DB2 Change Management on Multiplatforms: Modeling changes and deploying them with ease

DB2 Change Management Expert, V1.1
on Linux, Unix and Windows

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Agenda

1. DB2 Multiplatform Tools portfolio
2. Change management and the need for a compelling solution
3. Introducing DB2 Change Management Expert for Multiplatforms
4. How DB2 Change Management Expert can help
5. Using DB2 Change Management Expert
6. Supported environments
7. Learn more

DB2 Multiplatform Tools Portfolio

- Available today for DB2 Enterprise Server Edition:
  - **DB2 Change Management Expert**
  - ***DB2 Performance Expert**
  - **DB2 Recovery Expert**
  - ***DB2 High Performance Unload**
  - ***DB2 Test Database Generator**
  - ***DB2 Data Archive Expert**
  - ***DB2 Web Query Tool**
  - ***DB2 Table Editor**

  - **DB2 Toolkit for Multiplatforms**

**also available for DB2 z/OS*

Available for DB2 Workgroup Editions

Definition

Database Change Management – Managing relationships, dependencies, and side effects while making structural changes to the database

Introducing DB2 Change Management Expert

Solution: DB2 Change Management Expert, V1.1

Problem	Solution
Changes are tedious, time intensive, and error prone	**Model changes at a high-level**
Determining database relationships and dependences	**Visualize relationships, automatically manage relationships**
Inefficiency of your DBA staff	**Generate SQL, DB2 Commands, and Utility invocations**
Failing to recognize a schema change is dangerous to system integrity	**Validate data models, scripts and resources**
Tracking the lifestyle of structural changes made to DB2 database	**Integrate with Source Code Control Systems**

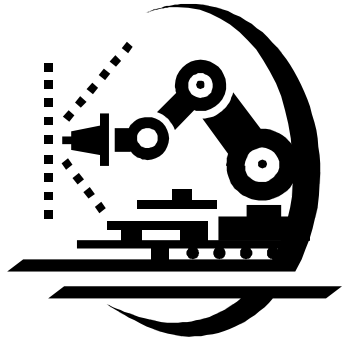
Visualizing the Data Model at a High-level

- Modeling Change is Easy
  - CME has a strong use of modeling and typing -- a true autonomic "Expert" tool
  - Model comparison editor facilitates impact or migration analysis
  - Understands schema relationships
  - Manipulates changes: creating, viewing, adding, deleting modifying
  - Models can be built and explored before execution
  - Reverse engineers database catalog metadata into models
  - Reduces human error by validating models, commands, and resources

Changing the Database Manually - It takes time to identify relationships, dependencies and side effects

Generating the Implementation from Models

- Generating Commands
  - Forward engineer delta DDL to change the database
  - Export/Import commands to preserve data
  - Rebind/Flush cache to preserve applications
  - RUNSTATS to refresh statistics
  - Grants to preserve authorizations
  - Supports “one-button” undo or schema, data, and dependencies
  - Commands can be customized



Changing the Database Manually - DDL, DCL, DB2 Commands and Utilities are tedious to write

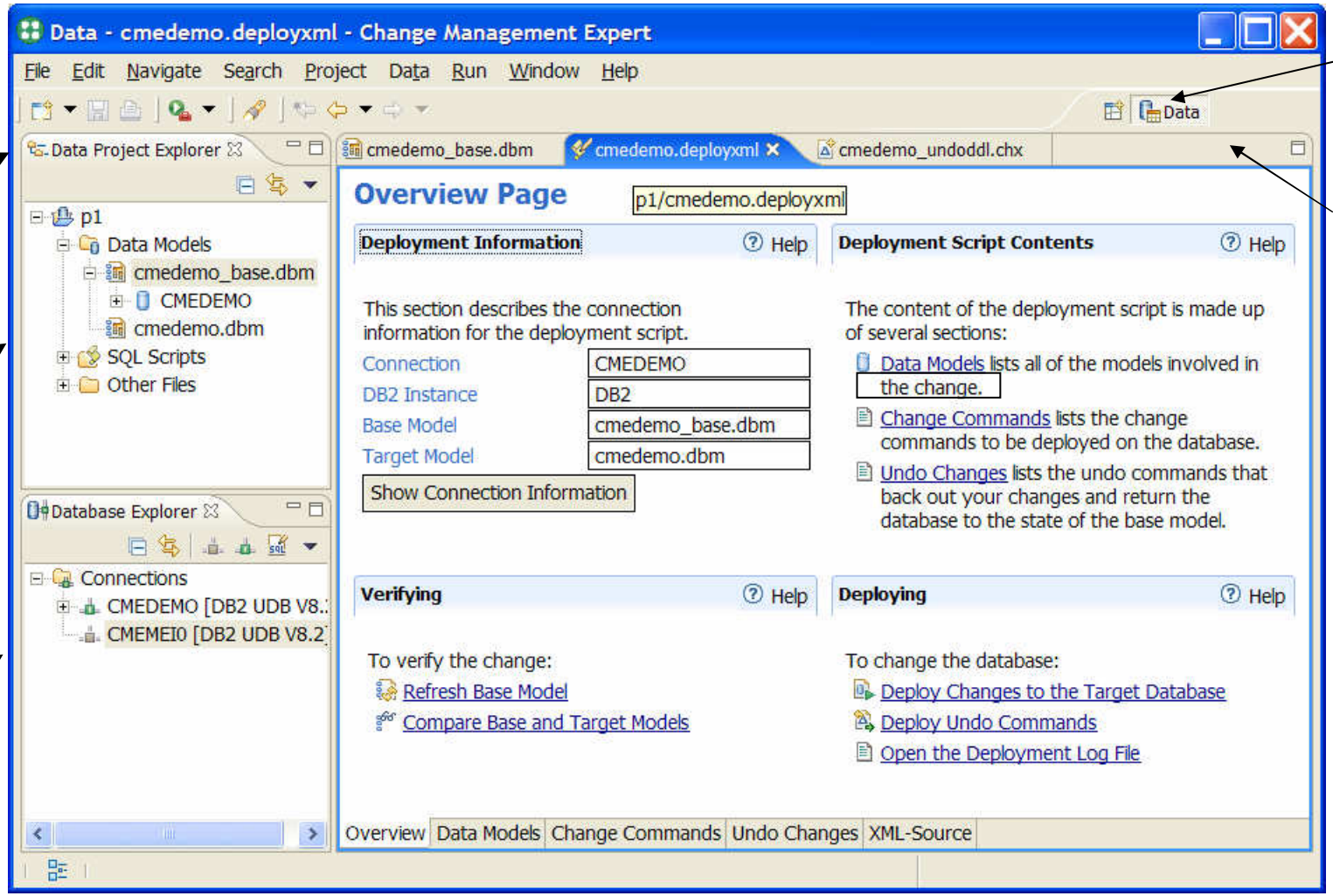
The Solution Customers Asked for

- Ease of Use
  - Easy to use, short learning curve, and substantial automation
  - Leads the DBA through the change details
  - Helps inexperienced DBAs with wizards and tutorials
  - Increases the efficiency of your DBA staff
- Fosters teamwork and provisioning
  - Adds synergy to large projects
  - Interfaces with source code control systems
  - Can share models, scripts, and projects with other IBM data tools (such as Rational Data Architect)

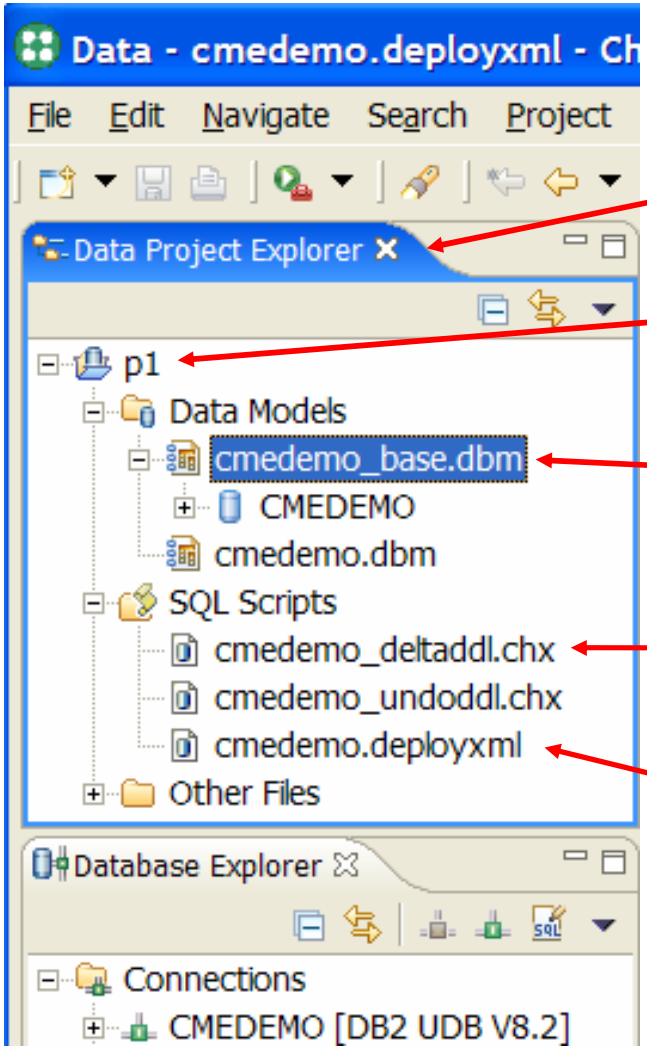
Database change management use cases

- Change In Place
- Migrate Change (from test to production)
- Undo Changes
- Audit Changes
- Collaborate on Changes

DB2 Change Management Expert - Integrated Development Environment



Change Management Resources



Data Project Explorer

Manage Data Projects

Change Management Project

Manage resources through Change Life Cycle

Database Physical Model –

(Representation parts the DB2 catalog)

Generated Change Commands

(Remote deployment of SQL, DDL, DML, DCL, Utilities, and DB2 Commands)

Deployment Script

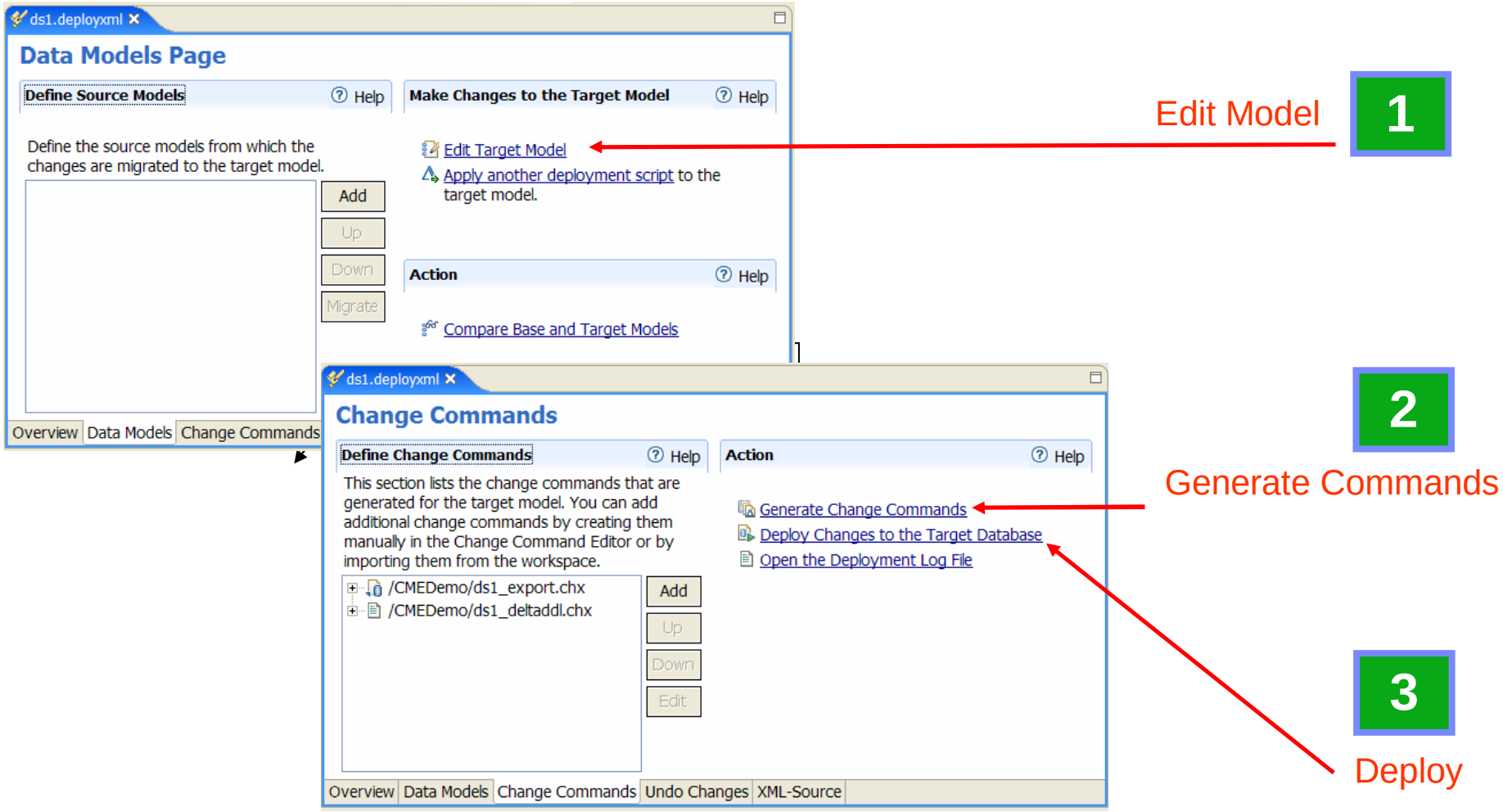
(Change Management Customization)

Database change management made simple - Steps for making a database change

1. Model Database Changes
2. Generate Change Commands
3. Deploy Change Commands

Deployment Script Editor - Organizes the change resources, streamlines the process and configures the change

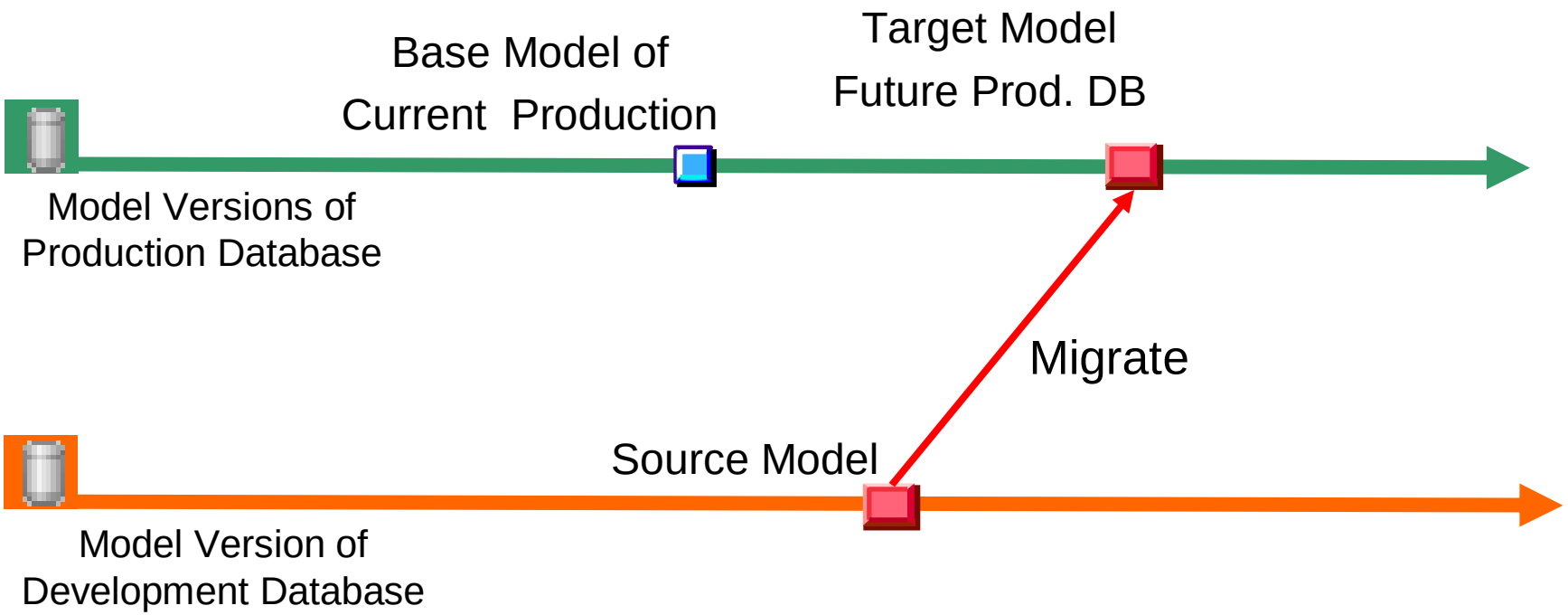
Process steps - Deployment Script Editor
Easiest way to start →Organizes Process



Database Change Management made simple

1. Model Database Changes
2. Generate Change Commands
3. Deploy Change Commands

1 Migrate Changes Between Models



Benefit - Increases application availability by assisting the DBA to analyze the impact of proposed changes prior to execution

1

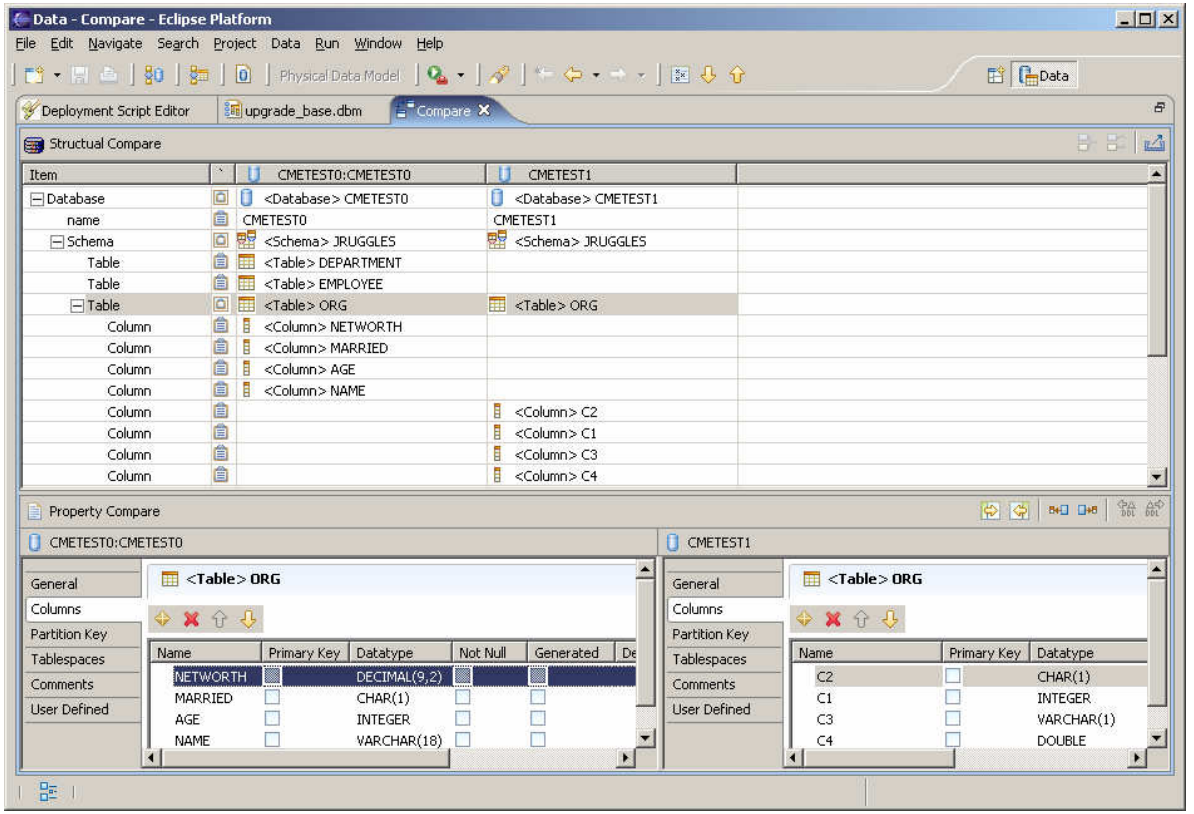
Model Database Change Features

- Data Model Editor
  - Linked Outline View
  - Linked Property View
  - Find/Replace
- Model Validation and Problem View
- Model Report and Relationship Dialog
- Physical Data Model Diagram Editor

Benefit - Comparison editor makes it easy to visualize differences between data models and database catalogs.

1 Comparing Data Models

- Comparing two environments (sets of objects) to determine where they differ.
- Modeling and validating data objects
- Analyzing the impact of a proposed change on a database.
- Migrating a set of objects or redefining the target objects to be like the source.



Database Change Management made simple

1. Model Database Changes
2. Generate Change Commands
3. Deploy Change Commands

2 Generate Change Command Features

- Delta DDL & Undo
  - CREATE
  - DROP
  - ALTER
- Data Preservation
  - IMPORT
  - EXPORT
- REBIND
- RUNSTATS
- Flush Cache
- GRANT

- Change Command Editor
  - SQL (DML, DDL, and DCL)
  - Import/export utility support
  - CREATE DATABASE command
- Outline View
  - Linked with editor
- Problems View
  - Identify syntax errors
  - Linked with editor
  - Suggest solutions

2 Change Command Editor

- **Change Command Editor**
  - SQL (DML, DDL, DCL
  - Import/export utility support
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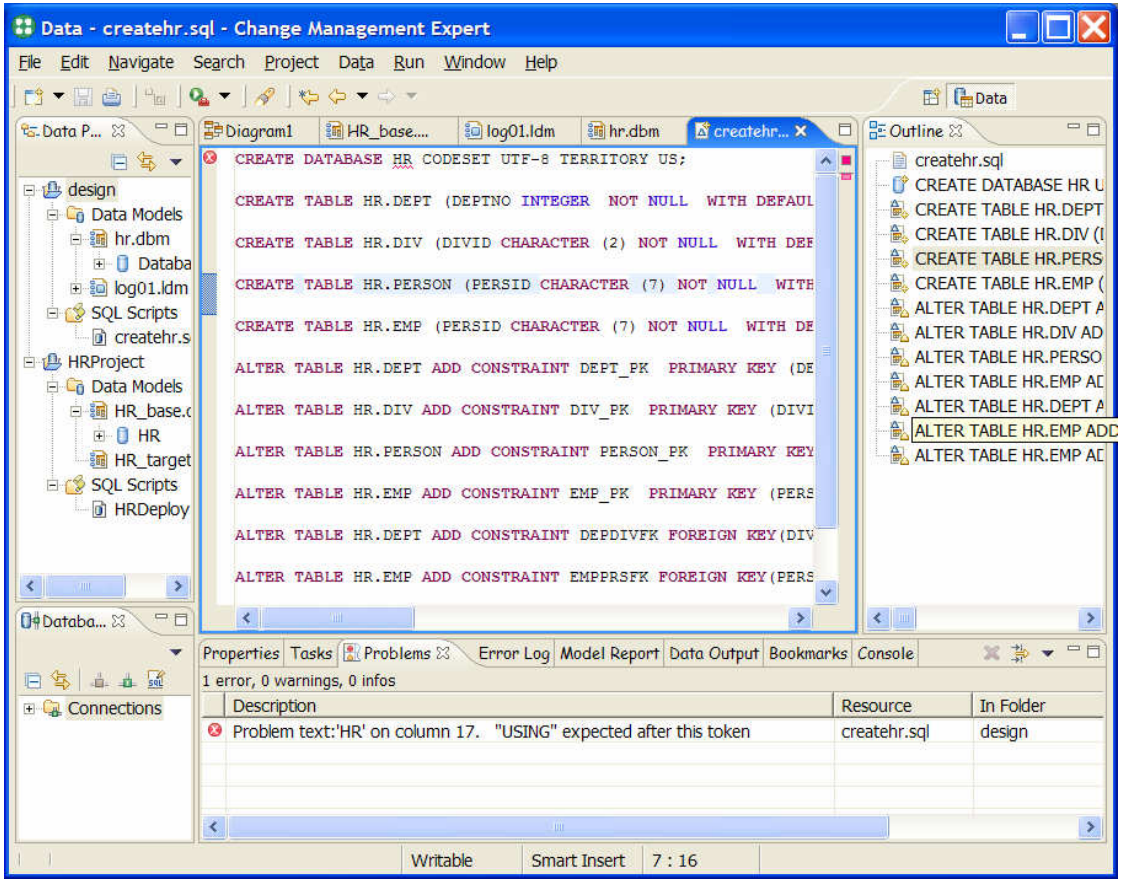


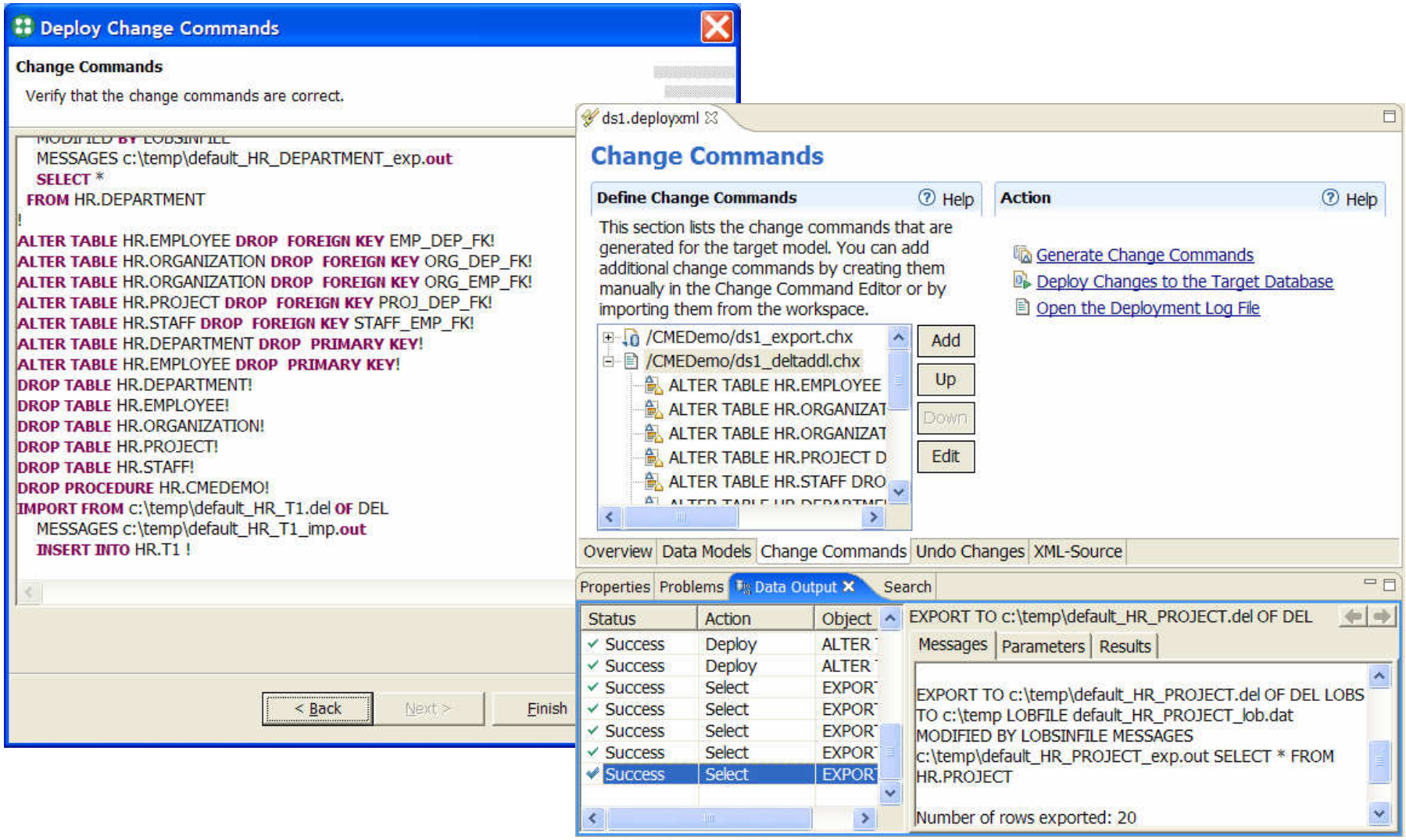
Database change management made simple

1. Model Database Changes
2. Generate Change Commands
3. Deploy Change Commands

3 Deploy change commands

- Change Command Deployment Wizard
  - Checks catalog and base line model
  - Shows commands before execution
- Data Output View
  - Deploy commands in the background
  - View status and return codes
  - Automatically log deployment

3 Deploy Change Commands



Supported environments

- DB2 Server environments
  - IBM DB2 V8 Fix Pack 7 or later
  - AIX(R) 5.2 (32-bit and 64-bit), AIX 5.3 (32-bit and 64-bit)
  - Windows 2000, Windows 2003, and Windows XP (all 32-bit)
  - Solaris V9 (32-bit and 64-bit), Solaris V10 (32-bit and 64-bit)
  - Linux on xSeries RH V3 and SUSE 8 (32-bit), Linux on pSeries RH V3 (64-bit), Linux on zSeries RH V3 and SUSE 9 (64-bit)

Client environments

- Hardware configuration
  - 1 GB RAM (4 GB is recommended)
  - 250 MB disk space (Product Installation)
  - 25 MB of free disk space (Workspace)
  - Windows 2000, Windows 2003, and Windows XP (all 32-bit)
  - Linux on xSeries (32-bit) (need to be root to install)
- Software configuration
  - Connectivity to Database Administration Server (DAS)
    - Locally installed DB2 database
    - DB2 UDB Administration Client (Linux has a few extra steps)
  - A Web browser (to view demonstrations of the product in the online documentation)

Highlights of Components

- Data Perspective
- Data Project Explorer
- Database Explorer
- Change Command Editor
- Data Model Editor
- Deployment Script Editor
- Comparison Editor
- Properties View
- Problems View
- Model Report View
- Data Output View
- Outline View
- Cheat Sheets (Making a change in place, Migrating Data Objects between Environments)
- Samples (Make a Change in Place, Migrating Data Objects between Environments)
- Wizards/Dialogs
  - Copy Database, New Change Management Project, New Change Commands, New Deployment Script, New Physical Data Model, New SQL Script, Generate Delta DDL, Generate DDL, Evaluate Path, Analyze Model, Analyze Impact, Apply DDL to Model, Run SQL, Edit DDL, New Foreign Key, Find/Replace, Search, Generate Change Commands, Deploy Change Commands, Undo Change Commands, Apply another deployment script, multiple provision change, reset deployment script, Refresh base model.

Next steps:

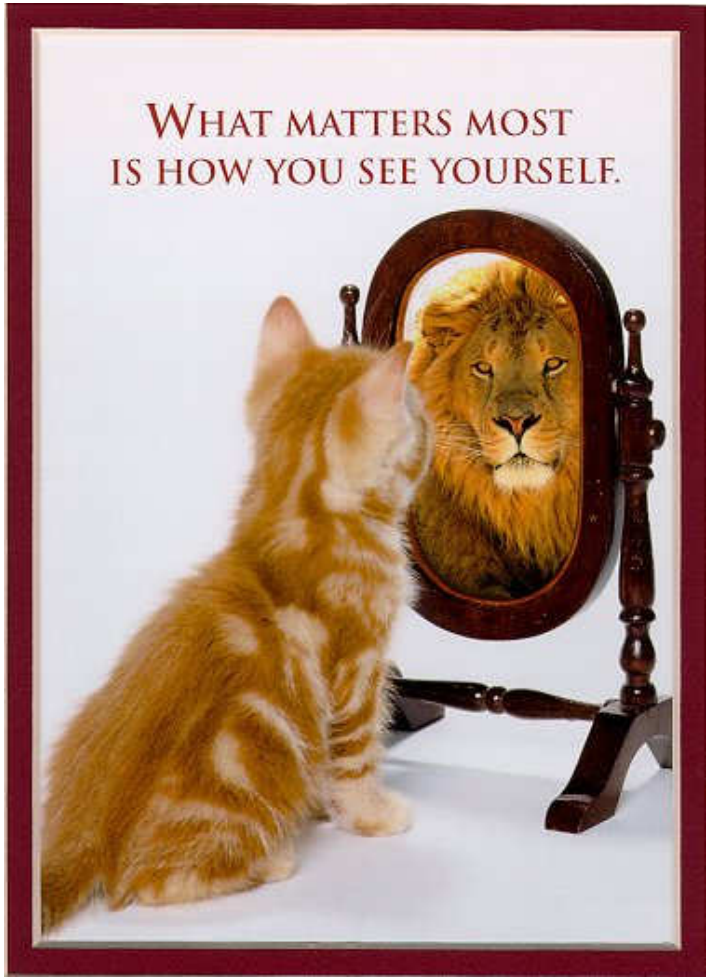
1. See the DB2 Change Management Expert Website:

   http://www.ibm.com/software/data/db2imstools/db2tools/db2cme/db2changemgtexpert-mp.html

2. See the Fact Sheet:

   ftp://ftp.software.ibm.com/software/data/db2imstools/db2tools/pdf/db2cmev1.pdf

3. Talk to your IBM sales representative or buy online.



Thank you!