running at optimal performance for your system.

Optimizing the CID2CBU loader involves:

- Determining the system resources available for the CID2CBU loader
- Specifying the number of threads in the `cid2cbuloader.properties` configuration file
- Specifying the allocated memory in the CID2CBU loader administration tool

To optimize the CID2CBU

1 Determine the number of processors dedicated to running the CID2CBU loader. The number of processors is referred to as `N`.

2 Determine the maximum amount of RAM to use per dedicated processor. The maximum available RAM is referred to as `MR`. By definition, `MR =Total RAM/N`, although this may be different for your environment.

3 Specify the number of threads per processor. Do the following:

1. Go to `<home_dir>/config/cid2cbuloader`.
2. Open `cid2cbuloader.properties`.

3. Set the `NB_THREADS` setting to the number of threads the CID2CBU loader uses.

The number of threads should be limited to 1 or 2 per processor.

4 Determine the minimum and maximum memory allocated to the JVM. Use the following formulas to determine the values of the JVM command line arguments:

JVM Arguments:

- `MaxJVMSize = (MR)x(N)`
- `MinJVMSize = MaxJVMSize`

If the `MaxJVMSize` is greater than the maximum allowed memory for a process, you can run more than one instance of the CID2CBU loader. The maximum amount depends on your system. For instance, the maximum available RAM for Solaris 8 is 4GB. If you run more than one CID2CBU loader, you need to install it and specify a different administration port and configure it by following these instructions.

If the minimum amount of RAM is not equal to the maximum, enter the minimum amount of guaranteed RAM. By entering the amount of guaranteed RAM, you can prevent problems when the process or system are restarted.

New Object Size Arguments:

- `MaxNewSize=MaxJVMSize/3`
- `NewSize=MaxJVMSize/3`

5 Enter the JVM command line arguments to the CID2CBU loader administration tool. Do the following:

1. Go to `<home_dir>/bin`.
2. Open the `cid2cbuloader` file.
3. Change the following Java command line arguments:

DEFAULT	NEW
-ms64m	-XmsMaxJVMSizem
-mx128m	-XmxMinJVMSizem

4. Add the following Java command line arguments:

   `-XX:MaxNewSize=MaxNewObjectSizem`

   `-XX:NewSize=MaxNewObjectSizem`

Your command line should look like this:

```
$NMY_JAVA_HOME/bin/java -XmsMaxJVMSizem -XmxMinJVMSizem -
XX:MaxNewSize=MaxNewObjectSizem -XX:NewSize=MaxNewObjectSizem
...
```

APPENDIX A

Configuration File Reference

In This Section

About the Configuration Files

You use several different configuration and customization files to set up and modify your Account Management Application's behavior.

The files are divided into the following categories:

CATEGORY	DESCRIPTION
Configuration	These files contain the default configuration. You can modify the information in these files to modify the default configuration to meet your deployment needs. Some of the configuration files also contain information that you enter during installation.
Customization	These files contain settings that you change to customize your Account Management Application. You can modify the information in these files to modify the default configuration to meet your specific application needs. Some of these files may be empty or contain sample information.

Install Files

FILE NAME	LOCATION	DESCRIPTION
cbu_tools.properties	lib/admin/cbu	Sets the properties of the cbuAdminTool
instance_route.properties	channels/WEB-INF/classes/nmycfg/dal/instances config/approvalsequencer/nmycfg/dal/instances config/cid2cbuloader/nmycfg/dal/instances config/notifyorg/nmycfg/dal/instances config/synchronizers/synchronizer/nmycfg/dal/instances	Sets the properties of the DAL data access
instance_route_cbu.properties	config/cid2cbuloader/nmycfg/dal/instances	Sets the properties of the CID2CBU loader data access

Configuration Files

FILE NAME	LOCATION	DESCRIPTION
cbu_adapter.properties	config/cid2cbuloader/nmycfg/cid2cbu	Specifies the BLM mapper properties
cid2cbuloader.properties	config/cid2cbuloader	Specifies the properties of CID2CBU loader
cid_tools.properties	lib/admin/cid	Specifies the properties of the cidAdminTool
config.xml	classes/nmycfg/blm channels/WEB-INF/classes/nmycfg/blm	Specifies the display of rate plans
core_english.properties	classes/nmycfg/errors channels/WEB-INF/classes/nmycfg/errors	Specifies the messages of BLM error in English
core_french.properties	classes/nmycfg/errors channels/WEB-INF/classes/nmycfg/errors	Specifies the messages of BLM error in French
functionlist.xml	classes/nmycfg/dal channels/WEB-INF/classes/nmycfg/dal	Specifies the security settings and encoding of the Database connection
instance_route.properties	channels/WEB-INF/classes/nmycfg/dal/instances config/approvalsequencer/nmycfg/dal/instances config/cid2cbuloader/nmycfg/dal/instances config/notifyorg/nmycfg/dal/instances config/synchronizers/synchronizer/nmycfg/dal/instances	Specifies the properties of the database connection
jfnApplication.properties	channels/WEB-INF/classes/nmycfg/jfn	Specifies the media used by the JFN
jsp_parameters.xml	classes/nmycfg/util/formatter channels/WEB-INF/classes/nmycfg/util/formatter	Specifies the time, date and decimal format for the JSPs
LDAP.xml	classes/nmycfg/dal channels/WEB-INF/classes/nmycfg/dal	Specifies the LDAP configuration
logger.properties log4j.properties	classes/nmycfg/util channels/WEB-INF/classes/nmycfg/util config/connectors/connectortemplate/nmycfg/util config/connectors/loopback/nmycfg/uti config/synchronizers/synchronizer/nmycfg/util config/approvalsequencer/nmycfg/util config/cid2cbuloader/nmycfg/util config/notifyorg/nmycfg/util	Specifies the system logger properties
notifyorg.properties	config/notify_org/nmycfg/notifyorg channels/WEB-INF/classes/nmycfg/notifyorg	Specifies the properties of the NOTIFYORG tool
options.properties	config/reportmanager/nmycfg/wfs channels/WEB-INF/classes/nmycfg/wfs	Specifies the properties of the reportmanageradm tool

FILE NAME	LOCATION	DESCRIPTION
policy.properties	classes/nmycfg/blm/util channels/WEB-INF/classes/nmycfg/blm/util	Specifies the properties of BLM objects for reference data reloading
translator.properties	classes/nmycfg/util channels/WEB-INF/classes/nmycfg/util	Specifies the location of the language files

Customization Files

FILE NAME	LOCATION	DESCRIPTION
containers_customization.xml	classes/nmycfg/dal channels/WEB-INF/classes/nmycfg/dal	Specifies the DAL container routing properties
core_containers.xml	classes/nmycfg/dal channels/WEB-INF/classes/nmycfg/dal	Specifies the configuration of access to the DAL
core_queries.xml	classes/nmycfg/dal/instances channels/WEB-INF/classes/nmycfg/dal/instances	Specifies the DAL queries
external_custom.xml	classes/nmycfg/blm channels/WEB-INF/classes/nmycfg/blm	Specifies the BLM external classes and their custom extensions
instances.properties	classes/nmycfg/dal/instances channels/WEB-INF/classes/nmycfg/dal/instances	Specifies the location of the DAL instance connection configuration file
MyWeb.xml	channels/common channels/MyWeb	Specifies the presentation layer application properties, string localizations, and workflows.
objectID_aliases.xml	classes/nmycfg/dal channels/WEB-INF/classes/nmycfg/dal	Specifies the DAL aliases for objects
security.xml	classes/nmycfg/blm channels/WEB-INF/classes/nmycfg/blm	Specifies access rights to BLM functions

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