

Upgrade Guide

Release 9.1.04



Upgrade Guide

Release 9.1.04

| Note | | | | | |
|--------------------------|-------------------------|--------------------|-------------------|---------------------|--|
| efore using this informa | tion and the product it | supports, read the | information in "N | otices" on page 23. | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Copyright

This edition applies to the 9.1 Version of IBM Sterling Warehouse Management System and to all subsequent releases and modifications until otherwise indicated in new editions.

© Copyright IBM Corporation 2005, 2012. US Government Users Restricted Rights – Use, duplication or disclosure restricted by GSA ADP Schedule Contract with IBM Corp.

Contents

| Chapter 1. Performing a Migration Assessment | Upgrade Sterling Warehouse Management System Add-In |
|---|--|
| Upgrade Overview | Upgrade Sterling Warehouse Management System 7 Run Upgrade Using NFS Mounting |
| System Requirements | Chapter 3. Upgrading Sterling Warehouse Management System: |
| Interface 3 Migrating Alter Scripts 3 Migrating Estimates 4 Upgrading Custom Components 4 | Business Intelligence |
| Chapter 2. Upgrading to Release 9.1 Along with Selling and Fulfillment | Data Sources |
| Foundation 9.1 5 Upgrading to Release 9.1 Along with Selling and Fulfillment Foundation 9.1 | System: Business Intelligence 9.1 |
| Install Sterling Warehouse Management System, Release 9.1 | Index |
| Upgrading to the Selling and Fulfillment Foundation, Release 9.1 | Notices |

Chapter 1. Performing a Migration Assessment

Upgrade Overview

This manual explains how to upgrade from Sterling Networked Warehouse Management System Release 1.0, or later to IBM Sterling Warehouse Management System Release 9.1.

It provides assistance to system administrators, database administrators, and implementation personnel when upgrading from Sterling Networked Warehouse Management System Release 1.0 (or later) to Sterling Warehouse Management System Release 9.1.

Performing a Migration Assessment

This topic explains the changes between each earlier release of the Sterling Networked Warehouse Management System and Sterling Warehouse Management System. Read this topic to assess the changes required to upgrade to Sterling Warehouse Management System, Release 9.1.

The following table describes the upgrade paths available from Sterling Warehouse Management System Release 1.0 to Sterling Warehouse Management System, Release 9.1 and the supported Selling and Fulfillment Foundation, Release 9.1.

Table 1. Upgrade Paths to Release 9.1

| From | | То | | Path Followed | |
|--|---|--|--|---|--|
| Sterling Supply Chain Applications Version | Sterling nWMS/ Sterling Warehouse Management System Version | Selling and Fulfillment Foundation Version | Sterling Warehouse Management System Version | Sterling Supply Chain Applications/ Selling and Fulfillment Foundation | Sterling nWMS/Sterling Warehouse Management System |
| 7.3 | 1.0 | 9.1 | 9.1 | 7.3 -> 7.5 -> 7.5 SP1 -> 7.7->7.9-> 7.11 ->8.0 ->8.2 ->8.5->9.0-> 9.1 | 1.0 -> 2.0 -> 2.5 ->2.5.1-> 7.3->7.5->8.0 ->8.5->9.0 ->9.1 |
| 7.5 | 2.0 | 9.1 | 9.1 | 7.5 —> 7.5 SP1 -> 7.7—> 7.9—>7.11 ->8.0 —>8.2 ->8.5—>9.0 ->9.1 | 2.0 —> 2.5 —>2.5.1—> 7.3 —>7.5 —>8.0—>8.5 —>9.0—>9.1 |
| 7.5 SP1 | 2.5 | 9.1 | 9.1 | 7.5 SP1 —> 7.7—> 7.9—>7.11—> 8.0 —>8.2—> 8.5—>9.0—>9.1 | 2.5—>2.5.1—>7.3 —>7.5—>8.0 —>8.5 —>9.0—>9.1 |

Table 1. Upgrade Paths to Release 9.1 (continued)

| From | | То | | Path Followed | |
|--|---|--|--|---|--|
| Sterling Supply Chain Applications Version | Sterling nWMS/ Sterling Warehouse Management System Version | Selling and Fulfillment Foundation Version | Sterling Warehouse Management System Version | Sterling Supply Chain Applications/ Selling and Fulfillment Foundation | Sterling nWMS/Sterling Warehouse Management System |
| 7.7 | 2.5.1 | 9.1 | 9.1 | 7.7—>7.9—> 7.11—> 8.0 —>8.2 —>8.5—> 9.0—>9.1 | 2.5.1—>7.3—> 7.5—>8.0 —> 8.5—>9.0—>9.1 |
| 7.9 | 7.3 | 9.1 | 9.1 | 7.9—>7.11—> 8.0 —>8.2 —>8.5 —>9.0—>9.1 | 7.3—>7.5—>8.0 —>8.5—>9.0 —>9.1 |
| 7.11 | 7.3 HF7 | 9.1 | 9.1 | 7.11—>8.0—>8.2 —> 8.5—>9.0—>9.1 | 7.3—>7.5—> 8.0 —>8.5— >9.0—>9.1 |
| 7.11 | 7.5 | 9.1 | 9.1 | 7.11—>8.0—> 8.2 —> 8.5—>9.0—> 9.1 | 7.5 —>8.0—>8.5 —>9.0—>9.1 |
| 8.0 | 8.0 | 9.1 | 9.1 | 8.0—>8.2 —> 8.5—>9.0—>9.1 | 8.0—>8.5—> 9.0—>9.1 |
| 8.5 | 8.5 | 9.1 | 9.1 | 8.5—> 9.0—> 9.1 | 8.5-> 9.1 |
| 9.0 | 8.5 | 9.1 | 9.1 | 9.0-> 9.1 | 8.5—> 9.1 |

System Requirements

The system requirements for upgrading to Sterling Warehouse Management System, Release 9.1 are the same as that for upgrading to the Selling and Fulfillment Foundation, Release 9.1.

For more information about the system requirements, see the *Selling and Fulfillment Foundation: Upgrade Guide*.

Database Update During Migration

The following topics describe the database updates performed when upgrading to Sterling Warehouse Management System, 9.1.

During the upgrade process, several tables, along with the data in these tables, may be changed. This section describes the steps necessary to find the tables that have incurred changes.

The following types of database updates can be performed:

- · Factory Setup Migration
- · Custom Data Migration

Factory Setup Migration

For a list of tables with factory setup data being changed, please review the following directories:

- For tables with additional factory setup data as part of Sterling Warehouse Management System Add-In: <INSTALL_DIR>/WMS/Migration/WMS_Add-in/8.5/ database/FactorySetup/XMLS/ynw/added
- For tables with changed factory setup data as part of Sterling Warehouse Management System Add-In: <INSTALL_DIR>/WMS/Migration/WMS_Add-in/8.5/database/FactorySetup/XMLS/ynw/changed
- For tables with deleted factory setup data as part of Sterling Warehouse Management System Add-In: <INSTALL_DIR>/WMS/Migration/WMS_Add-in/8.5/ database/FactorySetup/XMLS/ynw/deleted
- For tables with additional factory setup data as part of Sterling Warehouse Management System: <INSTALL_DIR>/WMS/Migration/WMS/8.5/database/ FactorySetup/ynw/added
- For tables with changed factory setup data as part of Sterling Warehouse Management System: <INSTALL_DIR>/WMS/Migration/WMS/8.5/database/ FactorySetup/ynw/changed
- For tables with deleted factory setup data as part of Sterling Warehouse Management System: <INSTALL_DIR>/WMS/Migration/WMS/8.5/database/ FactorySetup/ynw/deleted changed

Note: The name of each file in these directories corresponds to the name of the table that is being updated, for example, the YNW_YFS_EVENT.xml file corresponds to the YFS_EVENT table.

Custom Data Migration

For a list of tables changed during the Custom Data Migration process using SQL updates, refer to the Important Behavior Changes section of the release that is relevant to your upgrade. In the Important Behavior Changes section, you can find the following information:

- The changes that have taken place during the migration
- The locations of the SQL scripts that have been run or the tables that have been affected

Sterling Warehouse Management System User Interface

Additional Application Consoles user interface features have been introduced between Sterling Warehouse Management System, Release 1.0, and Sterling Warehouse Management System, Release 9.1. However, they are not mentioned in this document because they do not impact migration assessment in any way. For additional information regarding the new features in the Sterling Warehouse Management System Application Consoles, see the Sterling Warehouse Management System: Release Notes.

Migrating Alter Scripts

The alter scripts for the Sterling Warehouse Management System entities are generated and executed when upgrading from Sterling Supply Chain Applications, Release 7.3 (or later), to Selling and Fulfillment Foundation, Release 9.1.

Migrating Estimates

Only the factory defaults migration is involved when upgrading to Release 9.1. Therefore, the upgrade tasks complete in minimum time.

Upgrading Custom Components

Custom components are upgraded when upgrading from the Sterling Supply Chain Applications, Release 7.3 (or later) to Selling and Fulfillment Foundation, Release 9.1. Any extensions made by you are copied to the <INSTALL_DIR>/ extensions directory in the Selling and Fulfillment Foundation, Release 9.1.

Note: Analyze all APIs to determine whether BC mode is necessary to run a given API, user exit, or an event. It is recommended that you use the current version rather than BC wrappers.

Chapter 2. Upgrading to Release 9.1 Along with Selling and Fulfillment Foundation 9.1

Upgrading to Release 9.1 Along with Selling and Fulfillment Foundation 9.1

This chapter describes the sequence of procedures that you must follow to upgrade from Sterling Networked Warehouse Management System, Release 1.0 (or later) to Sterling Warehouse Management System, Release 9.1, along with the Selling and Fulfillment Foundation, Release 9.1.

Installing Selling and Fulfillment Foundation, Release 9.1 Before you begin

Before proceeding with the upgrade, ensure that you have installed Selling and Fulfillment Foundation, Release 9.1.

For installation instructions, see the *Selling and Fulfillment Foundation*: *Installation Guide*.

Note: This upgrade strategy supports the Selling and Fulfillment Foundation upgrade only. It does **not** support the upgrade of Release 1.0 or above with installed Packaged Composite Applications (PCAs) to Release 9.1.

Install Sterling Warehouse Management System, Release 9.1 Before you begin

Before proceeding with this upgrade, ensure that you have performed the following tasks:

- Installed Sterling Warehouse Management System 9.1.
- · Rebuilt the EAR file with database extensions.

For installation instructions, see the *Sterling Warehouse Management System: Installation Guide*. Before installing the Sterling Warehouse Management System, perform the following tasks:

Procedure

- 1. Before upgrading from Release 8.5 to Release 9.1, compare the entity extension files in <INSTALL_DIR_OLD>/repository/entity/extensions with the entity extension files in <INSTALL_DIR_OLD>/extensions/global/entities. If there are extension files with matching file names, consolidate these files into one file in <INSTALL_DIR_OLD>/repository/entity/extensions.
- For upgrade, Apache Ant is being shipped inside the migration kit directory. Set the ANT_HOME environment variable to <INSTALL_DIR>/Migration/apache-ant-1.7.1
- 3. Go to <INSTALL_DIR>/Migration directory and execute the following command chmod -R 755 apache-ant-1.7.1
- 4. Ensure that the <JAVA_HOME> environment variable points to the folder where the JDK is installed.

Upgrading to the Selling and Fulfillment Foundation, Release 9.1

Before upgrading to Sterling Warehouse Management System, Release 9.1, ensure that you have upgraded to the Selling and Fulfillment Foundation, Release 9.1. The Selling and Fulfillment Foundation, Release 9.1 upgrade performs the following actions for the Sterling Warehouse Management System upgrade tasks:

- · Alters the schema
- Copies the current customizations

For more information about upgrading to the Selling and Fulfillment Foundation, Release 9.1, see the *Selling and Fulfillment Foundation: Installation Guide*

Upgrading to Sterling Warehouse Management System, Release 9.1

After you have upgraded to the Selling and Fulfillment Foundation, Release 9.1, you can upgrade the factory defaults for Sterling Warehouse Management System, Release 9.1 Add-in and Sterling Warehouse Management System, Release 9.1.

Upgrading to Sterling Warehouse Management System is a two-step process:

- Upgrading the Sterling Warehouse Management System Add-In
- Upgrading Sterling Warehouse Management System

Upgrade Sterling Warehouse Management System Add-In Procedure

- To upgrade the factory defaults for the Sterling Warehouse Management System 9.1 Add-in, run the following commands from the <INSTALL_DIR>/WMS/ Migration/WMS Add-in/8.0folder:
 - When migrating from Releases 2.5, 8.0, or 8.5 to 9.1, run: \${ANT_HOME}/bin/ant -f ynwmigration.xml -Druntime.old=<YFS_HOME_OLD> -Druntime=<INSTALL_DIR> -Dtarget=upgrade-transaction-tables migrate -l <logfile>
 - When migrating from Releases 2.5.1, 7.3 or 7.5 to 9.1, run: \${ANT_HOME}/bin/ant -f ynwmigration.xml -Druntime.old=<YFS_HOME_OLD> -Druntime=<INSTALL_DIR> -DYANTRA_HOME.OLD=<YANTRA_HOME_OLD> -Dtarget=upgrade-transaction-tables migrate -l <logfile>
- 2. To update the SI_VERSION table for the Sterling Warehouse Management System 9.1 Add-in, run the following commands from the <INSTALL_DIR>/WMS/Migration/WMS_Add-in/8.0 folder:
 - When migrating from Releases 2.5, 8.0, or 8.5 to 9.1, run: \${ANT_HOME}/bin/ant -f ynwmigration.xml -Druntime.old=<YFS_HOME_OLD> -Druntime=<INSTALL_DIR> -Dtarget=update-application-version migrate -l <logfile>
 - When migrating from Releases 2.5.1, 7.3 or 7.5 to 9.1, run:
 - \${ANT_HOME}/bin/ant -f ynwmigration.xml -Druntime.old=<YFS_HOME_OLD>
 -Druntime=<INSTALL DIR> -DYANTRA HOME.OLD=<YANTRA HOME OLD>
 - -Dtarget=update-application-version migrate -1 <logfile>

These commands perform the following tasks:

- a. Execute the changes in the factory setup XML.
- b. Execute the following tasks:
 - apply-fc-setup
 - pre-transaction-migration

- migrate-transaction-data
- post-transaction-migration
- update-application-version
- c. After the tasks are completed, search for all the *.restart files under the following directories:
 - 8.5/database/FactorySetup/XMLS/ynw
 - 8.0/database/FactorySetup/XMLS/ynw
 - 7.5/database/FactorySetup/XMLS/ynw
 - 7.3/database/FactorySetup/XMLS/ynw
 - 2.5.1/database/FactorySetup/XMLS/ynw
 - 2.5/database/FactorySetup/XMLS/ynw
- d. Ensure that Completed="Y" for all the tasks.

If Completed="Y", it means that the upgrade tasks are successfully completed. If Completed="N" for any task, contact the Selling and Fulfillment Foundation Technical Support with all the restart files and log files. Do not proceed with the upgrade.

- e. Creates the following *.done files in the 8.5/status folder:
 - transaction ant migration.xml.done
 - transaction ant postmigration.xml.done
 - transaction ant premigration.xml.done
 - transaction ant upgradepreparation.xml.done
 - transaction ant validation.xml.done
 - transaction ant ynwapplyfcsetup.xml.done
 - transaction ant applicationversion.xml.done

If you are upgrading from previous release to 9.1, the same *.done files will be created in the status folder of each release upto 8.0.

For example, if you are upgrading from 2.5, the *.done files will be available in the status folder of Releases 2.5, 2.5.1, 7.3, 7.5 and 8.0.

- 3. To clean up all the *.restart and *.done files before restarting the upgrade, execute the following commands:
 - When migrating from Releases 2.5 or 8.0 to 9.1, run:
 - \${ANT HOME}/bin/ant -f ynwmigration.xml -Druntime.old=<YFS_HOME_OLD> -Druntime=<INSTALL DIR> -Dtarget=clean-up-for-rerun migrate
 - When migrating from Releases 2.5.1, 7.3 or 7.5 to 9.1, run:
 - \${ANT_HOME}/bin/ant -f ynwmigration.xml -Druntime.old=<YFS HOME OLD> -Druntime=<INSTALL_DIR> -DYANTRA_HOME.OLD=<YANTRA_HOME_OLD> -Dtarget=clean-up-for-rerun migrate

Upgrade Sterling Warehouse Management System Procedure

- 1. To upgrade the factory defaults for Sterling Warehouse Management System, Release 9.1, run the following commands from the <INSTALL DIR>/WMS/ Migration/WMS Add-in/8.0 folder:
 - When migrating from Releases 1.0, 2.0, 2.5, 8.0 or 8.5 to 9.1, run: \${ANT HOME}/bin/ant -f ynwmigration.xml -Druntime.old=<YFS HOME OLD> -Druntime=<INSTALL DIR> -Dtarget=upgrade-transaction-tables migrate -l <logfile>
 - When migrating from Releases 2.5.1, 7.3, 7.5 to 9.1, run:

- \${ANT_HOME}/bin/ant -f ynwmigration.xml -Druntime.old=<YFS_HOME_OLD> -Druntime=<INSTALL_DIR> -DYANTRA_HOME.OLD=<YANTRA_HOME_OLD> -Dtarget=upgrade-transaction-tables migrate -l <logfile>
- 2. To update the SI_VERSION table for the Sterling Warehouse Management System 9.1, run the following commands from the <INSTALL_DIR>/WMS/Migration/WMS/8.0folder:
 - When migrating from Releases 1.0, 2.0, 2.5, 8.0, or 8.5 to 9.1, run: \${ANT_HOME}/bin/ant -f ynwmigration.xml -Druntime.old=<YFS_HOME_OLD> -Druntime=<INSTALL_DIR> -Dtarget=update-application-version migrate -1 <logfile>
 - When migrating from Releases 2.5.1, 7.3 or 7.5 to 9.1, run:
 - \${ANT HOME}/bin/ant -f ynwmigration.xml -Druntime.old=<YFS HOME OLD>
 - -Druntime=<INSTALL DIR> -DYANTRA HOME.OLD=<YANTRA HOME OLD>
 - -Dtarget=update-application-version migrate -1 <logfile>

These commands perform the following tasks:

a. Execute the changes in the factory setup XMLs.

Note: The factory setup upgrade is not executed in the activator mode. Therefore, the event handlers and pipeline conditions are not overridden.

- b. Execute the following tasks:
 - apply-fc-setup
 - pre-transaction-migration
 - migrate-transaction-data
 - post-transaction-migration
 - update-application-version
- c. After the tasks are completed, search for all the *.restart files under the following directories:
 - 8.5/database/FactorySetup/XMLS/ynw
 - 8.0/database/FactorySetup/XMLS/ynw
 - 7.5/database/FactorySetup/XMLS/ynw
 - 7.3/database/FactorySetup/ynw
 - 2.5.1/database/FactorySetup/ynw
 - 2.5/database/FactorySetup/ynw
 - 2.0/database/FactorySetup/XMLS/ynw
 - 1.0/database/FactorySetup/XMLS/ynw
- d. Ensure that Completed="Y" for all the tasks.

If Completed="Y", the upgrade tasks are successfully completed. If Completed="N" for any task, contact Selling and Fulfillment Foundation Technical Support with all the restart files and log files. Do not proceed with the upgrade.

- e. Create the following *.done files in the 8.5/status folder:
 - $\hbox{\bf .} transaction_ant_migration.xml.done$
 - transaction ant postmigration.xml.done
 - transaction ant premigration.xml.done
 - transaction ant upgradepreparation.xml.done
 - transaction ant validation.xml.done
 - transaction_ant_ynwapplyfcsetup.xml.done
 - transaction_ant_applicationversion.xml.done

If you are upgrading from previous release to 9.1, the same *.done files will be created in the status folder of each release up to 8.5.

For example, if you are upgrading from 2.5, the *.done files will be available in the status folder of Releases 2.5, 2.5.1, 7.3, 7.5 and 8.5.

- 3. To clean up all the *.restart and *.done files before restarting the upgrade, run the following commands:
 - When migrating from Releases 1.0, 2.0, 2.5, 8.0 or 8.5 to 9.1, run: \${ANT HOME}/bin/ant -f ynwmigration.xml -Druntime.old=<YFS HOME OLD> -Druntime=<INSTALL DIR> -Dtarget=clean-up-for-rerun migrate
 - When migrating from Releases 2.5.1, 7.3 or 7.5 to 9.1, run: \${ANT HOME}/bin/ant -f ynwmigration.xml -Druntime.old=<YFS HOME OLD> -Druntime=<INSTALL_DIR> -DYANTRA_HOME.OLD=<YANTRA_HOME_OLD> -Dtarget=clean-up-for-rerun migrate

Run Upgrade Using NFS Mounting

Although it is recommended that you run the upgrade from the database server instead of the application server to avoid significant network overhead, you have the option of using NFS mounting. By using NFS mounting you can avoid installing the complete Selling and Fulfillment Foundation suite on the database server.

About this task

To use NFS mounting:

Procedure

- 1. Create a user on the database server with the same UID and GID as the user who installed the Selling and Fulfillment Foundation on your application server. This user should preferably have the same user name. For example, if the UNIX user used for installing and running Sterling Warehouse Management System, Release 9.1 is "Sterlite" with a UID of 5001 and GID of 101, the user that you create on the database server must have a UID of 5001 and GID of 101, and should preferably be named "Sterlite".
- 2. Share the <INSTALL DIR> directory on the application server.
- 3. Mount the <INSTALL DIR> with the same path on the database server. For example, if your <INSTALL_DIR> is /apps/yantra on the application server, mount it as /apps/yantra on the database server.
- 4. Share the <JAVA_HOME> directory that you are using for the Selling and Fulfillment Foundation from the application server. Because you might have multiple Java versions installed on the application server for various reasons, exercise caution and share the same <JAVA_HOME> that you are using for the Selling and Fulfillment Foundation.
- 5. Mount the <JAVA_HOME> directory with the same path on the database server, for example, if your <JAVA_HOME> was /apps/java on the application server, mount it as /apps/java on the database server.

Note: NFS mount only the <INSTALL DIR>and <JAVA_HOME> directories. Do not NFS mount other components, especially the database files. NFS mounting is not a good option for write-intensive applications it drastically impacts database performance.

6. Log in as the Selling and Fulfillment Foundation Administrator on the database server.

Chapter 3. Upgrading Sterling Warehouse Management System: Business Intelligence

Upgrading Sterling Warehouse Management System: Business Intelligence

The following topics explain how to upgrade to Sterling Warehouse Management System: Business Intelligence reports 9.1 from the previous versions.

Prerequisites

You should have completed the upgrade to Sterling Warehouse Management System, Release 9.1.

General Changes

The following changes have been made for the Sterling Warehouse Management System, Release 9.1:

- The Sterling Warehouse Management System: Business Intelligence 9.1 is certified on Cognos BI server 10.1.1.
- All reports, packages, models, and deployments have been migrated to Cognos BI server 10.1.1.
- Reports extended by you should be upgraded to Cognos BI server 10.1.1.
- From Release 8.5 onwards, the Sterling Warehouse Management System is hosted either on a single schema or multischema. However, on upgrading versions prior to Release 8.5, the Sterling Warehouse Management System will be hosted on a single schema.

Data Sources

For releases prior to 8.5, as the Sterling Warehouse Management System was hosted on a single database schema, the database views and tables in the Sterling Warehouse Management System: Business Intelligence were modelled under a single data source. Also, the data source was named either as yantra (Yantra 7.x) or as wms (Sterling Warehouse Management System, 8.0).

As part of Sterling Warehouse Management System: Business Intelligence 8.5 release, the database views and tables are remodelled under the following four data sources that can be further parameterized:

- wms-meta
- wms-configuration-default
- · wms-master-default
- wms-transaction-default

If the Sterling Warehouse Management System is hosted on a single database schema, on upgrading to Release 9.1, all the four data sources point to same database schema. For more information about data sources, refer to the *Sterling Warehouse Management System: Business Intelligence Guide*.

Upgrading to Sterling Warehouse Management System: Business Intelligence 9.1

To upgrade to Sterling Warehouse Management System: Business Intelligence 9.1, you should choose the appropriate scenario from the list provided here.

- If you have Extended the Model and Reports
- If you have Extended the Reports and not the Model
- If you have not Extended the Model and Reports

If you have Extended the Model and Reports Before you begin

Note: In Sterling Warehouse Management System: Business Intelligence, Release 8.5, changes have been made to the Analytics Data Model in order to support Multischema onboarding. Therefore, if you have extended the Analytics Data Model in versions earlier to 8.5, it may not be compatible with the current version of the Analytics Data Model Release 8.5 or Release 9.1. Thus, after upgrading, you must redo the extension of the Analytics Data Model.

Procedure

- 1. Upgrade to Cognos[®] Business Intelligence Server 10.1.1. For more information about upgrading to Cognos Business Intelligence Server 10.1.1 from Cognos 7x, refer the Cognos 10 Business Intelligence Installation and Configuration Guide.
- 2. Take a backup of the existing packages, and delete them. When you delete the existing packages, you lose the extension changes, and must redo them after upgrade.
- 3. Install Sterling Warehouse Management System: Business Intelligence 9.1. Ensure that the new installation directory is different from the old Analytics installation directory.
 - The new installation directory will be YNW ANALYTICS HOME. Refer to the old Analytics Installation directory as OLD_YNW_ANALYTICS_HOME.
- 4. Deploy Sterling Warehouse Management System: Business Intelligence 9.1. After deploying, you will see the WMS-Analytics package in the Cognos Content Manager.
- 5. Redo the Analytics Data Model extension. For more information about extending the Analytics Data Model, refer to the Sterling Warehouse Management System: Business Intelligence Guide.

If you have Extended the Reports and not the Model

- 1. If you are upgrading from Sterling Warehouse Management System, Release 7.x, refer to "Upgrading from Sterling Warehouse Management System, Release 7.x to Sterling Warehouse Management System, Release 9.1. - Case 1" on page 13, else refer to "Upgrade from Sterling Warehouse Management System, Release 8.0 to Sterling Warehouse Management System, Release 9.1." on page 15.
- 1. If you are upgrading from Sterling Warehouse Management System, Release 8.0, refer to "Upgrade from Sterling Warehouse Management System, Release 8.0 to Sterling Warehouse Management System, Release 9.1." on page 15.

1. If you are upgrading from Sterling Warehouse Management System, Release 8.5, refer "Upgrade from Sterling Warehouse Management System, Release 8.5 to Sterling Warehouse Management System, Release 9.1." on page 15.

Upgrading from Sterling Warehouse Management System, Release 7.x to Sterling Warehouse Management System, Release 9.1. - Case 1

Before you begin

If you have extended only the reports (not the model) without following the procedure explained in the Sterling Warehouse Management System: Business Intelligence Guide, perform the steps provided here in order to upgrade.

About this task

Steps to Upgrade

Procedure

1. Upgrade to Cognos Business Intelligence Server 10.1.1.

For more information about upgrading to Cognos Business Intelligence Server 10.1.1, refer to the *Cognos 10 Business Intelligence Installation and Configuration Guide*.

Note: The new analytics installation directory will be YNW_ANALYTICS_HOME. Refer to the old Analytics Installation directory as OLD_YNW_ANALYTICS_HOME. Ensure that the YNW_ANALYTICS_HOME directory points to the new Analytics installation, and the OLD_YNW_ANALYTICS_HOME directory points to the Older Analytics installation.

- 2. Extended reports should be upgraded to Cognos BI server 10.1.1 using Report Studio. Ensure that all the extended reports are locally saved in the OLD YNW ANALYTICS HOME/reports directory.
- 3. Install Sterling Warehouse Management System: Business Intelligence 9.1. For information about installing the Sterling Analytics 9.1, refer to the *Sterling Warehouse Management System: Business Intelligence Guide*.
- 4. Deploy the Sterling Warehouse Management System Analytics 9.1. At the end of this exercise there will be two packages in the Content Manager:
 - nWMS-Analytics (existing)
 - WMS-Analytics (new)

Upgrading the Extended Reports: Procedure

- 1. Create a new folder reports_extn in YNW_ANALYTICS_HOME. Copy all the extended reports from the OLD_YNW_ANALYTICS_HOME/reports folder to this new folder. Only extended reports should be copied.
- 2. Open Report Studio for the WMS-Analytics package. Open each one of these extended reports from the reports_extn folder and save them under WMS-Analytics package and a new folder WMS_extn. Also, locally save these reports under the reports_extn folder inside YNW_ANALYTICS_HOME.

Change the package name of these reports from nWMS-Analytics to WMS-Analytics. This can be done by navigating to Report Studio > File > Report Packages and selecting WMS-Analytics.

Note that performing this step changes the package name from nWMS-Analytics to WMS-Analytics in the report XMLs.

- 3. Ensure that all the extended reports are saved in the new WMS-Analytics package. (You can now delete the nWMS-Analytics package from Cognos Content Manager.) Now Cognos Content Manager will have one package with two folders:
 - WMS-Analytics/WMS, containing the out-of-the-box reports
 - WMS-Analytics/WMS_extn, containing the extended reports

Upgrading from Sterling Warehouse Management System, Release 7.x to Sterling Warehouse Management System, Release 9.1. - Case 2

Before you begin

If you have extended only the reports (not the model) as per the procedure explained in the Sterling Warehouse Management System: Business Intelligence Guide, perform the steps described here.

About this task

Steps to Upgrade

Procedure

- 1. Upgrade to Cognos Business Intelligence Server 10.1.1.
- 2. For more information about upgrading to Cognos Business Intelligence Server 10.1.1, refer to the Cognos 10 Business Intelligence Installation and Configuration Guide.

Note: The new analytics installation directory will be YNW ANALYTICS HOME. Refer to the old Analytics Installation directory as OLD YNW ANALYTICS HOME. Ensure that the YNW_ANALYTICS_HOME directory points to the new Analytics installation, and the OLD_YNW_ANALYTICS_HOME directory points to the Older Analytics installation.

- 3. Extended reports should be upgraded to Cognos BI server 10.1.1 using Report Studio. Ensure that all the extended reports are locally saved in the OLD_YNW_ANALYTICS_HOME/reports_ext directory.
- 4. Install Sterling Warehouse Management System Analytics 9.1. For information about installing the Sterling Analytics 9.1, refer to the Sterling Warehouse Management System: Business Intelligence Guide.
- 5. Deploy the Sterling Warehouse Management System Analytics 9.1. At the end of this exercise there will be two packages in the Content Manager:
 - nWMS-Analytics (existing) this package contains the nWMS-Analytics/ WMS and the nWMS-Analytics/WMS_extn folders.
 - WMS-Analytics (new)

Case 2: Upgrading the Extended Reports: **Procedure**

- 1. Copy the reports_extn folder from OLD YNW ANALYTICS HOME to YNW ANALYTICS HOME.
- 2. Open Report Studio for the WMS-Analytics package. Open each one of these extended reports from the YNW_ANALYTICS_HOME/reports_extn folder and save them under WMS-Analytics package and a new folder WMS_extn. Also, locally save these reports under the reports extn folder inside YNW ANALYTICS HOME.

Change the package name of these reports from nWMS-Analytics to WMS-Analytics. This can be done by navigating to Report Studio > File > Report Packages and selecting WMS-Analytics.

Note that performing this step changes the package name from nWMS-Analytics to WMS-Analytics in the report XMLs.

- 3. Ensure that all the extended reports are saved in the new WMS-Analytics package. (You can now delete the nWMS-Analytics package from Cognos Content Manager.) Now Cognos Content Manager will have one package with two folders:
 - WMS-Analytics/WMS, containing the out-of-the-box reports
 - WMS-Analytics/WMS_extn, containing the extended reports

Upgrade from Sterling Warehouse Management System, Release 8.0 to Sterling Warehouse Management System, Release 9.1. About this task

Steps to Upgrade

Procedure

1. Upgrade to Cognos Business Intelligence Server 10.1.1.

For more information about upgrading to Cognos Business Intelligence Server 10.1.1, refer to the *Cognos 10 Business Intelligence Installation and Configuration Guide*.

Note: It is assumed that the reports are extended as per the procedure explained in the Sterling Warehouse Management System: Business Intelligence Guide. The new installation directory will be YNW_ANALYTICS_HOME. Refer to the old Analytics Installation directory as OLD_YNW_ANALYTICS_HOME. Ensure that the YNW_ANALYTICS_HOME directory points to the new Analytics installation, and the OLD_YNW_ANALYTICS_HOME directory points to the Older Analytics installation.

- 2. Install Sterling Warehouse Management System Analytics 9.1. For more information about installing the Sterling Analytics 9.1, refer to the *Sterling Warehouse Management System: Business Intelligence Guide*.
- 3. Deploy the Sterling Warehouse Management System Analytics 9.1. At the end of this exercise the WMS-Analytics package will contain the latest changes in the Content Manager.
- 4. Copy reports_extn folder from OLD_YNW_ANALYTICS_HOME to YNW_ANALYTICS_HOME. At the end of this exercise, the package structure of WMS-Analytics will be as follows:
 - WMS-Analytics/WMS, containing the latest out-of-the-box reports
 - WMS-Analytics/WMS_extn, containing the extended reports

Upgrade from Sterling Warehouse Management System, Release 8.5 to Sterling Warehouse Management System, Release 9.1. About this task

Steps to Upgrade

Procedure

1. Upgrade to Cognos Business Intelligence Server 10.1.1.

For more information about upgrading to Cognos Business Intelligence Server 10.1.1, refer to the Cognos 10 Business Intelligence Installation and Configuration Guide.

Note: It is assumed that the reports are extended as per the procedure explained in the Sterling Warehouse Management System: Business Intelligence Guide. The new installation directory will be YNW_ANALYTICS_HOME. Refer to the old Analytics Installation directory as OLD_YNW_ANALYTICS_HOME. Ensure that the YNW_ANALYTICS_HOME directory points to the new Analytics installation, and the OLD_YNW_ANALYTICS_HOME directory points to the Older Analytics installation.

- 2. Install Sterling Warehouse Management System Analytics 9.1. For more information about installing the Sterling Analytics 9.1, refer to the *Sterling* Warehouse Management System: Business Intelligence Guide.
- 3. Deploy the Sterling Warehouse Management System Analytics 9.1. At the end of this exercise the WMS-Analytics package will contain the latest changes in the Content Manager.
- 4. Copy reports extn folder from OLD YNW ANALYTICS HOME to YNW ANALYTICS HOME. At the end of this exercise, the package structure of WMS-Analytics will be as follows:
 - WMS-Analytics/WMS, containing the latest out-of-the-box reports
 - WMS-Analytics/WMS_extn, containing the extended reports

Upgrade from Sterling Warehouse Management System, Release 9.0 to Sterling Warehouse Management System, Release 9.1. About this task

Steps to Upgrade

Procedure

1. Upgrade to Cognos Business Intelligence Server 10.1.1. For more information about upgrading to Cognos Business Intelligence Server 10.1.1, refer to the Cognos 10 Business Intelligence Installation and Configuration Guide.

Note: It is assumed that the reports are extended as per the procedure explained in the Sterling Warehouse Management System: Business Intelligence Guide. The new installation directory will be YNW ANALYTICS HOME. Refer to the old Analytics Installation directory as OLD_YNW_ANALYTICS_HOME. Ensure that the YNW_ANALYTICS_HOME directory points to the new Analytics installation, and the OLD YNW ANALYTICS HOME directory points to the Older Analytics installation.

- 2. Install Sterling Warehouse Management System Analytics 9.1. For more information about installing the Sterling Analytics 9.1, refer to the Sterling Warehouse Management System: Business Intelligence Guide.
- 3. Deploy the Sterling Warehouse Management System Analytics 9.1. At the end of this exercise the WMS-Analytics package will contain the latest changes in the Content Manager.
- 4. Copy reports_extn folder from OLD YNW ANALYTICS HOME to YNW ANALYTICS HOME. At the end of this exercise, the package structure of WMS-Analytics will be as follows:
 - WMS-Analytics/WMS, containing the latest out-of-the-box reports
 - WMS-Analytics/WMS_extn, containing the extended reports

If you have not Extended the Model and Reports

- 1. If you are upgrading from Sterling Warehouse Management System, Release 7.x, refer to "Upgrade from Sterling Warehouse Management System, Release 7.x to Sterling Warehouse Management System, Release 9.1.," else refer to "Upgrade from Sterling Warehouse Management System, Release 8.0 to Sterling Warehouse Management System, Release 9.1."
- 2. If you are upgrading from Sterling Warehouse Management System, Release 8.0 to Sterling Warehouse Management System Release 9.1, refer to "Upgrade from Sterling Warehouse Management System, Release 8.0 to Sterling Warehouse Management System, Release 9.1." on page 15
- 3. If you are upgrading from Sterling Warehouse Management System, Release 8.5 to Sterling Warehouse Management System Release 9.1, refer to "Upgrade from Sterling Warehouse Management System, Release 8.5 to Sterling Warehouse Management System, Release 9.1." on page 15.

Upgrade from Sterling Warehouse Management System, Release 7.x to Sterling Warehouse Management System, Release 9.1. Before you begin

If you have not extended the model and reports, Cognos Content Manager will have only the nWMS-Analytics package.

About this task

Steps to Upgrade:

Procedure

- 1. Upgrade to Cognos Business Intelligence Server 10.1.1. For more information about upgrading to Cognos Business Intelligence Server 10.1.1 from Cognos 7x, refer to the *Cognos 10 Business Intelligence Installation and Configuration Guide*.
- 2. Install Sterling Warehouse Management System Analytics 9.1. For information about installing the Sterling Analytics 9.1, refer to the *Sterling Warehouse Management System: Business Intelligence Guide*.
- 3. After installation, the new installation directory will be YNW_ANALYTICS_HOME.
- 4. Deploy the Sterling Warehouse Management System Analytics 9.1. At the end of this exercise there will be two packages in the Content Manager:
 - nWMS-Analytics (existing)
 - WMS-Analytics (new)
- 5. Delete the nWMS-Analytics package.

Upgrade from Sterling Warehouse Management System, Release 8.0 to Sterling Warehouse Management System, Release 9.1. Before you begin

If you have not extended the model and reports, Cognos Content Manager will have only the WMS-Analytics package.

About this task

Steps to Upgrade

Procedure

- 1. Upgrade to Cognos Business Intelligence Server 10.1.1. .

 For more information about upgrading to Cognos Business Intelligence Server 10.1.1 refer to the Cognos 10 Business Intelligence Installation and Configuration
 - 10.1.1, refer to the Cognos 10 Business Intelligence Installation and Configuration Guide.
- 2. Install Sterling Warehouse Management System Analytics 9.1. For information about installing the Sterling Analytics 9.1, refer to the *Sterling Warehouse Management System: Business Intelligence Guide*.
- 3. After installation, the new installation directory will be YNW_ANALYTICS_HOME.
- 4. Deploy the Sterling Warehouse Management System Analytics 9.1. At the end of this exercise, the WMS-Analytics package will contain the latest changes in the Content Manager.

Upgrade from Sterling Warehouse Management System, Release 8.5 to Sterling Warehouse Management System, Release 9.1. About this task

Steps to Upgrade

Procedure

1. Upgrade to Cognos Business Intelligence Server 10.1.1.

For more information about upgrading to Cognos Business Intelligence Server 10.1.1, refer to the *Cognos 10 Business Intelligence Installation and Configuration Guide*.

Note: It is assumed that the reports are extended as per the procedure explained in the Sterling Warehouse Management System: Business Intelligence Guide. The new installation directory will be YNW_ANALYTICS_HOME. Refer to the old Analytics Installation directory as OLD_YNW_ANALYTICS_HOME. Ensure that the YNW_ANALYTICS_HOME directory points to the new Analytics installation, and the OLD_YNW_ANALYTICS_HOME directory points to the Older Analytics installation.

- 2. Install Sterling Warehouse Management System Analytics 9.1. For more information about installing the Sterling Analytics 9.1, refer to the *Sterling Warehouse Management System: Business Intelligence Guide*.
- 3. Deploy the Sterling Warehouse Management System Analytics 9.1. At the end of this exercise the WMS-Analytics package will contain the latest changes in the Content Manager.
- 4. Copy reports_extn folder from OLD_YNW_ANALYTICS_HOME to YNW_ANALYTICS_HOME. At the end of this exercise, the package structure of WMS-Analytics will be as follows:
 - WMS-Analytics/WMS, containing the latest out-of-the-box reports
 - WMS-Analytics/WMS_extn, containing the extended reports

Upgrade from Sterling Warehouse Management System, Release 9.0 to Sterling Warehouse Management System, Release 9.1. About this task

Steps to Upgrade

Procedure

1. Upgrade to Cognos Business Intelligence Server 10.1.1.

For more information about upgrading to Cognos Business Intelligence Server 10.1.1, refer to the *Cognos 10 Business Intelligence Installation and Configuration Guide*.

Note: It is assumed that the reports are extended as per the procedure explained in the Sterling Warehouse Management System: Business Intelligence Guide. The new installation directory will be YNW_ANALYTICS_HOME. Refer to the old Analytics Installation directory as OLD_YNW_ANALYTICS_HOME. Ensure that the YNW_ANALYTICS_HOME directory points to the new Analytics installation, and the OLD_YNW_ANALYTICS_HOME directory points to the Older Analytics installation.

- 2. Install Sterling Warehouse Management System Analytics 9.1. For more information about installing the Sterling Analytics 9.1, refer to the *Sterling Warehouse Management System: Business Intelligence Guide*.
- 3. Deploy the Sterling Warehouse Management System Analytics 9.1. At the end of this exercise the WMS-Analytics package will contain the latest changes in the Content Manager.
- 4. Copy reports_extn folder from OLD_YNW_ANALYTICS_HOME to YNW_ANALYTICS_HOME. At the end of this exercise, the package structure of WMS-Analytics will be as follows:
 - WMS-Analytics/WMS, containing the latest out-of-the-box reports
 - WMS-Analytics/WMS_extn, containing the extended reports

Index

Ī

installing Release 2.5.1 5

M

migrating alter scripts 3 migrating estimates 3

S

system requirements 1

U

upgrading custom components 4 upgrading to release 2.5.1 6 upgrading to Yantra 7x, Release 7.7 5 user interface 2

Y

Yantra 7x nWMS - Distribution PCA 6 Yantra 7x nWMS - Distribution PCA Add-in 6

Notices

This information was developed for products and services offered in the U.S.A.

IBM may not offer the products, services, or features discussed in this document in other countries and regions. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not grant you any license to these patents. You can send license inquiries, in writing, to:

IBM Director of Licensing

IBM Corporation

North Castle Drive

Armonk, NY 10504-1785

U.S.A.

For license inquiries regarding double-byte character set (DBCS) information, contact the IBM Intellectual Property Department in your country or region or send inquiries, in writing, to:

Intellectual Property Licensing

Legal and Intellectual Property Law

IBM Japan Ltd.

1623-14, Shimotsuruma, Yamato-shi

Kanagawa 242-8502 Japan

The following paragraph does not apply to the United Kingdom or any other country or region where such provisions are inconsistent with local law: INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some states do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be

incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

Any references in this information to non-IBM Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this IBM product and use of those Web sites is at your own risk.

IBM may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

Licensees of this program who wish to have information about it for the purpose of enabling: (i) the exchange of information between independently created programs and other programs (including this one) and (ii) the mutual use of the information which has been exchanged, should contact:

IBM Corporation

J46A/G4

555 Bailey Avenue

San Jose, CA 95141-1003

U.S.A.

Such information may be available, subject to appropriate terms and conditions, including in some cases, payment of a fee.

The licensed program described in this document and all licensed material available for it are provided by IBM under terms of the IBM Customer Agreement, IBM International Program License Agreement or any equivalent agreement between us.

Any performance data contained herein was determined in a controlled environment. Therefore, the results obtained in other operating environments may vary significantly. Some measurements may have been made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurements may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.

All statements regarding IBM's future direction or intent are subject to change or withdrawal without notice, and represent goals and objectives only.

All IBM prices shown are IBM's suggested retail prices, are current and are subject to change without notice. Dealer prices may vary.

This information is for planning purposes only. The information herein is subject to change before the products described become available.

This information contains examples of data and reports used in daily business operations. To illustrate them as completely as possible, the examples include the names of individuals, companies, brands, and products. All of these names are fictitious and any similarity to the names and addresses used by an actual business enterprise is entirely coincidental.

COPYRIGHT LICENSE:

This information contains sample application programs in source language, which illustrate programming techniques on various operating platforms. You may copy, modify, and distribute these sample programs in any form without payment to IBM, for the purposes of developing, using, marketing or distributing application programs conforming to the application programming interface for the operating platform for which the sample programs are written. These examples have not been thoroughly tested under all conditions. IBM, therefore, cannot guarantee or imply reliability, serviceability, or function of these programs. The sample programs are provided "AS IS", without warranty of any kind. IBM shall not be liable for any damages arising out of your use of the sample programs.

Each copy or any portion of these sample programs or any derivative work, must include a copyright notice as follows:

© IBM 2011. Portions of this code are derived from IBM Corp. Sample Programs. © Copyright IBM Corp. 2011.

If you are viewing this information softcopy, the photographs and color illustrations may not appear.

Trademarks

IBM, the IBM logo, and ibm.com are trademarks or registered trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the Web at "Copyright and trademark information" at http://www.ibm.com/legal/copytrade.shtml.

Adobe, the Adobe logo, PostScript, and the PostScript logo are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States, and/or other countries and regions.

IT Infrastructure Library is a registered trademark of the Central Computer and Telecommunications Agency which is now part of the Office of Government Commerce.

Intel, Intel logo, Intel Inside, Intel Inside logo, Intel Centrino, Intel Centrino logo, Celeron, Intel Xeon, Intel SpeedStep, Itanium, and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries and regions.

Linux is a registered trademark of Linus Torvalds in the United States, other countries and regions, or both.

Microsoft, Windows, Windows NT, and the Windows logo are trademarks of Microsoft Corporation in the United States, other countries and regions, or both.

ITIL is a registered trademark, and a registered community trademark of the Office of Government Commerce, and is registered in the U.S. Patent and Trademark Office.

UNIX is a registered trademark of The Open Group in the United States and other countries and regions.

Java and all Java-based trademarks and logos are trademarks or registered trademarks of Oracle and/or its affiliates.

Cell Broadband Engine is a trademark of Sony Computer Entertainment, Inc. in the United States, other countries and regions, or both and is used under license therefrom.

Linear Tape-Open, LTO, the LTO Logo, Ultrium and the Ultrium Logo are trademarks of HP, IBM Corp. and Quantum in the U.S. and other countries and regions.

Connect Control Center[®], Connect:Direct[®], Connect:Enterprise, Gentran[®], Gentran:Basic[®], Gentran:Control[®], Gentran:Director[®], Gentran:Plus[®], Gentran:Realtime[®], Gentran:Server[®], Gentran:Viewpoint[®], Sterling Commerce[™], Sterling Information Broker[®], and Sterling Integrator[®] are trademarks or registered trademarks of Sterling Commerce, Inc., an IBM Company.

Other company, product, and service names may be trademarks or service marks of others.

IBM

Printed in USA