Migrating Telco Service & Analytics Manager

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Preface

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Using this Manual

Welcome to Migrating Telco Service & Analytics Manager.

This manual covers migrating Telco Service & Analytics Manager version 4.0 to version 4.2.

Who Should Read this Manual

This manual is for administrators, programmers, and other IT professionals who are in charge of migrating to a newer version of Telco Service & Analytics Manager.

How this Manual is Organized

This manual is structured to present the migration task sequence you must follow, and the information you will require for the process. The manual provides you with a general migration path that details the sequence of migration steps you must follow.

In addition to the general migration path, this manual contains a chapter containing the details of migrating. These chapters complete the migration path, providing you with information that is specific to the version you are migrating from.

This manual contains the following chapters:

- **Overview of Migrating Telco Service & Analytics Manager**

  This section introduces the migration process and its goals. It also presents the general migration path. It describes product installation, and the migration of the different components of the Telco Service & Analytics Manager application.

- **Migrating to Telco Service & Analytics Manager 4.2**

  This section deals with migrating to this version of Telco Service & Analytics Manager.

- **CID Physical Model Differences**

  This section describes the database physical model differences.

- **CID Migration Tool User Guide**

  This section presents the CID Migration Tool.

- **Supplementary Migration Documentation**

  This section contains links to documentation topics referred to in the migration manual.

What This Manual Covers

This manual covers migration from Telco Service & Analytics Manager version 4.0 to version 4.2. The goal of this manual is to help you maintain the current functional level of your application when you migrate to Telco Service & Analytics Manager 4.2.

Certain migration tasks take future functional objectives into account, but this manual does not deal with improving features.

What This Manual Does Not Cover

This manual provides migration guidelines only for Telco Service & Analytics Manager. This manual requires you to migrate your application within a fixed deployment environment. This manual does not cover:

- Migrating third-party components such as the database server or the application server
- Changing the deployment configuration during migration steps

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`

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Finding the Information You Need

The product suite comes with comprehensive documentation set that covers all aspects of building solutions based on the edocs Telco Service & Analytics Manager. You should always read the release bulletin for late-breaking information.

Getting Started

If you are new to the edocs Telco Solutions, you should start by reading *Introducing Telco Service & Analytics Manager Applications*. This manual contains an overview of the various components along with the applications and their 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 which covers different aspects of working with the application. At the beginning of each manual, you will find an introductory chapter which covers concepts and tasks.

Designing Your Solution

While reading *Introducing Telco Service & Analytics Manager Applications*, you should think about how the different components can address your solution's needs.

You can refer to *Developing Telco Service Manager (TSM)* for information about extending the object model, application security, and other design issues. The *CID Reference Guide* also gives you the information about how the information in your solution is managed and stored.

You can refer to *Developing Telco Analytics Manager (TAM)* for information about customizing the database, synchronizing data with 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 TAM with TSM in *Developing Telco Analytics Manager (TAM)*.

You can also read the introduction of *Developing Connectors* for information about integrating your solution.

Installing Telco Service & Analytics Manager Applications

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

You might also refer to *Developing Telco Service & Analytics Manager Applications* and *Developing Connectors* as these manuals contain information on customizing applications and working with other software.

If you are upgrading, be sure to read *Migrating Telco Service & Analytics Manager Applications*.

Building Your Solution

If you are designing and programming your solution, you have several different sources of information. If you are programming the user interface of the solution, you should read *Developing User Interfaces*. You also refer to the *BLM Specification* and *JSPF specification* for detailed information about programming the user interface. For configuring the various components, you refer to *Installing Telco Service & Analytics Manager Applications* and sections in other documents which deal with the component to configure.

If you are designing and programming TAM, you have several different sources of information. If you are programming the user interface of the solution, you should read *Developing Reports*. You 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. For configuring the various components, you refer to *Installing Telco Service & Analytics Manager Applications* and sections in other documents which deal with the component to configure.

If you are working with the business logic of your solution, you should read *Developing Telco Service Manager (TSM)*. You can also refer to the *BLM Reference Guide* for more information about the design and structure of the BLM object model. For information about how this information is stored, you should refer to the *CID Reference Guide* along with the *CID Reference* documentation for your database. In order to develop your application, you most likely will need to install and run the Loopback Connector. This component mimics back-end applications for development purposes. For information about installing and running this component, refer to *Using the Loopback Connector*.

If you are working on the data warehouse side of TAM, you should read *Developing Telco Analytics Manager (TAM)*. 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. You should also read *Developing Telco Analytics Manager (TAM)* for information about synchronizing data between the TAM and *Telco Service Manager (TSM)*. In this manual, you will also find information about loading data in both the CBU and the CID.

For more information about integrating your application, you should read *Building Connectors* to learn how Telco Service & Analytics Manager applications work with different software.

Integrating Your Solution

If you are involved in configuring your solution to work with Operation Support Software (OSS), you should read *Building Connectors*. This manual helps you understand the integration architecture and shows you how to build connectors to connect to today's market-leading OSS software. You can also read *Using the Loopback Connector* for information about a connector built for development purposes. Other manuals you can refer to for information about configuring your application include *Introducing Telco Service & Analytics Manager Applications, Developing Telco Analytics Manager (TAM),* and *Developing Telco Service Manager (TSM)*.

Managing Telco Service & Analytics Manager Applications

If you are responsible for managing Telco Service & Analytics Manager applications, you should read the *Installing Telco Service & Analytics Manager Applications* for information about configuring various components and information about working with different application servers. *Administrating Telco Service & Analytics Manager Applications* covers what you need to know about managing your solution at runtime. For information about OSS systems, you should read *Building Connectors*.

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CHAPTER 1

Overview of Migrating Telco Service & Analytics Manager

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About Migrating to this Version

Before you begin migrating your Telco Service & Analytics Manager application, you need to familiarize yourself with the following important topics:

- The migration process
- The migration path for your application
- Important changes in this version

Why You Should Migrate

Migrating to this version has several benefits. First of all, migrating your application allows you to incorporate the new and enhanced features.

We also work very hard to improve the security, performance, and stability of our products. When you migrate to this version, your application also benefits from these improvements.

Migrating is Not An Upgrade

Migrating Telco Service & Analytics Manager requires you to install the latest version in a new location – separate from where any previous version is installed (as if you were installing for the first time).

Once you install the latest version, you then transfer your customization and implementations to the new framework.

What You Migrate

Almost all Telco Service & Analytics Manager components are involved in the process of migrating to the latest release. This is due to the way a Telco Service & Analytics Manager application is built and integrated into existing system architectures.

The impacted product layers include:

- The Presentation Layer
- The CSS Engine (BLM and DAL)
- The CID and data
- The SmartLink (ISF)
- The OSS/BSS connectors
- The CBU loading components

This version of Telco Service & Analytics Manager does not provide all of the transport drivers for integration with OSS systems. These drivers are delivered as separate products.

Migrating Your Customization

You may have implemented some of your application features customizing several product components together.

This manual will help you to drill down into product components for specific feature migration.

Highlights of Product Changes

This section highlights some of the changes between Telco Service & Analytics Manager 4.0 and this version of Telco Service & Analytics Manager. This list is not an exhaustive list of product changes.

You need to be aware of these changes while migrating your Telco Service & Analytics Manager application.

Presentation Logic Studio

Telco Service & Analytics Manager v4.2 main functional enhancement is a tool to design front-end applications, the Presentation Logic Studio.

The Presentation Logic Studio along with the Integration Logic Studio make up Configuration & Deployment Toolkit. The Composer helps ease the design and integration of applications.

Packaging

With this release, features and resources are delivered in two installers:

- Telco Service & Analytics Manager

  This installer now handles all resources to build and deploy your applications.

  There is no separate installer for Customer Billing and Usage database resources, Query, Reporting and Analysis resources and the other parts of the application. They are all handled by Telco Service & Analytics Manager installer.
- Configuration & Deployment Toolkit

  This installer handles the Presentation Logic Studio and Integration Logic Studio tools.

About front-end channels:

- WAP channel is now delivered as a sample. The Telco Service & Analytics Manager installer deploys this channel on your environment but that is not activated by default. The documentation delivered with that sample explains how to activate and use the WAP channel.
- IVR channel is no longer delivered although this technology remains supported.

Logger Configuration

With this release, the way you configure logs has changed. You have to modify the logger configuration for all Telco Service & Analytics Manager components.

Now DEBUG level settings are handled in the `logger.properties` file and no longer in the `log4j.properties` file.

Refer to Administrating Telco Service & Analytics Manager Applications to get detailed information on how setting logs.

Migration Path

The migration process relies on fast OSS/BSS systems. By fast OSS/BSS systems, we mean systems guaranteeing that outgoing message handling and return message generation is performed within a limited time-scale, which can be taken as a base for migration process scheduling.

Depending on how Telco Service & Analytics Manager is integrated with OSS/BSS systems, you migrate using one of the following paths:

- No synchronous workflows handled by the front-end layer.
- Some synchronous workflows exposed by the front-end layer.

Synchronous means that the end user is forced to wait for an answer before the business workflow can continue, with a technical implementation made on asynchronous interactions or synchronous calls.

This is important because the first part of migrating is suspending access to Telco Service & Analytics Manager. If your application does not use synchronous workflows, you easily stop services then start migrating to the newer version. However, if your application has some synchronous workflows, you need to wait for all users to complete their workflows before stopping services and migrating.

Major Changes in Designing

The Presentation Logic Studio (PLS) is a graphical tool which allows developers to model, design and visualize the page flows of an application. With the PLS, developers can concentrate on page flow design, validate links and ensure consistency.

The tool also generates page flow documentation that is ready for publication and review. Another feature is the automatic page flow builder when importing design elements from an existing application. Telco Service & Analytics Manager now comes with an application project template to ease the creation and design of new applications.

Before You Install

Before you install the latest version of Telco Service & Analytics Manager, you must determine which bundles you need to deploy in order to maintain the same functional capabilities. Use the table below to determine the component bundles of Telco Service & Analytics Manager core features you need to install.

COMPONENT BUNDLE HIERARCHY			DESCRIPTION
Personalization Manager			The Personalization Manager is a set of JSP pages and files you use to build the user interface of your applications. You can customize the look-and-feel, workflow, language, features available, and so on.
	Telco Service & Analytics Manager for the web		Installs the Web application template. This fully functional and customizable application includes workflows that cover the main features of Telco Service & Analytics Manager.
		Web workflow files	Installs the Web server files for the Web application template
		Application workflow files	Installs the Application server files for the Web application template
CSS Engine			Installs the CSS Engine. The CSS Engine is the set of Java classes and files that make your application work. Considered as the core of your applications, the different channels use the preset but fully customizable business rules to manage the workflow and access to information.
Customer Interaction Datastore (CID)			The CID is a database for Telco Service & Analytics Manager application data and a local cache of data stored in back-office systems and held for on-line access by Telco Service & Analytics Manager. This component includes everything you need to create, populate and administer the database.
	Administration tools		Administration tools to initialize and manage the CID
	Demo data set		Set of scripts to populate the CID with demo data for the application templates

Communications and Billing Usage (CBU)			The Communications Billing and Usage (CBU) is a database that contains billing and usage information for Telco Service & Analytics Manager users. The CBU allows your Telco Service & Analytics Manager users even more control over their accounts and services by allowing them to consult and analyse their usage and their invoice details.
	Administration Tools		Installs the set of administration tools to initialize and manage the Communications Billing and Usage database.
	Demo Kit		Installs a set of scripts to populate the Communications Billing and Usage database with demo data and some reports.
	CID to CBU Loader		Installs the set of program files and tools needed to run and manage the load of the Communications Billing and Usage database from the Customer Interaction Datastore.
	Customer Dimensions Loader		Installs the set of program files and tools needed to run and manage the load of customer dimensions in the Communications Billing and Usage database.
Synchronization Framework			The SmartLink (ISF) is a component that ensures the integration of Telco Service & Analytics Manager and back-office systems. This component ensures the communication between the CID database and the Operation Support System (OSS) infrastructure.
	Program Files		Set of program files and tools needed to run and manager the Synchronization layer. This set of files provides support for the default technical transport layers: File System, SMTP/POP3, Socket, JMS.

SmartLink (ISF) Message Reference			The SmartLink (ISF) Layer Message Reference is the set of XML schemas that define the inbound/outbound message structure. This bundle also provide a tool that help define and customize messages structure and messages mapping.
OSS/BSS connectors			The OSS/BSS connectors ensure a seamless integration with various market-leading OSS and BSS systems
	Connector Template		Template to build custom connectors
	Loopback connector		The loopback connector mimics an OSS by taking standard messages and creating the return messages. By using this connector, you can run the application templates without and OSS.
Migration Tools			The set of tools you use to migrate from one version to another
	CID		The tools to help migrate the CID

Mandatory Bundles

The following bundles are mandatory for migration:

- All bundles from the installer that are used by your application
- Migration Tools
- Configuration & Deployment Toolkit

To migrate frond-end applications, you must install the Presentation Logic Studio.

To migrate an OSS connector, you must install the Connector Template.

To work with SmartLink (ISF) Messages, you must install the Integration Logic Studio that includes `schemarefTool` tool.

Installing Telco Service & Analytics Manager 4.2

Once you have determined the product bundles you need to install, you are ready to begin migration.

You must install Telco Service & Analytics Manager 4.2 in a new location, but you must also take into account how you plan to deploy Telco Service & Analytics Manager components. For example, you might install the Personalization Manager and CSS Engine on one machine and the Synchronizer on a second machine.

Stopping Services

Before you begin migrating to this version of Telco Service & Analytics Manager, you need to stop the various services of your application. This effectively takes your application off-line. The steps to stopping the services depend on your application workflows:

- No synchronous workflows handled by the front-end layer
- Synchronous workflows handled by the front-end layer

To stop services for applications with no synchronous workflows

1 Stop the request queue polling.

The Request Queue is hosted by the CID database.

The Synchronizer Agent is the component that polls the request queue to generate and send synchronization business messages.

2 Use the appropriate administration tool to switch any Synchronizer that polls the requests queue to PAUSE mode.

For more information about the administration tool and its syntax, refer to Administrating Telco Service & Analytics Manager Applications.

3 Get the requests that have been processed.

The purpose of this step is to obtain the outbound business messages processed by the back-end systems.

It applies to requests that were being handled before you switched the Synchronizer(s) to PAUSE mode.

Even if it is running in PAUSE mode, the Synchronizer is able to handle inbound messages (DO messages) and update the CID data according to message content.

At the end of this step:

OSS/BSS systems have handled the messages and sent back answers.

Inbound messages (answers) have been handled by the Synchronizer(s) and the CID has been updated with new/modified objects.

If the operation was performed correctly, the requests in the queue should only have one of the following statuses:

- Not Yet Submitted
- Done
- Failed
- Transport Failed

Before proceeding, you must make sure that the requests only have one of these statuses.

To perform this check, run an SQL query that counts items from the request queue and filtering/grouping on the `REQUEST_STATUS_CODE` field.

Check the results:

- If requests with an Acknowledged or Submission in Progress status remain in the queue, the operation has been completed normally.

- If requests with a Submitted status remain in the queue, there could be problems because this means the expected DO messages have not been generated or received.

In this case, if the requests concern messages whose structure has changed between versions, you must ensure the OSS/BSS interface components are migrated after these messages have been handled.

4. In the case you have deployed TAM features, stop the services and components that interact with the Communications Billing and Usage (CBU) data warehouse.
5. Stop front-end services, Synchronizer(s), and OSS/BSS interface component(s), such as connectors.

You can now begin migrating to this version.

To stop services for applications with synchronous workflows

1. Block new connections at the front-end level.

This step is mandatory because of synchronous workflows.

If you can only block synchronous workflows, you can apply case 1.

2 Wait for the end of all active front-end sessions.

If your business constraints allow it, you can also force the sessions to end.

3 Stop the request queue polling.

The Synchronizer is the component that polls the request queue to generate and send synchronization business messages.

4 Use the appropriate administration tool to switch any Synchronizer that polls the requests queue to PAUSE mode.

For more information about the administration tool and its syntax, refer to *Administrating Telco Service & Analytics Manager Applications*.

5 Get the requests that have been processed.

The purpose of this step is to obtain the outbound business messages processed by the back-end systems.

It applies to requests that were being handled before you switched the Synchronizer(s) to PAUSE mode.

Even if it is running in PAUSE mode, the Synchronizer is able to handle inbound messages (DO messages) and update the CID data according to message content.

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  In this case, if the requests concern messages whose structure has changed between versions, you must ensure the OSS/BSS interface components are migrated after these messages have been handled.

6 In the case you have deployed TAM features, stop the services and components that interact with the Communications Billing and Usage (CBU) data warehouse.

7 Stop front-end services, Synchronizer(s), and OSS/BSS interface component(s), such as connectors.

You can now begin migrating to this version.

Migrating Your Application

1 Migrate the CID database.

  This step involves:

  - Migrating the nominal CID model on Oracle databases using the migration tool (cidMigrationTool).
  - Migrating custom data structures if the nominal model has been extended with the version you are migrating from.
  - Migrating additional topics, such as scripts or batches that are involved in CID synchronization/management.

  Refer to *Migrating the CID* and *Using the CID Migration Tool* for more information about migrating the CID.

2 Migrate the synchronization message structures

  This step covers the update of the message schema reference topics.

3 Migrate the synchronizer(s)

  This step covers the Synchronizer configuration, the workflow, the message mapping.

  Dedicated sections of this manual explain how to migrate the Synchronizer.

  Before migrating the Synchronizer, make sure no inbound messages remain whose format or structure are specific to the version you are migrating from. The Synchronizer may not be able to handle these messages.

  Inbound refers to inbound messages from the point of view of the Telco Service & Analytics Manager Request queue.

4 Migrate the OSS/BSS interface components

This step covers any component that performs message exchanges between the Synchronizer and the OSS/BSS systems.

In cases where synchronization is fully based on database scripts and triggers, this part of the migration process will have been covered in step 5.

The OSS/BSS interface components may involve connectors. Dedicated sections of this manual explain how to migrate connectors.

Before migrating OSS/BSS interface components, make sure no outbound messages remain whose format or structure is specific to the version you are migrating from. The interface components may not be able to handle these messages and generate the answer messages.

Outbound refers to outbound message from the point of view of the Telco Service & Analytics Manager Request queue.

5 Migrate the CBU loading components.

6 Migrate the front-end application.

7 Upgrade your application (refer to Upgrading Your Application).

8 Restart your front-end application, Synchronizer(s) and OSS/BSS interface components.

Whatever product layer is involved, it is mandatory that you recompile any code that interacts with the BLM or SmartLink (ISF) API after you have migrated it.

Upgrading Your Application

Before you restart your application and restore the service to end-users, you must complete the migration by upgrading the application implementation.

The previous steps are designed to make your application work on top of the Telco Service & Analytics Manager 4.2 framework, but the migration is not complete at this stage. You must also perform the following tasks:

- Avoid using deprecated APIs

  Telco Service & Analytics Manager 4.2 offers backward compatibility with BLM, JSPF and SmartLink (ISF) APIs (some items may not have been maintained).

  For more information about deprecated APIs, refer to the *BLM API Specification* HTML documentation.

  This backward compatibility ensures your application still works with the 3.4 framework.

  edocs recommends that you do not continue to use deprecated APIs, because they no longer expose the nominal and standard features and workflows.

- Change customizations – adapt your application to new 4.2 standards.

Once you finish migrating and upgrading your application, you can begin to implement the new and enhanced features of this release.

CHAPTER 2

Migrating to Telco Service & Analytics Manager 4.2

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Migrating the CID

1. Migrating the nominal CID model

   You use the `cidMigrationTool` tool to migrate CID models to Oracle databases. You can migrate a CID model within the same Oracle instance or into a new Oracle instance. For more information about using `cidMigrationTool`, refer to Using the CID Migration Tool.

2. Migrating the model extensions

   As this task deals with custom storage options, this task cannot be carried out by the CID migration tool. Since model extensions are linked to the nominal model structure, you should refer to the section in this guide that deals with the differences between the v4.0 and v4.2 CID structures.

3. Migrating additional synchronization/management components

   After migrating the database, you must migrate your scripts, batches, or other custom components you have developed to work with the CID. To do this, you can refer to the following:

   - The 4.2 `CID Reference Guide` and the 4.2 `CID for Oracle` Reference Documentation
   - The chapter in this guide that deals with the differences between v4.0 and v4.2 CID structures.

Migrating the Front-end Application Presentation Layer

This section details how to migrate the front-end application with a web channel.

To deal with WAP channel, you have to consider your WAP channel application the same way as the WAP sample the v4.2 installer delivers and follow instructions to make it work with Telco Service & Analytics Manager v4.2.

Migrating the front-end web channel involves:

- Backing up the default v4.2 application
- Transfer resource files from the v4.0 application
- Adapt the way files are arranged
- Activate usage of v4.2 libraries and classes
- Import the channel to the Presentation Logic Studio environment
- Removing calls to deprecated APIs
- Adding new features

Before You Start

The migration path below assumes you installed Telco Service & Analytics Manager v4.2 in a different location than resources of your v4.0 application.

Move the Application to the New JSPF Framework

The goal of this step is to ensure the code of your application is compatible with the JSPF version 4.2.

1. Create a backup copy of the default v4.2 web channel.
2. From the v4.0 channel files, copy all of the `/common` and `/MyWeb` directories, including `/fwk` and `/form_handlers`, into the v4.2 `/channels` directory.
3. From the v4.0 `/WEB-INF` directory, transfer in the v4.2 `/WEB-INF` directory:
   - All content of `/classes` directory.
   - Libraries you may have deployed in `/lib` and that were not delivered with Telco Service & Analytics Manager v4.0.

You can transfer both QRA and WFS content without any change of items as versions 4.0 and 4.2 handle the same structures and formats.

The way you configure the logger has been modified with v4.2, you have to adapt your own logger configuration to the new mode. Refer to Administrating Telco Service & Analytics Manager Applications for details.

BLM/DAL configuration in the channel must be in sync with the one in `<home_dir>/classes` directory.

At the end of this step, the application built using v4.0 should work properly with the JSPF, version 4.2. You deploy the web application to make sure.

Use the New Framework

The goal of this step is to stop using the `/common` directory that was copied from v4.0 channel in step 1.

1. In v4.2 `/channels` files, transfer the content of `/common/form_handler` directory in `/MyWeb/form_handler` directory (resources that may already be in that directory should not be used anymore).
2. Transfer `/common/*.jsp` into `/MyWeb/helpers` (you overwrite existing files).
3. Transfer `/common/fwk` into `/MyWeb/fwk` (you overwrite all files EXCEPT `framework_start`, `framework_end` and `framework_appreset` files that must be kept to ensure you actually use the v4.2 framework).
4. In the display and logic pages (JSPs), replace links of “include” statements, in order to use:
   - Framework files.
   - Form handlers.
   - Helper pages.

   and other files located in `/MyWeb` directory.

   To apply this step, you replace references like “`../common`” with “`./`” and references like “`../common/*helper.jsp`” with “`./helpers/*helper.jsp`”. ‘`*`’ means that several files with “`helper`” suffix are concerned.

Extension of files `framework_start` and `framework_end` in `/MyWeb/fwk` have changed from `.jsp` (version 4.0) to `.inc` (version 4.2).

Finalize the File Structure

The goal of this step is to finalize the channel file structure of the channel, according to v4.2 packaging.

1 Make a backup copy of the `/common` directory, but not inside `/channels` directory.

2 Remove the `/common` directory from `/channels`.

Configure the Application Server

The goal of this step is to make the web application work within the application server.

1 You modify the web application settings because its 'document root' moves from `/channels` to `/channels/MyWeb`.

This change has an impact on the URLs at the client level.

At the end of this step, it is recommended to re-deploy the web application, in order to make sure everything works fine.

Import And Migrate to the Presentation Logic Studio

The goal of this step is to migrate the configuration resources to the PLS tool format.

It is required to have installed the Presentation Logic Studio from Configuration & Deployment Toolkit on the machine where you proceed to the migration of the channel.

1 In the Presentation Logic Studio, activate the Tools/Import menu then:

- Browse to point on the `MyWeb.xml` file of the channel (the file that will be imported).
- Define the `/channels/MyWeb` directory as the target for the new file structure that will be generated by the tool.

For complete information about importing, refer to the Presentation Logic Studio online help or *Developing User Interfaces*.

Associate the New Configuration with the JSPF

The goal of this step is to make the channel configuration the PLS has generated run with the JSPF.

1. In the `/channels/MyWeb/WEB-INF/classes/nmycfg/jfn` directory, edit the `jfnApplication.properties` file.
2. Replace "`MyWeb.xml`" with "`MyWeb.plad`". By default, the two files are located in the same directory.
3. Build and deploy the web application.

Removing Calls to Deprecated APIs

You have to check your application implementation and make sure you do not use APIs that are deprecated with version 4.2.

To do so, you get reference from dedicated sections of online API documents that list differences between version 4.0 and version 4.2 APIs.

Adding Features to Your Migrated Front-end Application

At this stage, you have migrated your previous front-end application and configured it to match the v4.2 Presentation Layer, but you cannot yet take advantage of v4.2 features.

You use the Presentation Logic Studio to enhance feature of the application.

Migrating the Business Logic

Migrating business logic involves:

- Migrating the BLM configuration
- Migrating security on BLM objects
- Migrating integration of custom classes
- Synchronizing Business Logic configuration in channels

Migrating BLM Configuration

- Pending requests that apply on rate plans

  The `UseRequestedRateplan` parameter sets the need for the business logic to take into account pending requests that deal with rate plans.

  The parameter is handled in the `config.xml` file.

  In version 4.2, this setting is available within the same file.

  You must apply the parameter value in the v4.2 file if you have changed it.

- BLM Caching policy

  The `policy.properties` configuration file that handles the caching policy for BLM objects has the same structure.

  It is located in `<home_dir>/classes/nmycfg/blm/util/policy.properties`.

  To migrate the caching policy, you apply the same policy in the v4.2 file.

If you define a caching policy that makes the objects cache `RELOADABLE`, make sure that all objects are set to be reloadable to avoid consistency issues.

BLM Objects

BLM objects configuration is no longer handled in the `core_containers.xml` file.

Before you start the migration, it is recommended that you create a backup copy of the BLM configuration files.

1. Migration applies to external classes you have customized.

   Identify these classes on your current application configuration.

2. For each external class:

- Check which functionality corresponds to the class in the new set of core external classes.

  external classes are defined in the `external_custom.xml` file

- Implement external class customization on the new application.

  For detailed information on how setting external classes, refer to Managing Changing the BLM Business Logic in *Developing Telco Service Manager (TSM).*

  For migrating Java classes, refer to the next section for more details.

BLM Object Security

Security on BLM objects is handled in the `security.xml` file.

Before you start migration, it is recommended that you create a backup copy of the BLM configuration files.

- Constraint:

  Migrate the roles in the CID database, before starting the new application.

  You can refer to the CID migration sections within this manual for details about model changes, but the Migration Tool handles role migration.

  For more information about roles, refer to `Managing Access to BLM Objects` in the `BLM Reference Guide`.

- Migration applies to those objects whose security you have changed.

  Identify these objects in the v4.0 `security.xml` file.

  A good method is to compare the current and the original `security.xml` files.

- To migrate security on objects:

  You have identified impacted objects. Objects whose security settings have not changed should already be ready, as they are part of the core v4.2 release settings.

  You re-apply specific settings on objects in the v4.2 security configuration: in the `security.xml` file.

For detailed information about setting security configuration on BLM objects, refer to `Managing Access to BLM Objects` in the `BLM Reference Guide`.

Business Logic Java Classes

You may have developed Java classes to overwrite or add certain business objects, in other words, to customize the application business logic.

This manual cannot detail all migration scenarios, because they depend on your custom or additional classes.

But there are two main topics to deal with.

The way you declare custom implementation of business logic has changed:

- Customizations of business objects are handled within a dedicated file named `external_custom.xml`.
- Once you have identified custom implementations that overwrite or extend business logic on your current application, you declare topics on the v4.0 framework using this dedicated configuration file.

For detailed information on how declaring custom implementation of business logic, refer to *Changing the BLM Business Logic* in *Developing Telco Service Manager (TSM)*.

In addition, there are some important points relating to APIs you may have used:

- v4.2 BLM APIs are backward compatible with v4.0. This helps you migrate your classes.
- Some interfaces are not compatible, and require implementation changes:
  - Refer to the BLM API Java documentation.
  - Use the information about which APIs have been deprecated in v4.0 to update your class implementation.
- Ensure your classes are correctly referenced in the CLASSPATH variables:
  - Application Server
  - Synchronizer launcher
  - etc.
- You must recompile any code that interacts with the BLM API.

Refer to *Configuring Environment Variables* in *Installing Telco Service & Analytics Manager Applications* to know the new way to handle `CLASSPATH` settings and references to custom java classes in order to make your classes available.

Subsequent Migration Steps

Do not forget to synchronize the Business Logic configurations located in `<app_root>/WEB-INF/classes/nmycfg/blm` and `<home_dir>/classes/nmycfg/blm` directories.

Migrating the DAL

Migrating the DAL involves:

- Migrating DAL instances settings
- Migrating instance data access
- Migrating the DAL internal function redirection
- Synchronizing DAL configuration in channels

DAL Configuration and Application File Distribution

DAL configuration settings appear twice in the whole file distribution. This is because the Data Access Layer is embedded in web applications you deploy in the application server.

Thus, DAL configuration in channels `(/WEB-INF/classes/nmycfg/dal`, in `<app_root>` directory) must be in sync with the configuration that is defined in `<home_dir>/classes/nmycfg/dal` directory.

Migrating DAL Configuration

Migrating the DAL configuration involves:

- Migrating the instance definition in `<home_dir>/classes/nmycfg/dal` that is common to all components.
- Migrating each component database access, handled with `instance_route.properties` files in the configuration file trees.

LDAP Authentication

The DAL - as the abstraction layer for data access – also handles authentication.

The process to activate the LDAP authentication with Telco Service & Analytics Manager v4.2 is the same as the one used with versions 4.0.

It involves two configuration files:

- `functionlist.xml`
- `ldap.xml`

For more information about configuring LDAP authentication, refer to *Configuring Authentication* in *Installing Telco Service & Analytics Manager Applications*.

DAL Instances

Declaring instances works with `instances.properties` file.

This file references `intance_route.properties` file(s) for database access.

To migrate instance declarations, simply identify and transfer file contents.

This transfer also includes queries definition within `core_queries.xml` file: but you only focus on the RDBMS type that your application is based on.

You also have to transfer instance functional topics: data model extensions (`core_containers.xml`), authentication (`functionslist.xml`, `LDAP.xml`).

Migrating DAL Instances Data Access

Each DAL instance is expected to access data from a given data source. There are therefore several access types you may have to deal with during migration.

- Connection Pool Driver

  You migrate settings of the driver named `'PooledInstance'` in your `instance_route.properties` files.

- Migrating the CID Data Source

  The CID data source is handled via the DAL instance named `instance_route.properties`. Telco Service & Analytics Manager installer creates this instance by default.

  You have to transfer customizations to the new v4.2 file distribution.

- Migrating Data Access to External Source via DB queries

  Accessing External Source via DB queries works the same way the CID Data Source does: DAL instance, query file, database access.

  You have to migrate the dedicated DAL instance you have declared and migrate instance data access.

  To be sure you migrate properly, refer to *Accessing External Data Sources* in *Developing Telco Service Manager (TSM)* for detailed steps.

- Migrating Data Access to External Sources invoking a system API

  The DAL also supports data access through external system API invocation.

  In this case too, a DAL instance is dedicated to the data source.

  However, the migration path is different:

  1. Identify the file of type `instance_route.properties` that sets access to the external source in your v4.0 file distribution
  2. Copy this file in the v4.2 distribution.

     Make sure there is no naming conflict and that the file is properly referenced in the `instances.properties` configuration file.

     Check that the object referenced as the DAL driver is available via the right path.
  3. Migrate the DAL driver object:

     If you have developed the DAL driver object yourself, you must migrate its implementation.

     For more information, refer to Accessing External Data Sources and DAL Internal Function Parameter Syntax in *Developing Telco Service Manager (TSM)*.

     Ensure all required classes are correctly referenced by `CLASSPATH` variables.
  4. Migrate the query file declaration:

Even with accessing through an API, queries are handled with files that are like default `core_queries.xml` file – this file is declared in an `instance_route.properties`-like file.

Ensure you declare a query file in the .properties routing file dedicated to this instance.

5. Migrate the query file content:

   Check that the calls match the DAL object you have migrated and update them if necessary.

   Migrate the calls in the new query file (xml) as well.

For more information, refer to *Accessing External Data Sources* and *DAL Internal Function Parameter Syntax* in *Developing Telco Service Manager (TSM)*.

Data Access Special Case: Additional Information on Objects

Additional information is a specific customization you perform on the CID data source.

Additional information on objects is handled as parameters – business logic and storage in the CID database.

The DAL handles additional information through objects and queries. Three files are involved in this customization:

- `core_containers.xml, containers_customization.xml` – DAL instance objects.
- `core_queries.xml` – DAL instance queries.

1 Migrating the DAL objects

You must re-apply the customization performed on the objects within the (`core_containers.xml,containers_customization.xml`) files.

1. Identify the objects you customized in the v4.0 application.
2. Refer to Managing New Parameters in *Developing Telco Service Manager (TSM)* for detailed customization steps and apply them.

2 Migrating DAL queries

1. Re-apply the customization made to the objects within the `core_queries.xml` file.
2. Refer to Managing New Parameters in *Developing Telco Service Manager (TSM)* for detailed customization steps.

3. Identify the queries you customized in the v4.0 application and check whether you still need to customize them in v4.2.

The DAL queries to customize or to keep customized are the queries the customized DAL objects rely on.

Refer to Managing New Parameters in *Developing Telco Service Manager (TSM)* for detailed customization steps and apply them.

DAL Internal Function Redirection

Most of the additional instances (and therefore data access) you have defined are used to redirect certain DAL internal functions.

This procedure describes how to migrate these redirections:

1 Identify the `function_routing.properties` configuration file inside the v4.2 DAL configuration.

The default location is `<home_dir>/classes/nmycfg/dal/function_routing.properties`.

2 Identify the `function_routing.properties` configuration file inside the v4.0 DAL configuration.

The function_routing.properties configuration file is a suite of lines of type: `<query_object.query_method>=<instance_name>`.

3 Ensure each of the DAL instances has been migrated according to the methods above.

4 Apply the redirections

You transfer the `<query_object.query_method>=<instance_name>` lines into the v4.2 `function_routing.properties` configuration file.

Subsequent Migration Steps

Do not forget synchronizing DAL configurations between `<app_root>/WEB-INF/classes/nmycfg/dal` and `<home_dir>/classes/nmycfg/dal` directories.

Make custom implementation available by setting environment variables such as `CLASSPATH`.

Refer to Configuring Environment variables in Installing and Configuring Telco Service & Analytics Manager to know the new way to handle `CLASSPATH` settings and references to custom java classes in order to make your classes available.

Migrating the Synchronization Messages

Migrating the Synchronization Messages involves:

- Migrating customization of message mappings
- Migrating Message Workflows

Migrating Message Reference and Data Mapping

This section applies to all machines that host synchronizer(s) or OSS connector(s).

This section assumes correct v4.2 product bundles have been installed on any concerned machine to be able to migrate synchronizer(s) or connector(s).

In the case the synchronization message reference is deployed on a specific machine that acts as a shared storage area, the v4.2. Synchronization Message Reference bundle should be installed on this machine. Moreover, all synchronizer and/or connectors should point to this shared location (installation step).

The steps described below are available however message reference is deployed: shared storage or replication on any machine that hosts a synchronizer or an OSS connector.

Step 1: Migrating Customization of Message Structure

You may have customized business messages structure.

With Telco Service & Analytics Manager 4.0, custom topics are handled within `.xsd` files that are stored in `<v4.0 install_dir>/data/schemaref/biz/custom`.

To migrate customizations on message structure, you move these files into the v4.2 file distribution: `<v4.2 install_dir>/data/schemaref/biz/custom`.

For information, please notice that the structure of messages has not changed from `v4.0`.

Step 2: Migrating Customization of Message Mapping

You may have customized data mapping on business messages.

With Telco Service & Analytics Manager 4.0, custom topics are handled within .xsd files that are stored in `<v4.0 install_dir>/data/schemaref/biz/custom`.

To migrate customizations on message structure, you move these file into the v4.2 file distribution: `<v4.2 install_dir>/data/schemaref/biz/custom`.

Step 3: Migrating Activation of Attributes for Synchronizer Outbound Messages

With Telco Service & Analytics Manager 4.0, you specify which message attribute should be generated when the synchronizer handles outbound messages. This is done within a dedicated XML file – one file per concerned message. These files are located in `<install_dir>/data/schemaref/biz` and have `activation` as the file name prefix.

To migrate these activation settings, you have to transfer differences between core v4.0 and current activation files into the new v4.2 activation files located in `<v4.2 install_dir>/data/schemaref/biz/`.

The number of activation files to handle is small because there had been no change to message structures.

Step 4: Generating New Message Reference Structure

Now message structure has been migrated, you have to generate the Message reference structure, using the `schemarefTool` tool that is delivered with the Integration Logic Studio – through the Configuration & Deployment Toolkit installer.

You have to run this step on any machine where the message reference is stored. In the case the message reference is shared, you run the step only once.

For more information about using the tool, refer to `Working with the Message Schema Reference` in `Developing Connectors`.

Migrating Synchronizers and OSS/BSS Connectors

Migrating the Synchronizers and Connectors involves:

- Migrating transmappers
- Migrating synchronizer/connector design using the Integration Logic Studio

  This includes:

  - Message mapping
  - Scripts (message workflows)
- Migrating OSS/BSS Adaptors

Getting Started

The migration method for synchronizers/connectors assumes they were designed using the Integration Logic Studio.

With version 4.2, the Integration Logic Studio is part of a dedicated module named Configuration & Deployment Toolkit – that comes as a separate installer.

About Launching Synchronizers

With this version, starting the synchronizer uses a command named `agentstart`.

This command works like ossstart for OSS connectors, taking as first input parameter the synchronizer "name" which is the name of its configuration directory (in `<home_dir>/config/synchronizers`).

Default case – the command is: `agentstart` synchronizer.

Migrating Synchronizer/Connector Design

The migration method for synchronizers/connectors assumes they were designed using the Integration Logic Studio.

Based on this tool and the design files, migrating synchronizers and connectors is now simple.

Messages reference must have been migrated first.

For each synchronizer/connector:

- Gather all resources that complete the synchronizer/connector definition file the Integration Logic Studio works on.
- Compile any custom code against new v4.2' APIs to ensure you do not face any compatibility issue.
- Load the definition file with the v4.2' Integration Logic Studio.
- Check the synchronizer/connector definition, use the validation feature.
- Generate the new runtime configuration that is based on the v4.2 features.

In the case you added some Java classes or archive in the `CLASSPATH` variable – synchronizer or connector – you have to apply this setting in the new 4.2 environment.

Migrating OSS/BSS Adaptors

Before you migrate the connector adaptor, you must have migrated the message reference.

The adaptor is the connector component that acts as the gateway between messages and your OSS system.

- Inbound messages:

  The adaptor extracts information from the data structure that is built from the inbound message. It then invokes the OSS API, which instructs the OSS system to handle the business request of the message.

- Outbound messages:

  The Adaptor builds a data structure based on information retrieved via the OSS API. The outbound message is then generated from this data structure.

- The adaptor implementation depends on the message structure.

  The Connector Template provides you with a framework. This framework automates the generation of a hash table that builds the information handled by your adaptor code.

  The hash table structure directly depends on the message structure. This constraint applies to inbound and outbound messages.

To migrate your adaptor:

1. List the messages the adaptor handles (inbound and outbound).
2. Get the new message structure that is the result of the Synchronization Message Reference migration step described previously.
3. Deduce the hash table structure that you will have to use to handle data on top of the messages.
4. Check your adaptor implementation and adapt the code to match the new hash table structure.

You can make this step easier by using the list of structure differences you had to check while migrating your Synchronization message reference.

Migrating CBU Loading Components

This section is dedicated to the migration of server and tools that your application uses to load and update the CBU data warehouse

Getting Started

When Migrating to Telco Service & Analytics Manager 4.2, you do not need to migrate the CBU database itself.

The structure of this data warehouse has not been modified so that the v4.2 loading components could work either with a v4.0 database or a v4.2 database.

However, it is required migrating related components in order to take advantage of improved stability and functional enhancements.

Migrating the CID2CBU Loader

The CID2CBU loader is configured the same way as in the previous version. The configuration is saved in `<home_dir>/config/cid2cbuloader` directory.

You migrate by transferring specific topics such as DAL instance connection, logger configuration or mapping of elements from the v4.0 configuration to the v4.2 configuration.

In addition, you have to migrate custom code you may have developed to adapt the way data are synchronized from the CID to the CBU.

Ensure that you recompile custom code using v4.2 APIs to avoid any compatibility issues and that you properly transferred the `CLASSPATH` settings.

Migrating the CustDim Loader

The Customer Dimensions loader (CustDim loader) is a connector that is delivered with runtime and design resources to be modified using the Integration Logic Studio.

You migrate the CustDim Loader the same way you migrate OSS/BSS connectors by using the Integration Logic Studio.

CHAPTER 3

CID Physical Model Differences 4.0 to 4.2

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Warnings

- Chapter Contents

  This chapter does not detail packages of the CID physical model because differences between v4.0 model and v4.2 model are limited to some new tables and new system reference data.

- Sequences

  Most of the IDs in the CID physical model are generated by sequences.

  After migration, the sequences must be reset to a value that is the maximum of used IDs for the data concerned.

For detailed information about the tables and packages, refer to the CID for Oracle Reference HTML documentation.

CID Differences

New Tables

The following tables have been added:

- JOB
- JOB_PARAM
- JOB_PARAM_VALUE
- JOB_PARAM_VALUE_LIST
- JOB_STATUS

The following sequences have been added:

- SEQ_JOB
- SEQ_JOB_PARAM_VALUE

Migration Method

Migrating the CID consists of transferring data from the v4.0 database into the new v4.2 database, provided that:

- Tables of the v4.0 schema have not been modified.
- Some tables now contain new additional reference data.
- Some new tables have been added.

The CID migration tool (see next section) implements this migration method, covering the standard v4.0 and v4.2 CID database models.

To handle your specific data sets in your CID, you have to proceed manually through additional steps after using the CID migration tool.

As well as the cidAdminTool .sql files, those of the cidMigrationTool could be modified to handle some customizations of the DB model.

System Reference Data

Differences Between V4.0 and V4.2 System Reference Data

- New Object Types

OBJECT ID	NAME
18	Jobs

- New User Type Event Categories

USER EVENT CATEGORY ID	NAME
5	Reporting events
6	Organization view management events

- New User Type Event

USER TYPE EVENT ID	NAME
200	Generated every time a user loads a report for execution
201	Generated every time a user confirms report execution
202	Generated every time a report is executed synchronously or in the report processor
203	Generated every time a user saves a report
204	Generated every time a user loads a saved report
205	Generated every time a user loads a report processed by the job processor
206	Generated every time a user downloads a report
207	Generated every time a user creates a new organization view manually
208	Generated every time a user uploads a new or an existing organization view
209	Generated every time a user downloads an existing organization view
210	Generated every time a user removes an organization view
211	Generated every time a user changes the org view owner

212	Generated every time a user adds a new level to an org view
213	Generated every time a user removes a level from an org view
214	Generated every time a user moves a level inside an organization view
215	Generated every time a user adds a contract to an organization view
216	Generated every time a user removes a contract from an organization view
217	Generated every time a user moves a contract inside an organization view

- New Parameters

ID	PARAMETER CODE	NAME
194	CORE_C_JOBTYPE	Job type
195	CORE_C_JOBSERVICECODE	Job service
196	CORE_C_JOBCREATORID	Job creator
197	CORE_C_REPORTJOBSTATUS	Report statuses
198	CORE_C_JOBSTATUSCODE	Job status code
199	CORE_C_REPORTJOBCREATIONDATEMIN	Submitted on or after
200	CORE_C_REPORTJOBCREATIONDATEMAX	Submitted on or before
201	CORE_C_JOBISREAD	Is job read
202	CORE_C_JOBISDELETED	Is job deleted
203	CORE_C_REPORTJOBNAME	Submitted report name
204	CORE_C_REPORTJOBSTATUSCHANGEDATEMIN	Status changed on or after
205	CORE_C_REPORTJOBSTATUSCHANGEDATEMAX	Status changed on or before
206	CORE_UEVT_REPORTCODE	Report code
207	CORE_UEVT_REPORTNAME	Report name
208	CORE_UEVT_ISREPORTASYNC	Report execution mode
209	CORE_UEVT_PROVIDERSEXECTIME	Providers execution time
210	CORE_UEVT_DOWNLOADREPORTFORMAT	Report download format
211	CORE_UEVT_ORGVIEWASSOCLEVEL	Organization view associated level
212	CORE_UEVT_ORGVIEWREF	Organization view reference

213	CORE_UEVT_ISUPLOADEDORGVIEWNEW	Is uploaded organization view new

- New Filters

ID	FILTER CODE	NAME
35	CORE_INTORG_MYREPORTJOBSEARCH	Reports jobs general search
36	CORE_INTORG_MYREPORTRESULTSEARCH	Reports jobs results general search
37	CORE_INTORG_MYREPORTRESULTNOTREAD	Unread reports jobs results search

- New Default Values

DEFAULT_VALUE_ID	VALUE_TYPE
14	S
15	S
16	S
17	S
18	S
19	S
20	S
21	S
22	S

- Job Status (in new Job Status table)

STATUS_ID	NAME
2	To be processed
4	Done
5	Failed
7	Canceled
8	In progress

- New Search Criteria

SEARCH_FILTER_ID	PARAM_ID	DAL_PARAMETER_NAME
35	194	jobType
35	196	jobCreatorId
35	197	jobStatus
35	203	jobName
35	199	jobCreationDateMin
35	200	jobCreationDateMax
35	202	jobIsDeleted
36	194	jobType
36	196	jobCreatorId
36	198	jobStatus
36	203	jobName
36	199	jobCreationDateMin
36	200	jobCreationDateMax
36	204	jobStatusChangeDateMin
36	205	jobStatusChangeDateMax
36	202	jobIsDeleted
37	194	jobType
37	196	jobCreatorId
37	198	jobStatus
37	201	jobIsRead
37	202	jobIsDeleted

- `Modified Values`
  - In the table `SEARCH_FILTER`:

    Typo error was fixed for entry `SEARCH_FILTER_ID=34`.

Migrating Request Status

If you have declared additional request statuses, (which is an unsupported customization) you must re-apply them to the new CID schema.

Otherwise, the migration tool handles requests by their status, even if status code is not in the core System Reference Data.

Migrating System Reference Data Labels

If you have customized labels in the System Reference data, you have to migrate your changes. Do one of the following:

- Before starting the migration tool against your current model.
  - Modify `sys_ref_data.sql` and `sys_ref_ustr.sql` in `<home_dir>/data/mig_oracle`.

    These files contain the strings that are used to set the system reference data. You can change the values inside these files. The migration tool uses them to populate the system reference data in the new database schema.
- After you migrated the CID using the migration tool or manually:

  Re-apply customizations in the new model.

CHAPTER 4

CID Migration Tool User Guide

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CID Migration Tool Features

The tool handles the migration of the CID model for Oracle databases.

You can migrate the model into the current Oracle instance or into a new one.

The tool can only migrate the original CID model that is installed by the database administration tools.

It ensures the v4.2 framework can run on top of the CID after migration.

How Does the Tool Work?

Overview

The Migration Tool runs as a database client, but executes SQL statements on the Oracle instances concerned in the migration.

The Migration Tool does not transfer any data between the Oracle instances concerned in the migration and the Migration Tool host machine.

The Migration Tool is supplied with one command for migrating from v4.0 to v4.2.

The migration tool creates a new v4.2 database model.

If you migrate into the current Oracle instance, the new model:

- Is owned by an Oracle user who is distinct from the current model owner.
- Is created in the same table spaces as the original database model.

If you migrate into a new instance, you must create table spaces and users before you run the tool.

The tool then parses data from the current model and inserts them into the new model.

The Migration Process

The migration tool works in a series of distinct steps. The steps are:

STEP	DESCRIPTION
1	Connect to database and create the new v4.2 model
2	Install system reference data
3	Install localized reference data
4	Migrate general reference data
5	Migrate doc reference data
6	Migrate parameters
7	Migrate action rules
8	Migrate commercial offers
9	Migrate search filters
10	Migrate customers
11	Migrate trouble tickets
12	Migrate contracts
13	Migrate invoices
14	Migrate payments
15	Migrate usage info
16	Migrate user events
17	Migrate organization and notifications
18	Migrate requests
19	Migrate action managers
20	Migrate approval processes
21	Migrate translations
22	Create indexes and constraints

What You Need to Migrate

You must install the following product components on the client machine:

- Migration Tools / CID.
- CID / Administration tools.

You must install the following third-party products:

- Oracle client with Java Products / JDBC drivers.
- JRE 1.2.2 or later.

You must already have entered the home path for these two products during the installation processes.

Preparing to Use the Tool

Migrating the CID database is a key task that takes place during the general migration process.

For more information about the general migration process, refer to the *Overview of Migrating Telco Service & Analytics Manager* section.

As part of migrating the CID, there are certain mandatory operations that are specific to database migration that you must perform before migrating.

To prepare to migrate the CID, you:

1 Backup the current CID instance.

Before migrating the CID, we recommend making a backup copy of the Oracle instance which hosts the original CID.

2 Set the table spaces.

The operation you must perform for table spaces depends on the migration method you choose:

- Migration to the same database instance

  The existing table spaces must be resized to be capable of hosting the new database.

  The ideal size is twice the current size.

- Migration to a new database instance

  For information about creating table spaces, refer to *Installing Telco Service & Analytics Manager Applications*.

  You must keep indicated table space names.

  Keep the table spaces the same size as in the current DB model.

3 Set the users and roles

The operations you must perform depend on the migration method you choose:

- Migration to the same database instance

  You must create a new set of `<CID_ADMIN>` and `<CID_USER>` users with their associated roles in the current Oracle instance.

  Use the `cidAdminTool create_cid_users` command to do this. For information about users and roles, refer to *Installing Telco Service & Analytics Manager Applications*.

  This command handles user roles and creates the `CID_ADMIN_ROLE` and `CID_USER_ROLE` roles.

  As a result, users associated with the original model and users associated with the new model have identical roles.

- Migration to a new database instance

  You must create <CID_ADMIN> and <CID_USER> users as if you were deploying the CID from scratch. For more information, refer to *Installing Telco Service & Analytics Manager Applications*.

  This command handles user roles, and creates the CID_ADMIN_ROLE and CID_USER_ROLE roles.

  In addition to creating the users and roles, you must give the CID_ADMIN_ROLE privileges to create database links. This ensures links between the new and the original instances can be created to transfer data.

  Follow this procedure to grant CID_ADMIN_ROLE this privilege:

  1. Connect to the new instance as the Database administrator.
  2. Enter GRANT CREATE DATABASE LINK TO CID_ADMIN_ROLE.

4 Size the tables

During step 1, the Migration Tool creates the v4.2 CID model.

This creation procedure is externalized through an SQL script: create_cid35.sql.

To size the new schema tables, you must customize this script before launching the migration tool as you did when you created the original DB model.

The script path is <home_dir>/data/mig_oracle/create_cid35.sql.

Migration Tool Configuration Topics

Handling table records by groups

- The migration tool behavior is to handle tables by groups of records while transferring data.

  By default, the number of records is 10000. This means every 10000 rows, the tool executes the SQL query that makes the data transfer.

  You can adapt the row split number to your deployment size by changing the `TableSplitRowNum` parameter value of the `mig_tools.properties` configuration file that is located in the `<home_dir>/lib/admin/mig_cid` directory.

  If the value is 0, there is no split: the data transfer is made in one shot for each table.

Requests that deal with rate plans

- The migration tool handles a parameter that configures whether or not the tool takes into account pending requests that deal with rate plans while migrating the Request Queue

  This setting is similar to the BLM setting you may have changed within your application: `UseRequestRatePlan`, in the BLM configuration `config.xml` file.

  The migration tool setting is also named `UseRequestRatePlan`, and is handled through the `mig_tools.properties` configuration file that is located in the `<home_dir>/lib/admin/mig_cid` directory.

  Make sure that the migration tool setting value is identical to the business logic setting value.

Migrating From v4.0 to v4.2

Use the `33_to_35` command `to migrate from` v4.0 to v4.2.

Tool Location

You can launch the Migration Tool from the `<home_dir>/bin` directory.

To migrate the CID

To launch the migration tool:

1. Go to `<home_dir>/bin`.
2. Run `cidMigrationTool` 33`_to_35`.

   If you experience any problems with the syntax, type `cidMigrationTool -help` to get the detailed syntax.
3. Select your migration method from the menu the Migration Tool displays:

```
--------------- Migration Method select ----------


1) Migrate using the same database instance (faster)

2) Migrate using a new database instance

3) quit


  Enter your choice:
```

4. Enter the parameters as described in the following tables:

TOOL DISPLAY / CASE 1	ACTION
---------- CID Parameters select ----------	None - presentation
PARAMETERS CID 4.2	None - presentation
Enter the CID 4.2 Instance name:	Enter the Oracle instance that will host the new DB model. (This instance also hosts the original model).
Enter the User for <instance name>:	Enter the <CID_ADMIN> login to be used with the new model. This login is used to connect to the instance and will be the owner of the new v4.2 model. It corresponds to the new admin user you create for the instance before launching the tool.
Enter the Password for user <user> on <instance name>:	Enter the password associated with the user you have just entered
PARAMETERS CID 4.0	None - presentation
Enter the User for <instance name>:	Enter the <CID_ADMIN> login to be used with the v4.0 model. This login is used to access the v4.0 model. It corresponds to the v4.0 CID model owner.
Enter the Password for user <user> on <instance name>:	Enter the password associated with the user you have just entered

TOOL DISPLAY / CASE 2	ACTION
---------- CID Parameters select ----------	None - presentation
PARAMETERS CID 4.2	None - presentation
Enter the CID 4.2 Instance name:	Enter the Oracle instance that will host the new DB model.
Enter the User for <instance name>:	Enter the <CID_ADMIN> login to be used with the new model. This login is used to connect to the instance and will be the owner of the new v4.2 model. It corresponds to the new admin user you create for the instance before launching the tool.
Enter the Password for user <user> on <instance name>:	Enter the password associated with the user you have just entered
PARAMETERS CID 4.0	None - presentation
Enter the CID 4.0 Instance name:	Enter the Oracle instance where the current 4.0 database model is hosted.

Enter the User for <instance name>:	Enter the <CID_ADMIN> login to be used with the v4.0 model. This login is used to access the v4.0 model. It corresponds to the v4.0 CID model owner.
Enter the Password for user <user> on <instance name>:	Enter the password associated with the user you have just entered

Once you have entered these input parameters, the tool starts running the migration steps.

Troubleshooting

There are several reasons why the migration might fail:

- Connection issues

  You did not correctly enter the Oracle instances and/or user input parameters.

- Privilege issues

  The users you entered are not model owners, or in the case of a migration to a new instance, the `CID_ADMIN_ROLE` does not have necessary privileges to create database links.

- Table space issues

  You may not have respected naming requirements when you created the table spaces.

  You may not have sized the table spaces correctly.

- An individual migration step may have failed

  If this is the case, correct the issue as found in the tool and run the step again. For more information, refer to the *Tool Behavior in Case of Error* section.

Tool Behavior in Case of Error

When something goes wrong during the migration, the tool display informs you which step has caused the problem.

The Migration Tool lets you start again from the last successful step.

Before restarting the tool, check the error file to find the error and correct it.

Log and error files are generated in the `<HOME_DIR>/var/logs/admin` directory:

- `33_to_35.err.log / 33_to_35.log`

These files also log the steps. Here you can easily check where the error occurred.

Follow this procedure to start again:

1. Start the tool.
2. Select the same migration method.
3. Enter the same connection parameters (except if the error is a connection problem).

The Migration Tool detects the failed step and prompts you to start again from that point.

After Migration

After migration, you must perform the following operations:

- Revoke the database link creation privileges you assigned to the `CID_ADMIN_ROLE` for the v4.0 instance:

  Connect to the v4.0 instance as the database administrator.

  Type "`REVOKE CREATE DATABASE LINK FROM CID_ADMIN_ROLE`".

APPENDIX A

Supplementary Migration Documentation

This section contains links to documentation topics referred to in this manual.

DOCUMENTATION TOPIC	LOCATION
SmartLink (ISF) Schema Reference	On product CD: ./Documentation/isf_schema_ref
Product APIs: • BLM API • SmartLink (ISF) API • SmartLink (ISF) Workflow API	On product CD: • ./Documentation/blm_api • ./Documentation/isf_api • ./Documentation/isf_workflow_api
Configuration and customization files reference	On product CD: ./Documentation/Installing_Telco Service & Analytics Manager_Applications.pdf
Administrating Telco Service & Analytics Manager Applications	On product CD: ./DocumentationAdministrating_Telco Service & Analytics Manager_Applications.pdf
JSPF Logic Handler JSP Reference	On product CD: ./Documentation/jfn_api
CID Reference Guide	On product CD: ./Documentation/CID_Reference_Guide.pdf
CID Reference for Oracle	On product CD: ./Documentation/cid_oracle
CID Physical Model differences and migration rules	Inside this guide
CID Migration Tool user guide	Inside this guide
Developing Telco Service Manager (TSM)	On product CD: ./Documentation/Developing_Account_Management_Applications.pdf

Developing TAM	On product CD: ./Documentation/Developing_Analytical_Applications.pdf
Developing Connectors	On product CD: ./Documentation/Developing_Connectors.pdf
Developing Reports	On product CD: ./Documentation/Developing_Reports.pdf