



IBM'S Next Step for Managing DB2 Changes

Using the . . .

DB2 Administration and DB2 Object Comparison Tools

Baha Majid

DB2 Technical Sales Specialist – East Region

Information Management software



AGENDA

- Overview of DB2 Administration Tool / DB2 Object Comparison Tool
- Overview of the new Change Management process
 - REGISTER a change
 - ANALYZE a change
 - RUN a change
 - PROMOTE / IMPORT
 - REPORTS



DB2 ADMINISTRATION TOOL

- ✓ ISPF interface
- ✓ Supports DB2 z/OS
- ✓ Supports DB2 9

- Catalog Navigation
- Change Management
 - Complex Table Alters
 - Migration



DB2 OBJECT COMPARISON TOOL

- ✓ ISPF interface
- ✓ Supports DB2 z/OS
- ✓ Supports DB2 9
- ✓ Requires DB2 Administration Tool

- Compare structure of DB2 objects
 - Reports
 - Apply jobs = make target look like the source



CHANGE MANAGEMENT

- Based on **customer requirements**, IBM has developed a new change management process
- Some of the more significant requirements included the ability to
 - **Audit** who made changes
 - Provide the ability to **automate the backing out** of changes
 - Create file which consists of **only the changes**
 - **Promote** changes to another system
- To address these requirements, IBM has developed a **NEW** change management process
- In order to use this process, you must license both
 - DB2 Administration Tool
 - DB2 Object Comparison Tool



DB2 ADMINISTRATION TOOL

Change Management

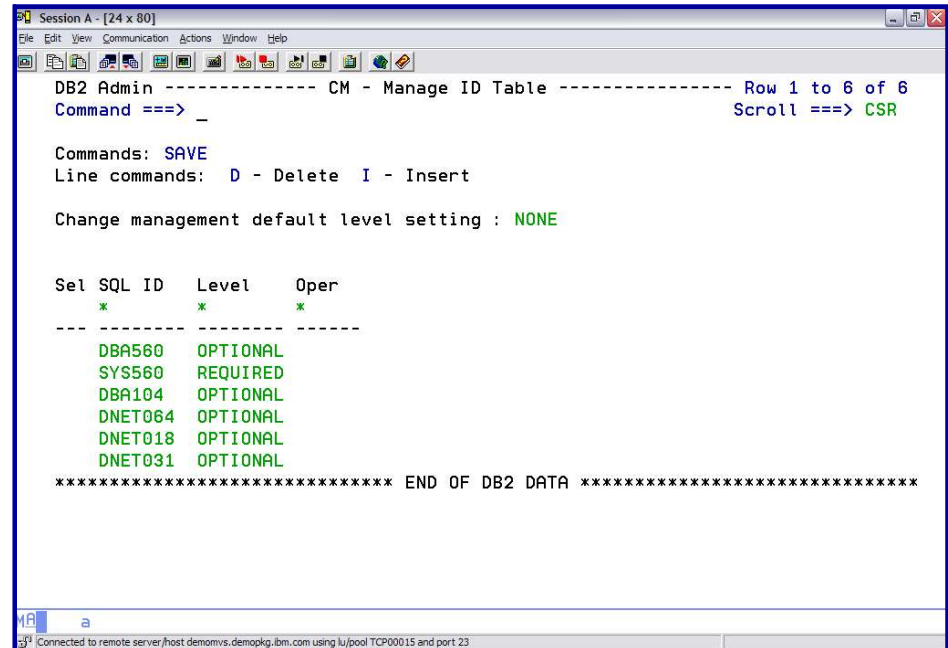
- Set of **processes** to manage changes to objects
- Assigns a **change ID** for every change
- **Registers** change information in the Change Management Data Base
- **Analyze** how a change affects existing objects
 - Warning of any pending changes → supersede or follow
- Allows for **'immediate'** and **'normal'** changes
- **Collaborative** change (virtual changes)
- **Change recovery**
- Facilitates **moving changes** to other systems (Promote / Import)
- Produces **reports on changes**



DB2 ADMINISTRATION TOOL

Change Management

- Change Management can be
 - **Required** – all changes must be registered
 - **Optional** - can be registered
 - **None** – not using change registration
- Controlled at the user id level
 - Populate the **ADBCID table**
 - Can use an ID for an application



```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
DB2 Admin ----- CM - Manage ID Table ----- Row 1 to 6 of 6
Command ==> _
Scroll ==> CSR

Commands: SAVE
Line commands: D - Delete I - Insert

Change management default level setting : NONE

Sel SQL ID Level Oper
 * * * * *
-----
DBA560 OPTIONAL
SYS560 REQUIRED
DBA104 OPTIONAL
DNET064 OPTIONAL
DNET018 OPTIONAL
DNET031 OPTIONAL
***** END OF DB2 DATA *****
  
```

DB2 ADMINISTRATION TOOLS

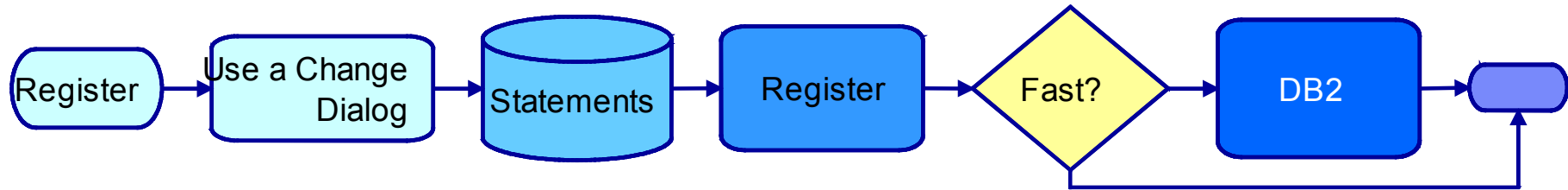
Change Management Processes

- **REGISTER** – modifications in Change Management Data Base
- **ANALYZE** – changes
- **RUN** – implements the change
- **RECOVER** – back out a change
- **PROMOTE** – a set of changes
- **IMPORT** - changes



DB2 ADMINISTRATION TOOL

STEP 1: REGISTER



- A dialog builds the statements to be registered as a change
- Register panel is presented
 - Change owner, name, comment
 - Delta version owner, name
- Register updates the Change information in the CM DB



DB2 ADMINISTRATION TOOL

Change Management REGISTER

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
DB2 Admin ----- DSNC Tables, Views, and Aliases ----- Row 1 to 6 of 6
Command ==> Scroll ==> CSR

Commands: GRANT MIG
Line commands:
C - Columns A - Auth L - List X - Indexes S - Table space D - Database
V - Views T - Tables P - Plans Y - Synonyms SEL - Select prototyping
? - Show all line commands

Sel  Name                Owner      T DB Name  TS Name  Co
-----
aLC  GLWTEMP                SSEMMWLH  T SSEMMWLH  GLWSEMP
      GLWTEMP                SSEMMWLS  T SSEMMWLS  GLWSEMP
      GLWTEMP                SSEMMWLT  T SSEMMWLT  GLWSEMP
      GLWTEMP                SSEMMWLX  T SSEMMWLX  GLWSEMP
      GLWTEMP                SSEMMWLZ  T SSEMMWLZ  GLWSEMP
      GLWTEMP                SSEMMWX   T SSEMMWX   GLWSEMP
***** END OF DB2 DATA *****

```

MA a
Connected to remote server/host demovs.demopkg.ibm.com using lu/pool TCP00015 and port 23

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
DB2 Admin ----- DSNC Alter -----
C
DB2 Admin ----- DSNC Change Management Prompt ----- 16:35

Change Management is optional for SQLID: DBA104

Do you wish to use Change Management for this function: _ (Yes/No)

```

MA a
Connected to remote server/host demovs.demopkg.ibm.com using lu/pool TCP00015 and port 23

**FOR USER DBA104, REGISTERING A
CHANGE IS OPTIONAL**

DB2 ADMINISTRATION TOOL

Change Management REGISTER

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
DB2 Admin ----- DSNCL ALTER Table ----- Row 1 to 8 of 19
Command ==> _                               Scroll ==> CSR

New owner ==> SSEMMWLH >                     Old owner : SSEMMWLH
New name ==> GLWTEMP >                       Old name : GLWTEMP
Volatile ==> NO      Action : NONE           New DB ==> SSEMMWLH
Rows/Page : 29.681  Partitions: 4           New TS ==> GLWSEMP
Commands : CONTINUE PRIMKEY ADD REL ALTPART
Line commands :
  I - Insert  U - Update  D - Delete  R - Repeat  LAB - Label  COM - Comment
  M - Move    A - After   B - Before X - Index  RES - Reset update

Select Column Name      Col No Col Type Length  Scale Null D Col No Type
-----
* * * * *
----->
EMP_NO      1  INTEGER      4      0 N  N  1
FIRSTNAME   2  VARCHAR     12      0 N  N  2
MIDINIT     3  CHAR         1      0 N  N  3
LASTNAME    4  VARCHAR     20      0 N  N  4

Related objects INDEXES=Y VIEWS=Y PLANS=N RIs=Y PACKAGES=Y TRIGGERS=Y

JOB         8  CHAR         12      0 Y  Y  8
    
```

Make changes

DB2 ADMINISTRATION TOOL

Change Management REGISTER

Message reminding user to update the related view

Session A - [24 x 80]

DB2 Admin ----- DSNCL ALTER Table ----- Row 1 to 8 of 20
 Command ==> Scroll ==> CSR

View DDL update required

New owner ==> SSEMMLH > Old owner : SSEMMLH
 New name ==> GLWTEMP > Old name : GLWTEMP
 Volatile ==> NO Action : NONE New DB ==> SSEMMLH
 Rows/Page : 27.675 Partitions: 4 New TS ==> GLWSEMP
 Commands : CONTINUE PRIMKEY ADD REL ALTPART

Line commands :
 I - Insert U - Update D - Delete R - Repeat LAB - Label COM - Comment
 M - Move A - After B - Before X - Index RES - Reset update

Select	Column Name	Col No	Col Type	Length	Scale	Null	D	Col No	Type	Old Operation
*		*	*	*	*	*	*	*	*	*
	EMP_NO	1	INTEGER	4	0	N	N	1		
	FIRSTNAME	2	VARCHAR	12	0	N	N	2		
	MIDINIT	3	CHAR	1	0	N	N	3		
	LASTNAME	4	VARCHAR	20	0	N	N	4		
	WORKDEPT	5	INTEGER	4	0	Y	Y	5		
	PHONENO	6	CHAR	4	0	N	N	6		
	HIREDATE	7	DATE	4	0	N	Y	7		
	term_DATE	8	DATE	4	0	N	Y	8		INSERT

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Add a new column

DB2 ADMINISTRATION TOOL

Change Management REGISTER

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
DB2 Admin ----- DSNC Alter Related : SSEMMWLH.GLWTEMP ---- Row 1 to 10 of 10
Command ==>
Scroll ==> CSR

Commands: ADDINDEX  ADDFK
Line commands: A - Alter object  S - Show object

S Type          Creator  Name          Dep.
*              *        *             Views Rel
-----
FOREIGN KEY     SSEMMWLH  GLWTDPT       0  GLWFB
FOREIGN KEY     SSEMMWLH  GLWTEPA       0  GLWFB
FOREIGN KEY     SSEMMWLH  GLWTPRJ       0  GLWFB
INDEX           SSEMMWLH  GLWXEMP1      0
INDEX           SSEMMWLH  GLWXEMP2      0
INDEX           SSEMMWLH  GLWXEMP3      0
INDEX           SSEMMWLH  GLWXEMP4      0
INDEX           SSEMMWLH  GLWXEMP5      0
TABLESPACE     SSEMMWLH  GLWSEMP       0
a VIEW         SSEMMWLH  WLEMP         0
***** END OF DB2 DATA *****

```

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
DB2 Admin ----- DSNC Alter Tables -----
C
DB2 Admin -- DSNC Alter Related - View Column List ----- 16:44

Views created without a column list may again be created
without a column list. As an alternative, column names can be
provided from the result table.
Note: Views which had a column list are not affected.

Select a choice
- 1. Create a column list from the result table
- 2. Create such views without a column list

```

DB2 ADMINISTRATION TOOL

Change Management REGISTER

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
File Edit Edit_Settings Menu Utilities Compilers Test Help

EDIT      SYS07076.T164710.RA000.DBA104.R0128133      Columns 00001 00072
Command ==>>> _____ Scroll ==>>> CSR
==MSG> -Warning- The UNDO command is not available until you change
==MSG>         your edit profile using the command RECOVERY ON.
000001  CREATE VIEW SSEMMWLH.WLEMP AS
000002      SELECT EMP_NO, FIRSTNME, MIDINIT, LASTNAME, WORKDEPT, PHONENO,
000003      HIREDATE, termdate, JOB, MANAGER, EDLEVEL, SEX, BIRTHDATE, SALARY,
000004      BONUS, COMM, CREATED_TS, CREATED_BY, UPDATED_TS, UPDATED_BY
000005      FROM SSEMMWLH.GLWTEMP T ;
000006  --
***** ***** Bottom of Data *****
    
```

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help

DB2 Admin ----- DSNIC Alter Related : SSEMMWLH.GLWTEMP ----- Row 1 to 10 of 10
Command ==>>> _____ Scroll ==>>> CSR

Commands: ADDINDEX  ADDFK
Line commands:  A - Alter object  S - Show object

S Type          Creator  Name                Dep.
*          *          *                   * *
-----
FOREIGN KEY SSEMMWLH GLWTDPT                0 GLWFDPT1
FOREIGN KEY SSEMMWLH GLWTEPA                0 GLWFEP1
FOREIGN KEY SSEMMWLH GLWTPRJ                0 GLWFPRJ2
INDEX SSEMMWLH GLWXEMP1                    0
INDEX SSEMMWLH GLWXEMP2                    0
INDEX SSEMMWLH GLWXEMP3                    0
INDEX SSEMMWLH GLWXEMP4                    0
INDEX SSEMMWLH GLWXEMP5                    0
TABLESPACE SSEMMWLH GLWSEMP                0
VIEW SSEMMWLH WLEMP                        0 Drop pending
***** END OF DB2 DATA *****
    
```

DB2 ADMINISTRATION TOOL

Change Management REGISTER

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
DB2 Admin ----- DSNC Alter Tables ----- Row 1 to 2 of 2
Command ==> alter_                               Scroll ==> CSR

Commands:
  ALTER - generate jobs  ADDFK - Add Foreign Key-affected tables
Line commands:
  A - Alter Object  D - Delete  S - Select Object  REL - Alter related
  FK - Add Foreign Key-affected tables  E - Edit DDL  CD - Convert to Drop
  RS - Reset RI-FK flags

To add a table, provide an owner and name below and hit Enter
Owner  ==>      >      (Creator)
Name   ==>      >      (Table Name.  ? to look up)

Sel Creator  Name          T DB Name  TS Name  RI RI  FK  Chg Object
          * *              * *          *          Rels Add Add Rqd Action
-----
*EL SSEMMLH WLEMP          V              NA  NA          DROP
*EL SSEMMLH GLWTEMP       T SSEMMLH  GLWSEMP  4 NO  NO          DROP-SC
***** END OF DB2 DATA *****
    
```

DB2 ADMINISTRATION TOOL

Change Management REGISTER

Change Types:

1. *FAST* – immediate
2. *CHANGE* – regular change
3. *COMPARE* – created by Promote on source system
4. *PROMOTE* – imported on target side
5. *RECOVER* – recover existing change

```

Session A - [24 x 80]
DB2 Admin ----- CM - Register Options ----- 16:51
Option ==>

Commands: CONTINUE                                DB2 System: DSNC
                                                DB2 SQL ID: DBA104

Specify the following values to register a change:

Owner . . . . . DBA104 > (Optional, default is DBA104)
Name . . . . . _ >
Comment . . . . . >
Change Type . . . . : CHANGE (Promote, Change, Compare, Recover, Fast)

Specify the owner and name values to use for this change:
                                Owner      Name
Ignore . . . . . >
Mask . . . . . >
Delta Version . . . . >
  
```

1. Enter a name for the change
2. Provide a comment (optional)
3. Hit ENTER the Delta Version information defaults to the owner and name of the change; can be overridden

```

Session A - [24 x 80]
DB2 Admin ----- CM - Register Options ----- 16:55
Option ==> _

Commands: CONTINUE                                DB2 System: DSNC
                                                DB2 SQL ID: DBA104

Specify the following values to register a change:

Owner . . . . . DBA104 > (Optional, default is DBA104)
Name . . . . . SSEMMWLH.GLWTEMP >
Comment . . . . . ADDING A COLUMN TO TABLE GLWTEMP >
Change Type . . . . : CHANGE (Promote, Change, Compare, Recover, Fast)

Specify the owner and name values to use for this change:
                                Owner      Name
Ignore . . . . . > > (? to look up)
Mask . . . . . > > (? to look up)
Delta Version . . . . DBA104 > SSEMMWLH.GLWTEMP > (? to look up)
  
```


DB2 ADMINISTRATION TOOL

Change Management REGISTER

- FAST Change
 - Process
 - Specify an owner and a name for the change
 - Optionally specify a comment
 - Hit ENTER the change runs immediately and is registered in the Change Management Data Base
 - 2 types
 - Immediate – affected objects do not have any pending changes
 - Emergency Change – affected objects have pending changes



DB2 ADMINISTRATION TOOL

Change Management REGISTER

```

Session A - [24 x 80]
DB2 Admin ----- CM - Register Options ----- 17:16
Option ==> _
Register Successful
Commands: CONTINUE

DB2 System: DSNC
DB2 SQL ID: DBA104

Specify the following values to register a change:

Owner . . . . . DBA104 > (Optional, default is DBA104)
Name . . . . . SSEMMWLH.GLWTEMP >
Comment . . . . . ADDING A COLUMN TO TABLE GLWTEMP >
Change Type . . . . : CHANGE (Promote, Change, Compare, Recover, Fast)

Specify the owner and name values to use for this change:
      Owner      Name
Ignore . . . . . > >
Mask . . . . . > >
Delta Version . . . . DBA104 > SSEMMWLH.GLWTEMP >
    
```

REGISTRATION COMPLETED

PF3 →

```

Session A - [24 x 80]
DB2 Admin ----- DSNC Tables, Views, and Aliases ----- Row 1 to 6 of 6
Command ==> _
Scroll ==> CSR

Commands: GRANT MIG
Line commands:
C - Columns A - Auth L - List X - Indexes S - Table space D - Database
V - Views T - Tables P - Plans Y - Synonyms SEL - Select prototyping
? - Show all line commands

Sel Name Owner T DB Name TS Name Cols Rows Checks
*LC GLWTEMP SSEMMWLH T SSEMMWLH GLWSEMP 19 1048 0
GLWTEMP SSEMMWLS T SSEMMWLS GLWSEMP 20 -1 0
GLWTEMP SSEMMWLT T SSEMMWLT GLWSEMP 20 -1 0
GLWTEMP SSEMMWLX T SSEMMWLX GLWSEMP 21 -1 0
GLWTEMP SSEMMWLZ T SSEMMWLZ GLWSEMP 19 -1 0
GLWTEMP SSEMMWX T SSEMMWX GLWSEMP 19 -1 0
***** END OF DB2 DATA *****
    
```

DB2 ADMINISTRATION TOOL

Change Management REGISTER

Enter the **CMM** primary command to display the Change Management panels

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
DB2 Admin ----- DSNC Tables, Views, and Aliases ---- Row 1 to 6 of 6
Command ==> CMM_
Scroll ==> CSR

Commands: GRANT MIG
Line commands:
C - Columns A - Auth L - List X - Indexes S - Table space D - Database
V - Views T - Tables P - Plans Y - Synonyms
? - Show all line commands

Sel Name Owner T DB Name
-----
*LC GLWTEMP SSEMMWLH T SSEMMWLH
GLWTEMP SSEMMWLS T SSEMMWLS
GLWTEMP SSEMMWLT T SSEMMWLT
GLWTEMP SSEMMWLX T SSEMMWLX
GLWTEMP SSEMMWLZ T SSEMMWLZ
GLWTEMP SSEMMWX T SSEMMWX
***** END OF DB2 DF
    
```

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
DB2 Admin ----- Change Management (CM) ----- 17:20
Option ==> _

1 - Manage changes
2 - Manage masks
3 - Manage ignores
4 - Manage versions
5 - Manage ID table
6 - Report changes

DB2 System: DSNC
DB2 SQL ID: DBA104
    
```

Select Option 1 to list changes

DB2 ADMINISTRATION TOOL

Change Management: Display Registered Changes

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
DB2 Admin ----- CM - Manage Changes ----- 17:20
Option ==> _

1 - Display changes
2 - Create a change
3 - Create delta for target
4 - Import changes

Enter display selection criteria (Using a LIKE operator, criteria not saved):
Name . . . . . >
Owner . . . . . >
Type . . . . .
Created within . .
Altered within . .
    
```

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
DB2 Admin ----- CM - Manage Changes ----- 17:20
Option ==> 1

1 - Display changes
2 - Create a change
3 - Create delta for target
4 - Import changes

DB2 System: DSNC
DB2 SQL ID: DBA104

Enter display selection criteria (Using a LIKE operator, criteria not saved):
Name . . . . . > Created by . . . . . >
Owner . . . . . DBA104_ > Altered by . . . . . >
Type . . . . . Status . . . . .
Created within . . Change ID . .
Altered within . .
    
```

FILTERS



Created / Altered within → 3 days / 5 minutes / 7 hours / 9 months

DB2 ADMINISTRATION TOOL

Change Management: Display Delta Version

The registration of a change does 2 things:

1. Registers the change in the Change Management Data Base
1. Inserts a DELTA change version in the Change Management Data Base

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
DB2 Admin ----- CM - Versions ----- Row 1 to 14 of 24
Command ===> _                               Scroll ===> CSR

Line commands:
CH - Changes PR - Promote VS - Version scope DEL - Delete U - Update
PT - Toggle protected status I - Details on version

Sel      ID T Owner      Name              Comment
----- * * * * * ----->-----
22 D DBA104  ALTER EMP
23 D DBA104  EMP TABLE
25 D DBA104  SSEMMWLZ.GLWTEMP
26 D DBA104  SSEMMWLZ.GLWTEMP.R
27 D DBA104  RECOVER LAST NAME
28 B DNET064  DSG24R02 V0
29 D DNET064  C001
30 B DNET064  DSG24R02 V1
31 D DNET064  V0V1
32 D DNET064  DSG24R02 SQLEMPY
33 D DNET064  V1NULL
41 D DBA104  SSEMMWLH.GLWTEMP
42 B DBA104  SS11EMP
43 D DNET064  ALC001
  
```

Connected to remote server /host demomvs.demopkg.ibm.com using lu/pool TCP00061 and port 23

DB2 ADMINISTRATION TOOL

Change Management: Display Delta Version

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
DB2 Admin ----- CM - Changes ----- Row 1 to 1 of 1
Command ==> _                               Scroll ==> CSR

Line commands:
U - Update AN - Analyze RN - Run VE
PQ - Prerequisites IG - Ignores MA - N
? - Show all line commands

Sel      ID Owner      Name
----- * * * * *
41 DBA104 SSEMMWLH.GLWTEMP
***** END OF DB2 DATA *****
  
```

Delta Version list

Connected to remote server/host demomvs.demopkg.ibm.com using lu/pool TCP00061 and port 23

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
DB2 Admin ----- CM - Change Statements ----- Row 1 from 3
Command ==> _                               Scroll ==> CSR

Change statements for change "DBA104"."SSEMMWLH.GLWTEMP"
Line commands:
E - Edit D - Delete I - Insert S - Show

Sel      Sequence 0 Qual      Name      Statement
----- * * * * *
1 TB SSEMMWLH GLWTEMP      ADMIN ALTER TABLE "SSEMMWLH"."G
2 VW SSEMMWLH WLEMP        ADMIN DROP VIEW "SSEMMWLH"."WL
3 VW SSEMMWLH WLEMP        CREATE VIEW SSEMMWLH.WLEMP AS
***** END OF DB2 DATA *****
  
```

List the statements in the DELTA

Connected to remote server/host demomvs.demopkg.ibm.com using lu/pool TCP00061 and port 23

DB2 ADMINISTRATION TOOL

Change Management: CONFLICT RESOLUTION

Registered a change to an object
Attempt to make another change to the same object

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
DB2 Admin ----- DSNC Tables, Views, and Aliases -- Row 7 to 17 of 17
Command ==>                                     Scroll ==> CSR

Commands: GRANT  MIG
Line commands:
C - Columns  A - Auth  L - List  X - Indexes  S - Table space  D - Database
V - Views    T - Tables P - Plans  Y - Synonyms  SEL - Select prototyping
? - Show all line commands

Sel   Name                Owner      T DB Name  TS Name    Cols      Rows Checks
-----*-----*-----*-----*-----*-----*-----*-----*-----*
SS11LNM      SSEMMWLA T SSEMMDBA SS11001    2         -1      0
SS11PGW      SSEMMWLA T SSEMMDBA SS11001    3         -1      0
SS11SFN      SSEMMWLA T SSEMMDBA SS11001    3         -1      0
SS11VRN      SSEMMWLA T SSEMMDBA SS11001   20         -1      0
SS11DNG      SSEMMWLA T SSEMMDBA SS11002    2         -1      0
SS11ENG      SSEMMWLA T SSEMMDBA SS11002    2         -1      0
SS11LNG      SSEMMWLA T SSEMMDBA SS11002    2         -1      0
SS11PNG      SSEMMWLA T SSEMMDBA SS11002    2         -1      0
SS11DPT      SSEMMWLA T SSEMMDBA SS11DPT   10         -1      0
ALC SS11EMP      SSEMMWLA T SSEMMDBA SS11EMP   19         -1      0
SS11EPA      SSEMMWLA T SSEMMDBA SS11EPA   10         -1      0
***** END OF DB2 DATA *****

a

```


DB2 ADMINISTRATION TOOL

Change Management: CONFLICT RESOLUTION

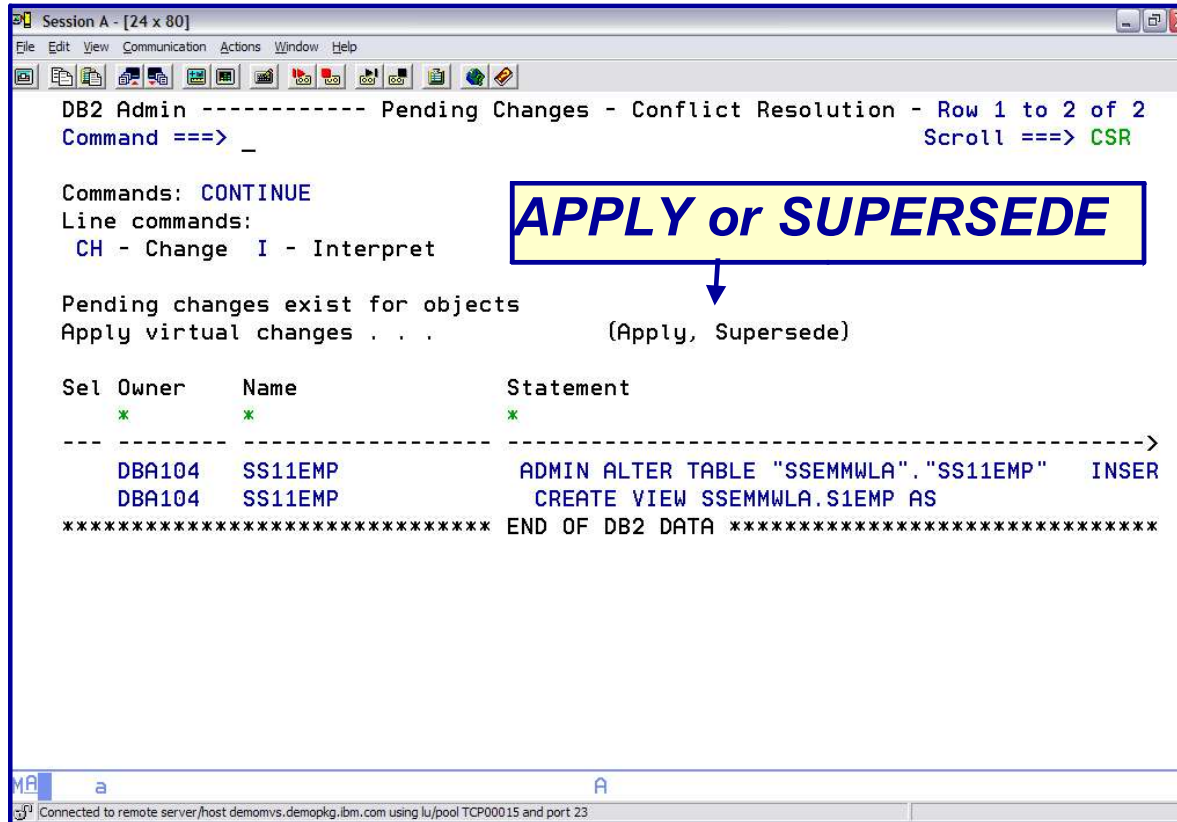
```
Session A - [24 x 80]
File Edit View Communication Actions Window Help
DB2 Admin ----- DSN Alter -----
C
DB2 Admin ----- DSN Change Management Prompt ----- 21:12
Change Management is optional for SQLID: DBA104
Do you wish to use Change Management for this function: Y_ (Yes/No)

Prompt to use Change Management
User ID is registered as an optional user

MR a A
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```

DB2 ADMINISTRATION TOOL

Change Management: CONFLICT RESOLUTION



```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
DB2 Admin ----- Pending Changes - Conflict Resolution - Row 1 to 2 of 2
Command ==> _                               Scroll ==> CSR

Commands: CONTINUE
Line commands:
  CH - Change I - Interpret

Pending changes exist for objects
Apply virtual changes . . .

Sel Owner      Name      Statement
-----
*          *          *
----->
  DBA104  SS11EMP  ADMIN ALTER TABLE "SSEMMWLA"."SS11EMP"  INSR
  DBA104  SS11EMP  CREATE VIEW SSEMMWLA.S1EMP AS
***** END OF DB2 DATA *****

```

APPLY or SUPERSEDE

(Apply, Supersede)

Connected to remote server/host demomvs.demopkg.ibm.com using lu/pool TCP00015 and port 23

DB2 ADMINISTRATION TOOL

Change Management: CONFLICT RESOLUTION

APPLY:

Base changes on pending change information

Will show objects schema AS IF the pending changes had been performed (Virtual Changes)

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help

DB2 Admin ----- Pending Changes - Conflict Resolution - Row 1 to 2 of 2
Command ==>                                         Scroll ==> CSR

Commands: CONTINUE
Line commands:
  CH - Change I - Interpret

Pending changes exist for objects
Apply virtual changes . . . apply_      (Apply, Supersede)

Sel Owner      Name      Statement
-----
*              *              *
----->
  DBA104      SS11EMP      ADMIN ALTER TABLE "SSEMMWLA"."SS11EMP" INSE
  DBA104      SS11EMP      CREATE VIEW SSEMMWLA.S1EMP AS
***** END OF DB2 DATA *****

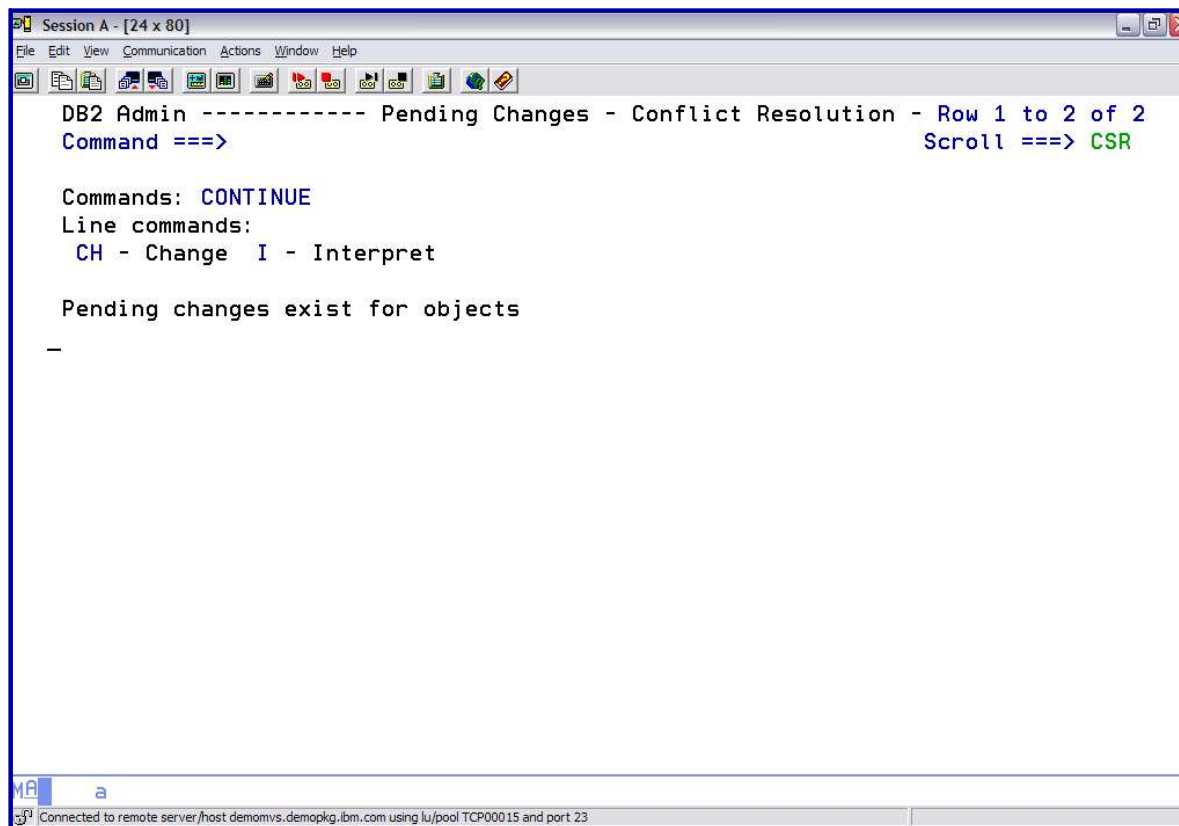
a
Connected to remote server/host demomvs.demopkg.ibm.com using lu/pool TCP00015 and port 23

```

DB2 ADMINISTRATION TOOL

Change Management: CONFLICT RESOLUTION

APPLY



The screenshot shows a terminal window titled "Session A - [24 x 80]". The window contains the following text:

```
DB2 Admin ----- Pending Changes - Conflict Resolution - Row 1 to 2 of 2
Command ==>                                     Scroll ==> CSR

Commands: CONTINUE
Line commands:
  CH - Change I - Interpret

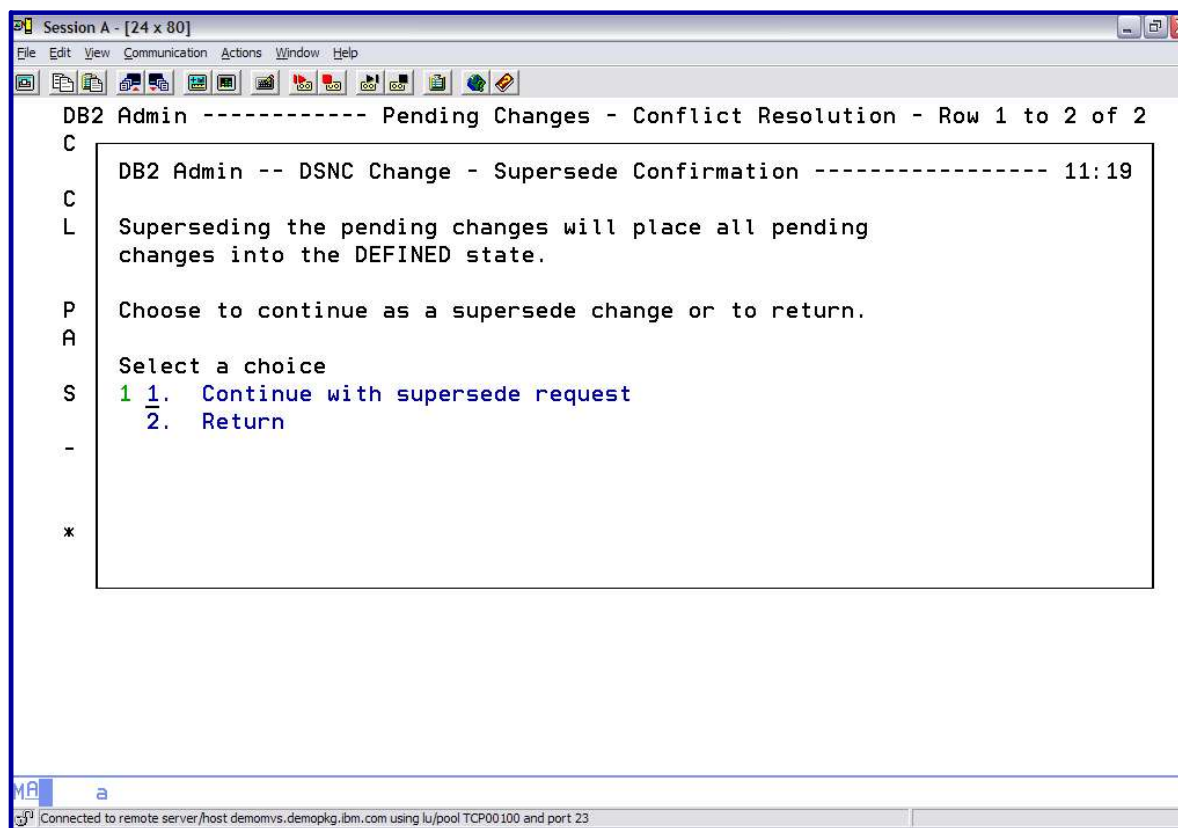
Pending changes exist for objects
-
```

At the bottom of the window, there is a status bar that reads: "Connected to remote server/host demomvs.demopkg.ibm.com using lu/pool TCP00015 and port 23".

DB2 ADMINISTRATION TOOL

Change Management: CONFLICT RESOLUTION

SUPERSEDE



```
Session A - [24 x 80]
File Edit View Communication Actions Window Help
DB2 Admin ----- Pending Changes - Conflict Resolution - Row 1 to 2 of 2
C
DB2 Admin -- DSN Change - Supersede Confirmation ----- 11:19
C
L Superseding the pending changes will place all pending
  changes into the DEFINED state.
P Choose to continue as a supersede change or to return.
A
S Select a choice
  1 1. Continue with supersede request
  2 2. Return
-
*
```

MA a

Connected to remote server/host demomvs.demopkg.ibm.com using lu/pool TCP00100 and port 23

DB2 ADMINISTRATION TOOL

Change Management: CONFLICT RESOLUTION

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
DB2 Admin ----- DSN ALTER Table ----- Row 1 to 8 of 19
Command ==> _                               Scroll ==> CSR

New owner ==> SSEMMLA >                      Old owner : SSEMMLA
New name ==> SS11EMP >                        Old name : SS11EMP
Volatile ==> NO Action : NONE                 New DB ==> SSEMMLA
Rows/Page : 29.681 Partitions: 4             New TS ==> SS11EMP
Commands : CONTINUE PRIMKEY ADD REL ALTPART
Line commands :
I - Insert U - Update D - Delete R - Repeat LAB - Label COM - Comment
M - Move A - After B - Before X - Index RES - Reset update
Select Column Name      Col No Col Type Length Scale Null D Col No Type
* * * * * * * * * *
----->-----
EMP_NO                   1 INTEGER      4      0 N  N      1
FIRSTNAME                2 VARCHAR     12      0 N  N      2
MIDINIT                  3 CHAR         1      0 N  N      3
LASTNAME                 4 VARCHAR     20      0 N  N      4

Related objects INDEXES=Y VIEWS=Y PLANS=N RI=N PACKAGES=N TRIGGERS=N

JOB                       8 CHAR         12      0 Y  Y      8
    
```

BUSINESS AS USUAL



DB2 ADMINISTRATION TOOL

Change Management: CONFLICT RESOLUTION

**Provide a name
and a comment**

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
DB2 Admin ----- CM - Register Options ----- 11:23
Option ==> _

Commands: CONTINUE                                DB2 System: DSNC
                                                    DB2 SQL ID: DBA104

Specify the following values to register a change:

Owner . . . . . DBA104 > (Optional, default is DBA104)
Name . . . . . SS11EMP_LASTNAME >
Comment . . . . . INCREASED DATA TYPE AND LENGTH OF LASTNAME FIELD >
Change Type . . . . : CHANGE (Promote, Change, Compare, Recover, Fast)

Specify the owner and name values to use for this change:

                                Owner          Name
Ignore . . . . . > > (? to look up)
Mask . . . . . > > (? to look up)
Delta Version . . . . DBA104 > SS11EMP_LASTNAME > (? to look up)

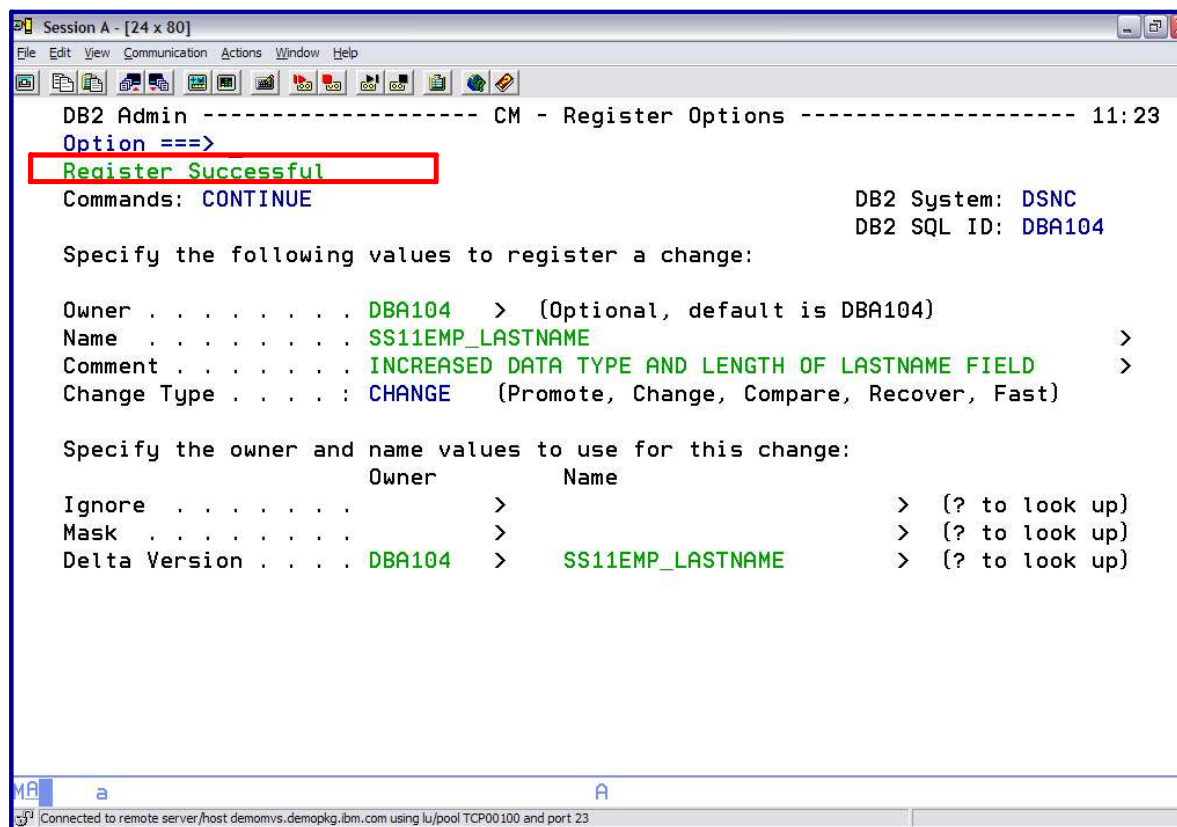
```

MA a A

Connected to remote server/host demomvs.demopkg.ibm.com using lu/pool TCP00100 and port 23

DB2 ADMINISTRATION TOOL

Change Management: CONFLICT RESOLUTION



The screenshot shows a terminal window titled "Session A - [24 x 80]" with a menu bar (File, Edit, View, Communication, Actions, Window, Help) and a toolbar. The main text area displays the following output:

```
DB2 Admin ----- CM - Register Options ----- 11:23
Option ==>
Register Successful
Commands: CONTINUE                                DB2 System: DSNC
                                                    DB2 SQL ID: DBA104

Specify the following values to register a change:

Owner . . . . . DBA104 > (Optional, default is DBA104)
Name . . . . . SS11EMP_LASTNAME >
Comment . . . . . INCREASED DATA TYPE AND LENGTH OF LASTNAME FIELD >
Change Type . . . . : CHANGE (Promote, Change, Compare, Recover, Fast)

Specify the owner and name values to use for this change:

                Owner                Name
Ignore . . . . . > > (? to look up)
Mask . . . . . > > (? to look up)
Delta Version . . . . DBA104 > SS11EMP_LASTNAME > (? to look up)
```

The text "Register Successful" is highlighted with a red rectangular box. At the bottom of the window, a status bar shows "Connected to remote server/host demomvs.demopkg.ibm.com using lu/pool TCP00100 and port 23".

CHANGE IS REGISTERED

DB2 ADMINISTRATION TOOL

Change Management: CONFLICT RESOLUTION

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
DB2 Admin ----- CM - Changes ----- Row 2 from 22
Command ==> _                               Scroll ==> CSR

Line commands:
U - Update AN - Analyze RN - Run VE - Versions ST - Statements
PQ - Prerequisites IG - Ignores MA - Masks
? - Show all line commands

Sel      ID Owner   Name                Type      Status  Comment
----- *-----*
-----> ----->
      21 DBA104  EMP_CHANGE          CHANGE    CANCELED ADD TERM DATE
      23 DBA104  ALTER EMP           CHANGE    ANALYZED ALTERING THE EMP TABL
      24 DBA104  ALTER EMP THIRD TI  CHANGE    DEFINED  ALTER THE EMP TABLE N
      25 DBA104  GLWEMP              CHANGE    CANCELED ADDED TERM DATE
      26 DBA104  SSEMMLZ.GLWTEMP     CHANGE    ANALYZED ADDED TERMDATE TO TAB
      27 DBA104  SSEMMLZ.GLWTEMP.R  RECOVER   ANALYZED RECOVER CHANGE FOR CH
      28 DBA104  SSEMMLZ.GLWTEMP2   CHANGE    INITIAL  CHANGE THE LAST NAME
      29 DBA104  SSEMMLZ.GLWTEMP.L  CHANGE    DEFINED  RECOVER CHANGE FOR CH
      41 DBA104  SSEMMLH.GLWTEMP     CHANGE    DEFINED  ADDING A COLUMN TO TA
      42 DBA104  SS11EMP             CHANGE    DEFINED  ADD TERMDATE TO TABLE
      45 DBA104  SS11EMP_LASTNAME   CHANGE    ANALYZED INCREASED DATA TYPE A
***** END OF DB2 DATA *****

```

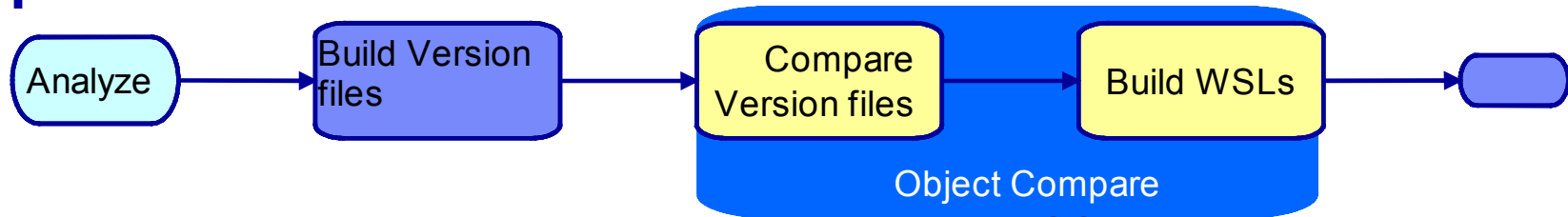
Analyze the latest change – status is ANALYZED

Previous change has a status of DEFINED

In order to make the previously defined change – need to ANALYZE

DB2 ADMINISTRATION TOOL

Step 2: ANALYZE



- Determine what must be done to implement the change (OC)
 - Extract change as delta version file
 - Build source base version by merging DVF and a base VF
 - Compare the Version files
 - Build the work statement list
- Update the Change information in the CM DB status=ANALYZED
- Optionally build a recover change and recover WSL
 - Reverse compare



DB2 ADMINISTRATION TOOL

Change Management: ANALYZE

```
1 DB2 Admin -- DSNC CM - Prerequisites ----- 21:05

There are prerequisites for this change. Continuing
with the analyze will force the use of the automatic base
version method since the prerequisites do not use the same
version scope or base version.

Select a choice
3 1. Cancel
   2. Continue
   3. Show prerequisites
```

Have a 'PRE-REQUISITE – Option 3 allows view of pre-reqs

DB2 ADMINISTRATION TOOL

Change Management: ANALYZE

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
DB2 Admin ----- CM - Prerequisites ----- Row 1 to 1 of 1
Command ==> _                               Scroll ==> CSR

Prerequisites for change "DBA104"."SS11EMP"
Line commands:
  U - Update  DEL - Delete  INS - Insert  CH - Show change
  I - Details on prerequisite

Sel Owner      Name                Comment
  *           *                *
-----
  DBA104      SS11EMP_LASTNAME
***** END OF DB2 DATA *****

```

MA a A
Connected to remote server/host demomvs.demopkg.ibm.com using lu/pool TCP00072 and port 23

Can see that there is another change on the same object

DB2 ADMINISTRATION TOOL

Change Management: ANALYZE

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
DB2 Admin ----- CM - Changes ----- Row 2 from 22
Command ==> _                               Scroll ==> CSR

Line commands:
U - Update AN - Analyze RN - Run VE - Versions ST - Statements
PQ - Prerequisites IG - Ignores MA - Masks
? - Show all line commands

Sel      ID Owner      Name      Type      Status      Comment
----- *----- *----- *----- *----- *-----
----->----->
21 DBA104 EMP_CHANGE CHANGE CANCELED ADD TERM DATE
23 DBA104 ALTER EMP CHANGE ANALYZED ALTERING THE EMP TABL
24 DBA104 ALTER EMP THIRD TI CHANGE DEFINED ALTER THE EMP TABLE N
25 DBA104 GLWEMP CHANGE CANCELED ADDED TERM DATE
26 DBA104 SSEMMWLZ.GLWTEMP CHANGE ANALYZED ADDED TERMDATE TO TAB
27 DBA104 SSEMMWLZ.GLWTEMP.R RECOVER ANALYZED RECOVER CHANGE FOR CH
28 DBA104 SSEMMWLZ.GLWTEMP2 CHANGE INITIAL CHANGE THE LAST NAME
29 DBA104 SSEMMWLZ.GLWTEMP.L CHANGE DEFINED RECOVER CHANGE FOR CH
41 DBA104 SSEMMWLH.GLWTEMP CHANGE DEFINED ADDING A COLUMN TO TA
42 DBA104 SS11EMP CHANGE ANALYZED ADD TERMDATE TO TABLE
45 DBA104 SS11EMP_LASTNAME CHANGE ANALYZED INCREASED DATA TYPE A
***** END OF DB2 DATA *****

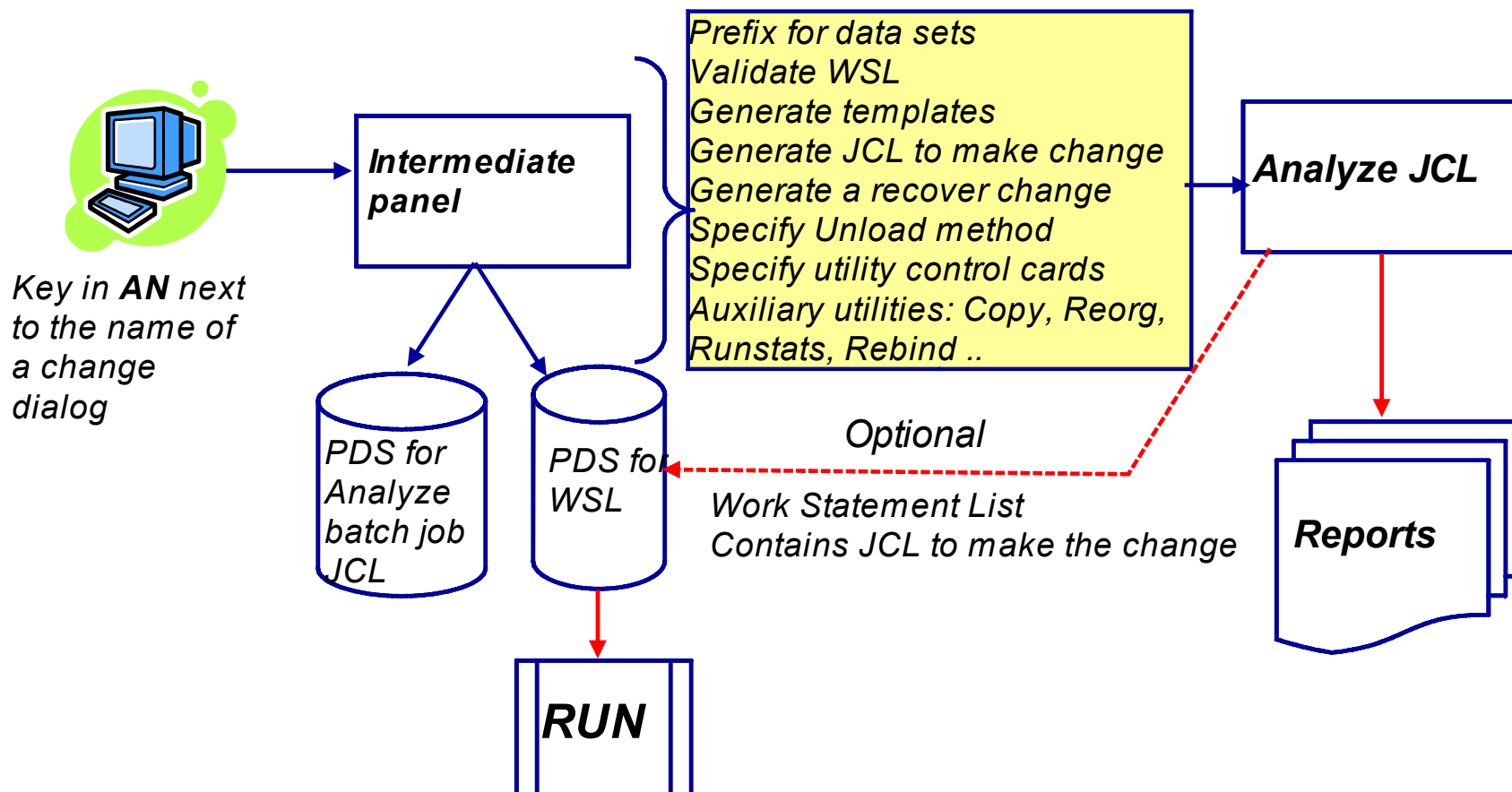
```

New status: ANALYZED

DB2 ADMINISTRATION TOOL

Change Management: ANALYZE

- ANALYZE – batch JCL gets generated / Option to generate WSL



DB2 ADMINISTRATION TOOL

Change Management: ANALYZE

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
. . . . .
Display Filter View Print Options Help
-----
SDSF OUTPUT DISPLAY DBA104D JOB00696 DSID 114 LINE 53 COLUMNS 02- 81
COMMAND INPUT ==> SCROLL ==> CSR
Compare table source(SSEMMWLA.SS11EMP) and target(SSEMMWLA.SS11EMP)
(D)Column TERMDATE added
Table SSEMMWLA.SS11EMP is partitioned and will be dropped by dropping tablespa
Table will be recreated
Table data will not be converted

Compare index source(SSEMMWLA.SS11EMP1) and target(SSEMMWLA.SS11EMP1)
Index SSEMMWLA.SS11EMP1 will be dropped by dropping the tablespace
Index will be recreated because the base table will be dropped and recreated

Compare index source(SSEMMWLA.SS11EMP2) and target(SSEMMWLA.SS11EMP2)
Index SSEMMWLA.SS11EMP2 will be dropped by dropping the tablespace
Index will be recreated because the base table will be dropped and recreated

Compare index source(SSEMMWLA.SS11EMP3) and target(SSEMMWLA.SS11EMP3)
Index SSEMMWLA.SS11EMP3 will be dropped by dropping the tablespace
Index will be recreated because the base table will be dropped and recreated

Compare index source(SSEMMWLA.SS11EMP4) and target(SSEMMWLA.SS11EMP4)

```

Sample Report

DB2 ADMINISTRATION TOOL

Change Management: ANALYZE

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
-----
Display Filter View Print Options Help
-----
SDSF OUTPUT DISPLAY DBA104D JOB00696 DSID 114 LINE 79 COLUMNS 02- 81
COMMAND INPUT ==> SCROLL ==> CSR
Compare View source(SSEMMWLA.S1EMP) and target(SSEMMWLA.S1EMP)
(D)Field PATHSCHEMAS changed from "SYSIBM","SYSFUN","SYSPROC","DB2ADM"
to "SYSIBM","SYSFUN","SYSPROC","DBA104"
(D)View text has changed. Compared view text follows. First difference under
First difference : Source token : T.TERMDATE
Target token : T.JOB
View from source (formatted with masks applied) :
CREATE VIEW SSEMMWLA.S1EMP AS
SELECT T.EMP_NO, T.FIRSTNME, T.MIDINIT, T.LASTNAME, T.WORKDEPT,
T.PHONENO, T.HIREDATE, T.TERMDATE, T.JOB, T.MANAGER,
=====
T.EDLEVEL, T.SEX, T.BIRTHDATE, T.SALARY, T.BONUS, T.COMM,
T.CREATED_TS, T.CREATED_BY, T.UPDATED_TS, T.UPDATED_BY
FROM SSEMMWLA.SS11EMP T ;
View from target (formatted) :
CREATE VIEW SSEMMWLA.S1EMP AS
SELECT T.EMP_NO, T.FIRSTNME, T.MIDINIT, T.LASTNAME, T.WORKDEPT,
T.PHONENO, T.HIREDATE, T.JOB, T.MANAGER, T.EDLEVEL, T.SEX,
=====

```

MA a

Connected to remote server/host demomvs.demopkg.ibm.com using lu/pool TCP00072 and port 23

Sample Report (cont.)

DB2 ADMINISTRATION TOOL

Versions

- Is a snapshot of a set of object definitions at a point in time
- Enable
 - Tracking of changes
 - Restoration of objects to a previous version
 - Promote changes from one subsystem to another
- Define 2 ways
 - Use Change Management interface to define a version scope
 - Use GV command to generate a version based on the objects included in the scope
 - Generate a version at the time you execute the change



DB2 ADMINISTRATION TOOL

Using Change Management ISPF interface

Display versions

Display version scopes

Create new version scopes

The screenshot shows a terminal window titled 'Session A - [24 x 80]'. The main menu is 'DB2 Admin' with the sub-menu 'CM - Manage Versions' selected. The time is 21:59. The menu options are:

```

DB2 Admin ----- CM - Manage Versions ----- 21:59
Option ==>

      1 - Display versions
      2 - Display version scopes
      3 - Insert a version scope
  
```

On the right side of the screen, the following information is displayed:

```

DB2 System: DSNC
DB2 SQL ID: DBA104
  
```

Below the menu, there is a section for 'Enter display selection criteria (Using a LIKE operator, criteria not saved):'

```

Name . . . . . > Created by . . . . . >
Owner . . . . . > Altered by . . . . . >
Created within . . . . . Version ID . . . . .
Altered within . . . . .
  
```

At the bottom of the window, there is a status bar showing 'MR a' and 'Connected to remote server/host demomvs.demopkg.ibm.com using lu/pool TCP00075 and port 23'.

DB2 ADMINISTRATION TOOL

Version Scope

Defines the set of objects to be include in the processing of a version

Can be any set of objects
 ✓ 1 or more data bases
 ✓ A group of table spaces

Typically would be at the application level

Once the Version Scope has been defined – can create a Base Version

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
DB2 Admin ----- CM - Version Scopes ----- Row 1 to 3 of 3
Command ==> _                               Scroll ==> CSR

Line commands:
  VE - Versions  SO - Version scope objects  GV - Generate new base version
  INS - Insert  U - Update  DEL - Delete  I - Details on version scope

Sel          ID Owner      Name          Comment
-----
              * *          *              *
-----
              1 DBA104  ELAINE        VERSION SCOPE
              2 DNET209  PRUEBA
              4 DNET064  DSG24R02     REDBOOK TEST
***** END OF DB2 DATA *****
  
```

For those familiar with DB2 Admin's GEN command, the Version Scope provides a method of providing a list of objects to be included

MR a
 Connected to remote server/host demomvs.demopkg.ibm.com using lu/pool TCP00075 and port 23

DB2 ADMINISTRATION TOOL

Version Scope

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
DB2 Admin ----- CM - Version Scopes ----- Row 1 to 3 of 3
Command ==>
Line commands:
VE - Versions SO - Version scope objects GV - Generate new base version
INS - Insert U - Update DEL - Delete I - Detail
Sel      ID Owner   Name      Comment
----- * * * * *
so_      1 DBA104  ELAINE    VERSION
         2 DNET209 PRUEBA
         4 DNET064 DSG24R02 REDBOOK
***** END OF DB2 DATA ****
    
```

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
DB2 Admin ----- CM - Version Scope Objects ----- Row 1 to 1 of 1
Command ==> _
Version scope objects for scope "DBA104"."ELAINE"
Commands: SAVE
Line commands:
I - Insert D - Delete R - Repeat
Sel T Qual   Name      Oper.
--- * * * * *
DB      SSEMMLA
***** END OF DB2 DATA *****
    
```

Show objects in scope

DB2 ADMINISTRATION TOOL

GV Generate Version

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
DB2 Admin ----- CM - Version Scopes ----- Row 1 to 3 of 3
Command ==>
Scroll ==> CSR

Line commands:
VE - Versions SO - Version scope objects GV - Generate new base version
INS - Insert U - Update DEL - Delete I - Delete

Sel      ID Owner   Name      Com
----- * * * * *
gV_      1 DBA104  ELAINE    VER
          2 DNET209 PRUEBA
          4 DNET064 DSG24R02  RED
***** END OF DB2 DATA *****

```

Connected to remote server/host demomvs.demopkg.ibm.com using lu/pool TCP00075 and port 23

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
DB2 Admin ----- CM - Specify a New Base Version -----

DB2 Admin ----- Specify a New Base Version ----- 22:05
Command ==>

Enter/verify the following:
Owner . . dba104 > (? to look up)
Name . . ssemmwla version 1 ≥ (? to look up)

```

Connected to remote server/host demomvs.demopkg.ibm.com using lu/pool TCP00075 and port 23

*Provide a name and owner
Generates batch JCL*

DB2 ADMINISTRATION TOOL

GV Generate Version

```
Session A - [24 x 80]
File Edit View Communication Actions Window Help
-----
Display Filter View Print Options Help
-----
SDSF OUTPUT DISPLAY DBA104D JOB00772 DSID 113 LINE 7 COLUMNS 02- 81
COMMAND INPUT ==> _ SCROLL ==> CSR
-----
ADB9020I ADBCVIC - Import Version Files
-----
ADB9024I The scope ID for version scope DBA104.ELAINE is 1.
ADB9048I The specified version DBA104.SSEMMWLA VERSION 1 was not found in the
database.
ADB9044I The version will be added.
ADB9029I A version file was extracted from location
at 2007-03-23 22:08
by
.
ADB9032I The number of version data records imported is 717.
-----
ADB9021I - Version Import Complete.The import for version ADBCVIC completed
successfully.
MA a
Connected to remote server /host demomvs.demopkg.ibm.com using lu/pool TCP00075 and port 23
```

DB2 ADMINISTRATION TOOL

Display Versions

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
DB2 Admin ----- CM - Versions ----- Row 2 from 19
Command ==> _                               Scroll ==> CSR

Line commands:
CH - Changes  PR - Promote  VS - Version scope  DEL - Delete  U - Update
PT - Toggle protected status  I - Details on version

Sel          ID T Owner      Name                Comment
-----
          * * DBA104* *
----->-----
          22 D DBA104    ALTER EMP
          23 D DBA104    EMP TABLE
          25 D DBA104    SSEMMWLZ.GLWTEMP
          26 D DBA104    SSEMMWLZ.GLWTEMP.R
          27 D DBA104    RECOVER LAST NAME
          41 D DBA104    SSEMMWLH.GLWTEMP
          42 D DBA104    SS11EMP
          45 D DBA104    SS11EMP_LASTNAME
          47 B DBA104    SSEMMWLA VERSION 1
          ***** END OF DB2 DATA *****

```

B = Base Version

D = Delta Version

DB2 ADMINISTRATION TOOL

Step 3: RUN Changes



- Run the WSL produced by Analyze
- Run-time Analyze will rebuild WSL for comparison
 - Any difference causes run job to end
 - May become optional in the future
- Mark the change COMPLETE when run completes
- Optionally, create a base version using a version scope



DB2 ADMINISTRATION TOOL

Change Management: RUN Changes


```


Session A - [24 x 80]
File Edit View Communication Actions Window Help
DB2 Admin ----- CM - Changes ----- Row 1 to 11 of 11
Command ==> Scroll ==> CSR

Line commands:
U - Update AN - Analyze RN - Run VE - Versions ST - Statements
PQ - Prerequisites IG - Ignores MA - Masks
? - Show all line commands

Sel      ID Owner      Name              Type      Status      Comment
  * *      *              *              *          *          *
----->----->
      21 DBA104    EMP_CHANGE        CHANGE    CANCELED    ADD TERM DATE
      23 DBA104    ALTER EMP          CHANGE    DEFINED     ALTERING THE EMP TABL
      24 DBA104    ALTER EMP THIRD TI CHANGE    DEFINED     ALTER THE EMP TABLE N
      25 DBA104    GLWEMP             CHANGE    CANCELED    ADDED TERM DATE
      26 DBA104    SSEMMWLZ.GLWTEMP  CHANGE    ANALYZED    ADDED TERMDATE TO TAB
      27 DBA104    SSEMMWLZ.GLWTEMP.R RECOVER   ANALYZED    RECOVER CHANGE FOR CH
      28 DBA104    SSEMMWLZ.GLWTEMP2 CHANGE    INITIAL     CHANGE THE LAST NAME
      29 DBA104    SSEMMWLZ.GLWTEMP.L CHANGE    DEFINED     RECOVER CHANGE FOR CH
      41 DBA104    SSEMMWLH.GLWTEMP  CHANGE    DEFINED     ADDING A COLUMN TO TA
      42 DBA104    SS11EMP           CHANGE    ANALYZED    ADD TERMDATE TO TABLE
      45 DBA104    SS11EMP_LASTNAME  CHANGE    ANALYZED    INCREASED DATA TYPE A
***** END OF DB2 DATA *****

```





DB2 ADMINISTRATION TOOL

RUN Changes WSL Library

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
DB2 Admin ----- Work Statement List Library: DSNCA.ANALYZE.W Row 1 from 8
Command ==> Scroll ==> CSR

Line commands:
S - Show R - Run in batch D - Delete C - Copy A - Append Q - Clone
I - Interpret V - Validate E - Edit

Sel Name      Size Created      Changed      ID
  *          * *          *          *
-----
C000002A     131 2007/02/21 2007/03/07 15:39 DBA104
C0000021       11 2007/02/21 2007/03/07 15:40 DBA104
C0000023     204 2007/03/07 2007/03/07 15:54 DBA104
C0000026     204 2007/03/08 2007/03/08 17:20 DBA104
C0000042     161 2007/03/23 2007/03/23 22:18 DBA104
C0000045       12 2007/03/23 2007/03/23 21:02 DBA104
R0000023     202 2007/03/07 2007/03/07 16:35 DBA104
R0000026     202 2007/03/08 2007/03/08 17:20 DBA104
***** END OF DB2 DATA *****

```

MA a

Connected to remote server/host demomvs.demopkg.ibm.com using lu/pool TCP00075 and port 23

DB2 ADMINISTRATION TOOL

RUN Changes WSL Library

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
DB2 Admin ----- CM - Changes ----- Row 1 to 11 of 11
Command ==> Scroll ==> CSR

Line commands:
U - Update AN - Analyze RN - Run VE - Versions ST - Statements
PQ - Prerequisites IG - Ignores MA - Masks
? - Show all line commands

Sel      ID Owner      Name              Type      Status      Comment
      * * * * *
----->----->
      21 DBA104    EMP_CHANGE        CHANGE    CANCELED    ADD TERM DATE
      23 DBA104    ALTER EMP         CHANGE    DEFINED     ALTERING THE EMP TABL
      24 DBA104    ALTER EMP THIRD TI CHANGE    DEFINED     ALTER THE EMP TABLE N
      25 DBA104    GLWEMP           CHANGE    CANCELED    ADDED TERM DATE
      26 DBA104    SSEMMWLZ.GLWTEMP CHANGE    ANALYZED    ADDED TERMDATE TO TAB
      27 DBA104    SSEMMWLZ.GLWTEMP.R RECOVER   ANALYZED    RECOVER CHANGE FOR CH
      28 DBA104    SSEMMWLZ.GLWTEMP2 CHANGE    INITIAL     CHANGE THE LAST NAME
      29 DBA104    SSEMMWLZ.GLWTEMP.L CHANGE    DEFINED     RECOVER CHANGE FOR CH
      41 DBA104    SSEMMWLH.GLWTEMP CHANGE    DEFINED     ADDING A COLUMN TO TA
      42 DBA104    SS11EMP          CHANGE    ANALYZED    ADD TERMDATE TO TABLE
      45 DBA104    SS11EMP_LASTNAME CHANGE    RUNNING     INCREASED DATA TYPE A
***** END OF DB2 DATA *****

```

MA a

Connected to remote server/host demomvs.demopkg.ibm.com using lu/pool TCP00075 and port 23

DB2 ADMINISTRATION TOOL

RUN Changes Restartability

- When a change has successfully completed, the status changes to COMPLETED
- If a change continues to be RUNNING indication there is a problem
- The ADBCHKPT table keeps track of work statement list executions

```

Session A - [24 x 80]
DB2 Admin ----- DSNCL Display Batch Job Checkpoint Table - Row 1 to 2 of 2
Command ==> -
                                                                    DB2 System: DSNCL
                                                                    DB2 SQL ID: DBA104

Checkpoint Table:  ADB.ADBCHKPT

Line commands:
D - Delete/Terminate  I - Insert  U - Update  N - Skip-Next

S Userid  Worklist Suffix  Time                Commit  Restart  Restart
  *      *      *      *                Number  Command  Action
----->-----
DBA104  C0000045      2007-03-23-22.33      2  COPY    S
KLTAYLO ALCCCOL      2007-02-23-09.58      1  UNLOAD  C
***** END OF DB2 DATA *****
  
```

In this case worklist C0000045 abended with the COPY

Connected to remote server/host demomvs.demopkg.ibm.com using lu/pool TCP00058 and port 23

DB2 ADMINISTRATION TOOL

RUN Changes Restartability

ER command brings up the JCL – in this case a COPY using a GDG was being attempted but the GDG did not exist

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
DB2 Admin ----- CM - Changes ----- Row 2 from 2
Command ==>
Scroll ==> CSR

Line commands:
U - Update AN - Analyze RN - Run VE - Versions ST - Statements
PQ - Prerequisites IG - Ignores MA - Masks
? - Show all line commands

Sel  ID Owner  Name                Type  Status  Com
-----
21 DBA104  EMP_CHANGE          CHANGE CANCELED ADD
23 DBA104  ALTER EMP           CHANGE DEFINED  ALT
24 DBA104  ALTER EMP THIRD TI CHANGE DEFINED  ALT
25 DBA104  GLWEMP             CHANGE CANCELED ADD
26 DBA104  SSEMMWLZ.GLWTEMP   CHANGE ANALYZED ADD
27 DBA104  SSEMMWLZ.GLWTEMP.R RECOVER ANALYZED REC
28 DBA104  SSEMMWLZ.GLWTEMP2 CHANGE INITIAL  CHA
29 DBA104  SSEMMWLZ.GLWTEMP.L CHANGE DEFINED  REC
41 DBA104  SSEMMWLH.GLWTEMP   CHANGE DEFINED  ADD
42 DBA104  SS11EMP            CHANGE ANALYZED ADD
45 DBA104  SS11EMP_LASTNAME   CHANGE RUNNING  INC
49 DBA104  SS12EMP            CHANGE INITIAL  ADD
50 DBA104  EMPLOYEE           CHANGE DEFINED  ADD
  
```

```

Session A - [24 x 80]
File Edit Edit_Settings Menu Utilities Compilers Test Help
EDIT DBA104.DSNC.RUN.JCL(E0000045) - 01.00 Columns 00001 00072
Command ==>
Scroll ==> CSR
000388 DSN SYSTEM(DSNC)
000389 RUN PROGRAM(ADBTPE2) PLAN(ADBTPE2) -
000390 LIB('DB2ADMIN.V7R2.SADBLLIB') -
000391 PARMS('/WORKLIST(C0000045) SSID(DSNC) -
000392 RESTART(YES),CHANGEID(45)')
000393 END
000394 //SYSIN DD *
000395 -- Created by DBA104 on 2007/03/23 at 21:02
000396 -- Generated during change management analyze for change ID = 45
000397 -- Generated by Compare Apply by DBA104 on 2007/03/23 at 21:02
000398 SET CURRENT SQLID = 'DBA104';
000399 GRANT USE OF STOGROUP GLWG01 TO PUBLIC;
000400 GRANT USE OF STOGROUP GLWG01 TO PUBLIC;
000401 COMMIT;
000402 ALTER TABLE SSEMMWLA.SS11EMP
000403 ALTER LASTNAME SET DATA TYPE CHAR(25);
000404 TEMPLATE SYSCOPY DSN 'DBA104.DSNC.IC.SSEMMDBA.SS11EMP(+1)'
000405 UNIT SYSDA;
000406 COPY TABLESPACE SSEMMDBA.SS11EMP
000407 COPYDDN(SYSCOPY);
  
```

Fix the problem – create the GDG and resubmit – no need to modify JCL

DB2 OBJECT COMPARISON TOOL

Change Management

- Compare structure of DB2 objects
 - Reports
 - Apply jobs – make target look like the source
 - Register compare in Change Management data base

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
Compare ----- DB2 Object Comparison Tool Menu ----- 22:17
Option ==> _

          Status:
1 - Specify compare source (new)           Incomplete
2 - Specify compare target (old)          Incomplete
3 - Specify compare masks                  None specified
4 - Specify fields to ignore               Using defaults
5 - Generate compare job                  Not generated

W - Walk through steps 1 - 5 in sequence
V - Generate job to extract version file from source only
R - Reset status

S - Save dialog
M - Manage/Restore dialog
MC - MultiCompare
  
```

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DB2 OBJECT COMPARISON TOOL

Change Management

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
Compare ----- Specify Compare Source ----- 22:18
Option ==> 2_

1 - Source is from a DDL file
2 - Source is from the DB2 catalog
3 - Source is from a compare version file
  
```

DDL Source: file or Catalog

Define Version file

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
Compare ----- Specify DB2 Source Catalog Extract ----- 22:19
Option ==> 2

1 - Source is databases from the DB2 catalog
2 - Source is table spaces from the DB2 catalog
3 - Source is tables from the DB2 catalog
4 - Add schema objects to the DB2 Source catalog extract

Specify compare version file output:
Version table entry:
  Owner . . . DBA104 >           (? to look up)
  Name . . . ss11ss12_ >        (? to look up)
Data set:
  Data set name . . COMPARE.SOURCE.VER0326

Enter a description (optional):

  Description . .
  
```


DB2 OBJECT COMPARISON TOOL

Change Management

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
Compare ----- DSNIC Compare Add Table Spaces ----- 22:28
Option ==>

Enter the partial name of the table space you want to add to the compare
operation:

Partial database name . . . : SSEMMD%
Partial table space name . . : SS11%
Location name . . . . . : _ >

Press Enter to search for the table spaces.
    
```

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
Compare ----- DSNIC Compare Add Table Spaces ----- Row 1 to 8 of 8
Command ==>                                     Scroll ==> CSR

Valid line commands are:                          Location: NDCDB203
S - Select (add)

Select Database Space Action
-----
S_ SSEMMDBA SS11001
   SSEMMDBA SS11002
   SSEMMDBA SS11DPT
   SSEMMDBA SS11EMP
   SSEMMDBA SS11EPA
   SSEMMDBA SS11PJA
   SSEMMDBA SS11PRJ
   SSEMMDBA SS11SPL

***** END OF DB2 DATA *****
    
```

Identify the object(s) that make up the source

DB2 OBJECT COMPARISON TOOL

Change Management

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
Compare ----- DB2 Object Comparison Tool Menu ----- 22:30
Option ==> 2_

1 - Specify compare source (new)
2 - Specify compare target (old)
3 - Specify compare masks
4 - Specify fields to ignore
5 - Generate compare job

W - Walk through steps 1 - 5 in sequence
V - Generate job to extract version file from
R - Reset status

S - Save dialog
M - Manage/Restore dialog
MC - MultiCompare

. . . . .

```

```

Status:
DB2 catalog extract specified

```

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
Compare ----- Specify Compare Target ----- 22:32
Option ==> 2_

1 - Target is from a DDL file
2 - Target is from the DB2 catalog
3 - Target is from a compare version file
4 - Target is from the DB2 catalog and the objects are automatically
   selected based on the selected source objects

. . . . .

```

DB2 OBJECT COMPARISON TOOL

Change Management

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
Compare ----- Specify DB2 Target Catalog Extract ----- 22:33
Option ==> 2

1 - Target is databases from the DB2 catalog
2 - Target is table spaces from the DB2 catalog
3 - Target is tables from the DB2 catalog
4 - Add schema objects to the DB2 Target catalog

Specify compare version file output:
Version table entry:
Owner . . . dba104 > (? to look up
Name . . . ss12 - > (? to look up
Data set:
Data set name . . compare.target.ver0326

Enter a description (optional):
Description . .

. . . . .

```

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
Compare ----- DSNB Compare Add Table Spaces ----- 22:34
Option ==>

Enter the partial name of the table space you want to add to the compare
operation:

Partial database name . . : SSEMMD%
Partial table space name . . : SS12%
Location name . . . . . : >

Press Enter to search for the table spaces.

. . . . .

```

Identify the object(s) that make up the target

DB2 OBJECT COMPARISON TOOL

Change Management

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
-----
Compare ----- DSNC Compare Add Table Spaces ----- Row 1 to 8 of 8
Command ==>
                                           Scroll ==> CSR

Valid line commands are:
S - Select (add)
                                           Location: NDCDB203

Select Database Space Action
-----
SSEMMDDB SS12001
SSEMMDDB SS12002
SSEMMDDB SS12DPT
*  SSEMMDDB SS12EMP Added
-  SSEMMDDB SS12EPA
SSEMMDDB SS12PJA
SSEMMDDB SS12PRJ
SSEMMDDB SS12SPL
***** END OF DB2 DATA
    
```

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
-----
Compare ----- Specify Target DB2 Table Spaces ----- Row 1 to 2 of 2
Command ==>
                                           Scroll ==> CSR

Commands: RESET
Line commands:
D - Delete I - Insert

Select Database Space Location
-----
*  . . . . .
-  SSEMMDDB SS12EMP NDCDB203
***** END OF DB2 DATA *****
    
```

DB2 OBJECT COMPARISON TOOL

Change Management

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
-----
Compare ----- DB2 Object Comparison Tool Menu ----- 22:37
Option ==> _

1 - Specify compare source (new)
2 - Specify compare target (old)
3 - Specify compare masks
4 - Specify fields to ignore
5 - Generate compare job

W - Walk through steps 1 - 5 in sequence
V - Generate job to extract version file from source on
R - Reset status

S - Save dialog
M - Manage/Restore dialog
MC - MultiCompare

Status:
DB2 catalog extract specified
DB2 catalog
None specif
Using defau
Not generat

```

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
-----
Compare ----- Specify Compare Masks -----
Option ==>

Mask Table Entry:
Owner . . DBA104 > (? to look up)
Name . . SS11SS12 > (? to look up)
Data Set:
Mask DSN . . _
Options:
Edit Mask . . YES (Yes/No)

```

Define the mask – map the objects to compare
Pick from masks registered in the Change Management Data Base
Or Create a mask file

DB2 OBJECT COMPARISON TOOL


Change Management - Masks

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
DB2 Admin ----- CM - Masks ----- Row 1 to 1 of 1
Command ==>                               Scroll ==> CSR
Select by typing '+'
Line commands:
  U - Update  DEL - Delete  INS - Insert  ML - Mask lines  CH - Changes
  E - Edit    I - Details on mask

Sel          ID Owner   Name          Comment
          * *      *
-----
+ 21 DBA104  SS11SS12
***** END OF DB2 DATA *****

```

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DB2 OBJECT COMPARISON TOOL

Change Management – Masks

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
DB2 Admin ----- Change Management (CM) ----- 23:09
Option ==> 2_

1 - Manage changes
2 - Manage masks
3 - Manage ignores
4 - Manage versions
5 - Manage ID table
6 - Report changes
    
```

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
DB2 Admin ----- CM - Manage Masks ----- 23:10
Option ==> 2_

1 - Display masks
2 - Create a mask

DB2 System: DSNC
DB2 SQL ID: DBA104
    
```

Masks can be defined in the Change Management Data Base

```

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```

```

Enter display selection criteria (Using a LIKE operator, criteria not saved):
Name . . . . . > Created by . . . . . >
Owner . . . . . > Altered by . . . . . >
Created within . . . . . Mask ID . . . . .
Altered within . . . . .

MBA a
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```

DB2 OBJECT COMPARISON TOOL

Change Management – Masks

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
DB2 Admin ----- CM - Insert Mask ----- 23:11
Command ==>
INSERT stmt executed

Owner . . . DBA104 > (Optional, default is DBA104)
Name . . . SS11SS12 > (Required,
Comment . . . _
    
```

Step 1: is to Create a Mask – inserts a row into the Change Management Data Base Table

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
DB2 Admin ----- CM - Manage Masks ----- 23:11
Option ==> 1_

1 - Display masks
2 - Create a mask

DB2 System: DSNC
DB2 SQL ID: DBA104

Enter display selection criteria (Using a LIKE operator, criteria not saved):
Name . . . . . > Created by . . . . . >
Owner . . . . . > Altered by . . . . . >
Created within . . . . . Mask ID . . . . .
Altered within . . . . .

    
```

Step 2: Display the masks

DB2 OBJECT COMPARISON TOOL

Change Management – Masks

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
DB2 Admin ----- CM - Masks ----- Row 1 to 2 of 2
Command ==> Scroll ==> CSR

Line commands:
U - Update DEL - Delete INS - Insert ML - Mask lines CH - Changes
E - Edit I - Details on mask
    
```

```

Sel      ID Owner      Name
-----
          * *          *
          1 DNET662  MIGMASK
ml_      21 DBA104  SS11SS12
***** END OF DB2
    
```

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
DB2 Admin ----- CM - Mask Lines ----- Row 1 to 1 of 1
Command ==> _ Scroll ==> CSR

Mask lines for mask "DBA104"."SS11SS12"
Commands: SAVE
Line commands:
I - Insert D - Delete R - Repeat M - Move A - After B - Before

Sel      Sequence Type      From      To      Oper. T
-----
          * *          *          *          * *
          -----> -----> -----
          1 ?          ?          ?

***** END OF DB2 DATA *****
    
```

*Specify the ML command to display the mask lines
Able to add mask lines using the ISPF interface*

```

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```


DB2 OBJECT COMPARISON TOOL

Change Management – Masks

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
Compare ----- Edit Compare Masks ----- Columns 00001 00072
Command ==>
Scroll ==> CSR

==MSG> Mask Syntax:
==MSG> field:inmask,outmask
==MSG> Fields (hierarchy):
==MSG> COLNAME
==MSG> NAME
==MSG> DBNAME, TSNAME, TBNAME, IXNAME, UDFNAME,
==MSG> UDTNAME, COLLNAME, PKGNAME, PGMNAME, PLNNAME,
==MSG> DBRMNAME, STPNAME, SFNAME, TGNAME, GRPNAME,
==MSG> VCATNAME, GBPNAME
==MSG> BPNAME
==MSG> TSBPNAME, IXBPNAME
==MSG> SGNAME
==MSG> TSSGNAME, IXSGNAME
==MSG> AUTHID
==MSG> OWNER, SQLID, SCHEMA
==MSG> GRANTID
==MSG> GRANTOR, GRANTEE
==MSG> Examples:
==MSG> OWNER: ABC*, DEF*
==MSG> NAME: PRE*, NPRE*

```

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
Compare ----- Edit Compare Masks ----- Columns 00001 00072
Command ==>
Scroll ==> CSR

==MSG>
==MSG> Syntax for info about renamed objects/columns:
==MSG> renameobj: old-name, new-name
==MSG> RENAMECOL: table-name. old-colname, new-colname
==MSG> ( + in col 72 indicates continuation on next line col 1)
==MSG> renameobj:
==MSG> RENAMEDB, RENAMETS, RENAMETB, RENAMEIX
==MSG> Examples:
==MSG> RENAMETB: OLDDOWNER. OLDNAME, NEWOWNER. NEWNAME
==MSG> RENAMECOL: OWNERA. MYTB. OLDCOLNAME, NEWCOLNAME
==MSG>
==MSG> -Warning- The UNDO command is not available until you change
==MSG> _ your edit profile using the command RECOVERY ON.
000001 DBNAME: S$EMMDBA, S$EMMDBB
000010 TSNAME: SS11*, SS12*
000020 TBNAME: SS11*, SS12*
000400 IXNAME: SS11*, SS12*
000500 NAME: S1*, S2*
***** Bottom of Data *****

```

File syntax could also be used

DB2 OBJECT COMPARISON TOOL

Change Management - Ignores

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
Compare ----- DB2 Object Comparison Tool Menu ----- 22:43
Option ==> _

1 - Specify compare source (new)
2 - Specify compare target (old)
3 - Specify compare masks
4 - Specify fields to ignore
5 - Generate compare job

W - Walk through steps 1 - 5 in sequence
V - Generate job to extract version file from source
R - Reset status

S - Save dialog
M - Manage/Restore dialog
MC - MultiCompare

Status:
DB2 catalog extract specified
DB2 catalog extract target specified
Mask specified
Using defaults
Not generated

```

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
DB2 Admin ----- CM - Ignores ----- Row 1 to 1 of 1
Command ==>                               Scroll ==> CSR
Select by typing '+'
Line commands:
U - Update  DEL - Delete  INS - Insert  IL - Ignore lines  CH - Changes
I - Details on ignore

Sel          ID Owner   Name          Comment
          * * * * *
-----
+           1 DBA104  SS11SS12
***** END OF DB2 DATA *****

```

If IGNOREs are stored in the Change Management Data Base can bring up list and SELECT the one to use

DB2 OBJECT COMPARISON TOOL

Change Management – Ignores

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
DB2 Admin ----- CM - Insert Ignore ----- 22:57
Command ==>
INSERT stmt executed

Owner . . . DBA104 > (Optional, default is DBA104)
Name . . . SS11SS12 > (Required, ? to look up)
Comment . . _
    
```

Insert a row for the name of the ignores file

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
DB2 Admin ----- CM - Manage Ignores ----- 22:57
Option ==> 1_

1 - Display ignores
2 - Create an ignore

DB2 System: DSNC
DB2 SQL ID: DBA104

Enter display selection criteria (Using a LIKE operator, criteria not saved):
Name . . . . . > Created by . . . . . >
Owner . . . . . > Altered by . . . . . >
Created within . . . . . Ignore ID . . . . .
Altered within . . . . .
    
```

Display the registered ignores

DB2 OBJECT COMPARISON TOOL

Change Management – Ignores

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
DB2 Admin ----- CM - Ignores ----- Row 1 to 1 of 1
Command ==> _                               Scroll ==> CSR

Line commands:
U - Update DEL - Delete INS - Insert IL - Ignore lines CH - Changes
I - Details on ignore

Sel          ID Owner      Name          Comment
-----
1 DBA104    SS11SS12
***** END OF DB2 DATA *****
    
```

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
DB2 Admin ----- CM - Ignores ----- Row 1 to 1 of 1
Command ==>                               Scroll ==> CSR
SQL warn(+100)
Line commands:
U - Update DEL - Delete INS - Insert IL - Ignore lines CH - Changes
I - Details on ignore

Sel          ID Owner      Name          Comment
-----
IL           1 DBA104    SS11SS12
***** END OF DB2 DATA *****
    
```

Use the IL command to display the ignores detail

DB2 OBJECT COMPARISON TOOL

Change Management – Ignores

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
Compare ----- Specify Ignore Fields: Objects ---- Row 1 to 14 of 18
Command ==> Scroll ==> CSR

Valid line commands are:
U - Update Ignore Fields

Select Object      Ignore Fields
-----
*
u_  GENERIC        None
    SYSCHECKS     None
    SYSCOLUMNS   None
    SYSDATABASE   None
    SYSDATATYPES  None
    SYSFIELDS     None
    SYSINDEXES    None
    SYSINDEXPART  None
    SYSKEYS       None
    SYSPARMS      None
    SYSRELS       None
    SYSROUTINES   None
    SYSSEQUENCES  None
    SYSTABLEPART  None
    
```

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
Compare ----- Select Ignore Fields for GENERIC ----- Row 1 to 4 of 4
Command ==> _ Scroll ==> CSR

Valid line commands are:
S - Select (add) field U - Un-select

Select Fields      Action
-----
*
    BUFFERPOOL
    SPACE
    STORAGE
    PARTITIONING
***** END OF DB2 DATA *****
    
```

Example of the details being displayed for the GENERIC category

DB2 OBJECT COMPARISON TOOL

Change Management – Ignores

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
----- Specify Ignore Fields: Objects ----- Row 1 to 14 of 18
Command ==>
Scroll ==> CSR

Valid line commands are:
U - Update Ignore Fields

Select Object          Ignore Fields
-----
*
*  GENERIC             SPACE
*  SYSCHECKS           None
*  SYSCOLUMNS         None
*  SYSDATABASE         None
*  SYSDATATYPES       None
*  SYSFIELDS           None
*  SYSINDEXES          None
*  SYSINDEXPART        None
*  SYSKEYS             None
*  SYSPARMS            None
*  SYSRELS             None
*  SYSROUTINES         None
*  SYSSEQUENCES        None
*  SYSTABLEPART        None
    
```

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```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
----- DB2 Object Comparison Tool Menu ----- 22:48
Option ==> _

1 - Specify compare source (new)      Status: DB2 catalog extract specified
2 - Specify compare target (old)     DB2 catalog extract specified
3 - Specify compare masks            Mask specified
4 - Specify fields to ignore         Ignore data set specified
5 - Generate compare job              Not generated

W - Walk through steps 1 - 5 in sequence
V - Generate job to extract version file from source only
R - Reset status

S - Save dialog
M - Manage/Restore dialog
MC - MultiCompare
    
```

Ready to generate compare

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DB2 OBJECT COMPARISON TOOL

Change Management

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
-----
Compare ----- Generate Compare Jobs -----
Option ==> _

Specify the following for DB2 Object Comparison Tool:

Worklist information:
Worklist name . . . . . COMPDB (also used as middle qualifier in DSNs)

Compare options:
Suppress DROP of objects . NO (Yes/No)
Suppress DROP of columns . NO (Yes/No)
Suppress adding columns . NO (Yes/No)
Run SQLID . . . . . DBA104 (Blank, a

Change reporting options . NO (Yes/No)

Data set information:
PDS for batch jobs . . . . JCL.CNTL
Prefix for data sets . . . DBA104

Options:
Single compare job . . . . YES (Yes/No)
Member name . . . . . COMPARE (default
    
```

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
-----
Compare ----- Generate Compare Jobs -----
Option ==> _

Specify the following for DB2 Object Comparison Tool:

Member name . . . . . COMPARE (default COMPARE )
Generate apply jobs . . . . YES (Yes/No)
Generate one job . . . . . (Yes, No, or (Per) Process)
Member prefix . . . . . (default APPLY )
As work statement list . YES (Yes/No to append to work stmt list)
Use utility options . . . NO (Yes/No)
Unload Method . . . . . (Unload, Parallel unload, HPU)
Generate templates. . . . YES (Yes/No)
Stop on conversion error. NO (Yes/No)

Optional jobs after Reload or Alter:
Run CHECK DATA . . . . . NO (Yes/No)
Take an image copy . . . B (after: Reload/Alter/Both/None)
Run REORG/REBUILD . . . N (Mandatory, All relevant, None)
Run RUNSTATS . . . . . N (after: Reload/Alter/Both/None)
Run REBIND . . . . . NO (Yes/No)

BP - Change batch job parameters
    
```

Option to generate reports and/or APPLY jobs

DB2 OBJECT COMPARISON TOOL

Change Management

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
-----
Compare ----- Generate Compare Jobs -----
0
DB2 Admin ----- DSNCC Change Management Prompt ----- 22:52
Change Management is optional for SQLID: DBA104 +
Do you wish to use Change Management for this function: _ (Yes/No)

Unload Method . . . . . (Unload, Parallel unload, HPU)
Generate templates. . . . YES (Yes/No)
Stop on conversion error. NO (Yes/No)

Optional jobs after Reload or Alter:
Run CHECK DATA . . . . NO (Yes/No)
Take an image copy . . B (after: Reload/Alter/Both/None)
Run REORG/REBUILD . . . N (Mandatory, All relevant, None)
Run RUNSTATS . . . . . N (after: Reload/Alter/Both/None)
Run REBIND . . . . . NO (Yes/No)

BP - Change batch job parameters

```

When generating the APPLY jobs – have an option to REGISTER compare in Change Management Data Base

DB2 OBJECT COMPARISON TOOL

Change Management

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
-----
Display Filter View Print Options Help
-----
SDSF OUTPUT DISPLAY DBA104D JOB07709 DSID 109 LINE 44 COLUMNS 02- 81
COMMAND INPUT ==> _ SCROLL ==> CSR
Compare stogroup source(GLWG01) and target(GLWG01)
  No changes to stogroup
Grant(target): Grantor=DSNCADM Grantee:PUBLIC (Kept)
Grant(target): Grantor=DNET064 Grantee:PUBLIC (Kept)
Grant(target): Grantor=DBA104 Grantee:PUBLIC (Kept)

Compare tablespace source(SSEMMDBA.SS11EMP) and target(SSEMMDBB.SS12EMP)
  No changes to Tablespace

Compare table source(SSEMMWLA.SS11EMP) and target(SSEMMWLA.SS12EMP)
  Column LASTNAME
    (A)Type changed from VARCHAR(20) to CHAR(25)
  Tables have identical column lists
  Table will be altered

Compare index source(SSEMMWLA.SS11EMP1) and target(SSEMMWLA.SS12EMP1)
  No changes to Index

Compare index source(SSEMMWLA.SS11EMP2) and target(SSEMMWLA.SS12EMP2)

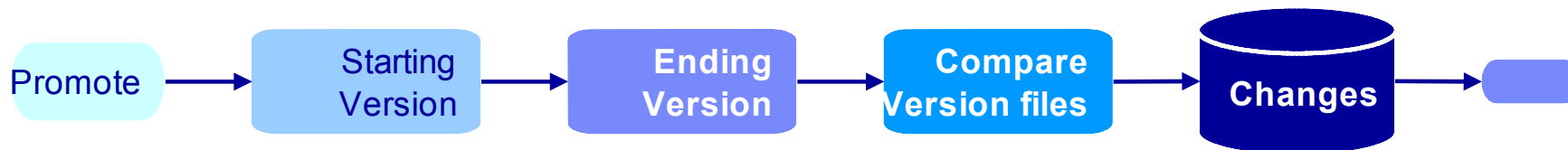
```

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Sample of a Compare Report

DB2 CHANGE MANAGEMENT

Promote

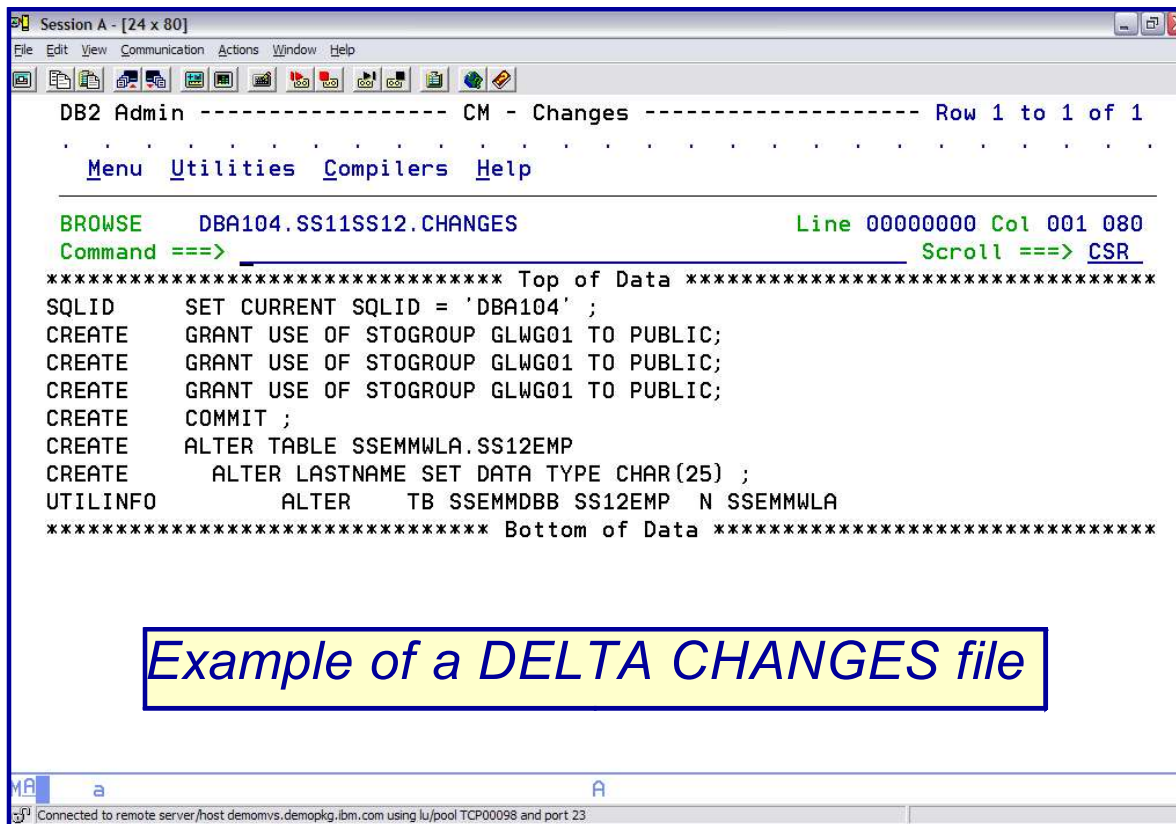


- Provide the ability to PROMOTE changes to a target system
- First need to compare the differences between the 2 systems
 - Requires a START version in the change database and an END version file either from the target or a registered source version
 - Optionally, specify translation masks – for different naming standards between systems
- Generate a DELTA Changes data file
 - Contains SQL statements that represent the differences



DB2 CHANGE MANAGEMENT

Promote



The screenshot shows a terminal window titled "Session A - [24 x 80]". The window contains the following text:

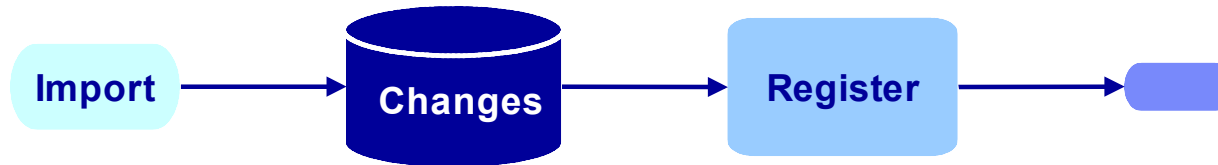
```
DB2 Admin ----- CM - Changes ----- Row 1 to 1 of 1
.
.
.
  Menu Utilities Compilers Help
.
.
.
BROWSE   DBA104.SS11SS12.CHANGES                               Line 00000000 Col 001 080
Command ==> _____ Scroll ==> CSR
***** Top of Data *****
SQLID    SET CURRENT SQLID = 'DBA104' ;
CREATE   GRANT USE OF STOGROUP GLWG01 TO PUBLIC;
CREATE   GRANT USE OF STOGROUP GLWG01 TO PUBLIC;
CREATE   GRANT USE OF STOGROUP GLWG01 TO PUBLIC;
CREATE   COMMIT ;
CREATE   ALTER TABLE SSEMMWLA.SS12EMP
CREATE   ALTER LASTNAME SET DATA TYPE CHAR(25) ;
UTILINFO ALTER   TB SSEMMDBB SS12EMP  N SSEMMWLA
***** Bottom of Data *****
```

At the bottom of the window, there is a status bar that reads: "Connected to remote server/host demomvs.demopkg.ibm.com using lu/pool TCP00098 and port 23".

Example of a DELTA CHANGES file

DB2 CHANGE MANAGEMENT

Import



- Import changes on a target system
- Use “Import changes” option
- Specify the input file created by Promote
- Specify to run online or in batch
- Specify a pre-req action (Pre-req, Supersede, Cancel, Display)
- The change is in DEFINED status
- Repeat on as many other targets as desired



DB2 CHANGE MANAGEMENT

Reports

- Show changes to objects
- Show what changes a person performed
- Allow some predicates to limit changes, by date for example
- Queries the CM DB (static information, not a log)
- Uses Admin panel interface



DB2 CHANGE MANAGEMENT Reports

Available commands

Session A - [24 x 80]

DB2 Admin ----- CM - Changed Objects ----- Row 1 from 182
 Command ==> Scroll ==> CSR

Line commands:
 ST - Statements CH - Change CHA - All Changes CHC - Completed Changes
 CHN - Not Completed Changes

Sel	Change Sequence	Change Owner	Change Name	Object 0	Object Qualifier	Object Name
	* *	*	*	* *	*	*
1	DBA560	EMP	1/30/07	TB	SYS560	EMP
2	DBA560	EMP	1/30/07	TB	SYS560	EMP
1	DBA104	EMP_CHANGE		TB	DBA104	SS01TB02_EMP
1	DBA104	ALTER EMP		TB	SSEMMWLS	GLWTEMP
2	DBA104	ALTER EMP		VW	SSEMMWLS	WLEMP
3	DBA104	ALTER EMP		VW	SSEMMWLS	WLEMP
1	DBA104	ALTER EMP THIRD T		TB	SSEMMWLS	GLWTEMP
1	DBA104	GLWEMP		TB	SSEMMWLZ	GLWTEMP
1	DBA104	SSEMMWLZ.GLWTEMP		TB	SSEMMWLZ	GLWTEMP
2	DBA104	SSEMMWLZ.GLWTEMP		VW	SSEMMWLZ	WLEMP
3	DBA104	SSEMMWLZ.GLWTEMP		VW	SSEMMWLZ	WLEMP

Menu Options View Uti

Connected to remote server/host demomvs.demopkg.ibm.com using lu/pool TCP00098 and port 23

In summary, the DB2 Administration Tool V7.2 has added a new change management process

- Optional or mandatory by userid
- 3 major phases
 - REGISTER a change
 - ANALYZE a change
 - RUN a change
- Additional capabilities include
 - PROMOTE / IMPORTing of changes between systems
 - REPORTing of changes
- Provides control over the management of changes made to DB2 objects



Thank you – are there any questions ???

