



IBM Software Group

# DB2 Test Database Generator for z/OS

## Version 2.1

2 Février 2005

Catherine Chochoy (source: eBU presentation by Ed Lynch, 2004)

DB2 Information Management Software

@business on demand software

IBM Software Group | DB2 Information Management Software



## Agenda

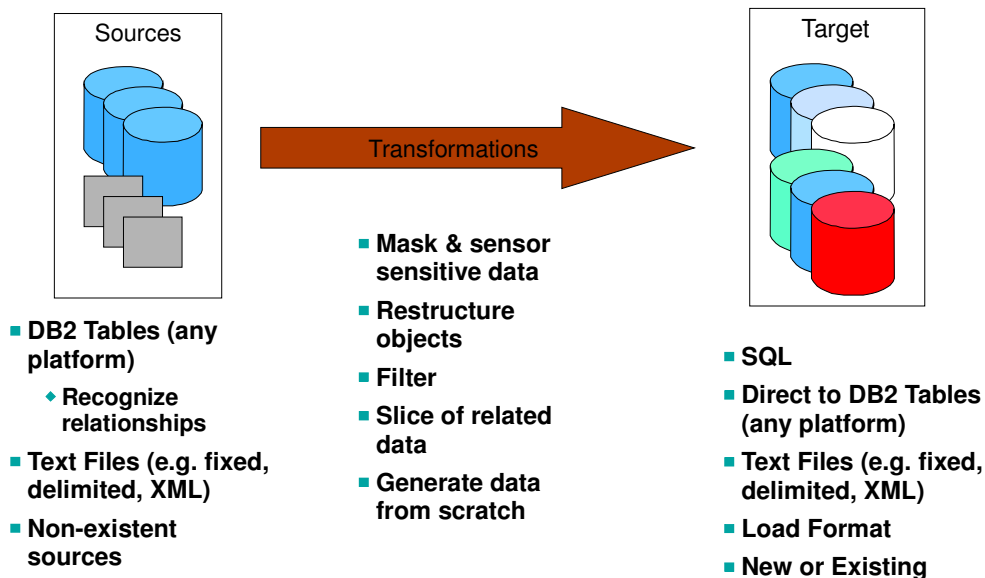
- Test Database Generation Objective
- IBM DB2 Test Database Generator for z/OS  
Version 2.1 Today
  - ▶ Summary of Capabilities
- Terminology and Architecture
- Potential Configurations
- Transformations
  - ▶ Source & Target Specifications
  - ▶ Transformation Rules
- Generation & Results
- Hints & Tips

TDBG = Test Database Generator

## Agenda

- **Test Data Generation Objectives**
- IBM DB2 Test Database Generator for z/OS  
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## Test Data Generation: Customer Requirements



## Agenda

- Test Data Generation Objectives
- **IBM DB2 Test Database Generator for z/OS Version 2.1 Today**
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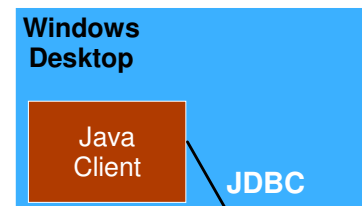
## IBM DB2 Test Database Generator for z/OS Version 2.1 (Today)

- Sources:
  - ▶ DB2 for z/OS Table(s)
    - All Rows
    - Every nth row
    - Random
    - Predicate Filter
  - ▶ Delimited/Fixed Text File
    - Local File
    - FTP site
    - HTTP site
- Relational Relationships (Grouper)
  - ▶ DB2 Defined RI
  - ▶ Application RI
- Choice of Tool Interface
  - ▶ Java Client (Windows)
  - ▶ ISPF
- Transformations
  - ▶ Columns (new, order, name)
  - ▶ Data Attributes - type, lengths, nulls
  - ▶ Filter
  - ▶ Rules:
    - Source Column
    - Static
    - Lookup
    - Mask
    - Expression
    - Random
    - Pattern
- Target Output Formats:
  - ▶ Limit Number of Rows
  - ▶ DB2 Tables (z/OS & Multiplatform)
  - ▶ SQL
  - ▶ Delimited/Fixed Text File
  - ▶ XML
  - ▶ DB2 for z/OS Load Format
- Transferable Outputs

## Agenda

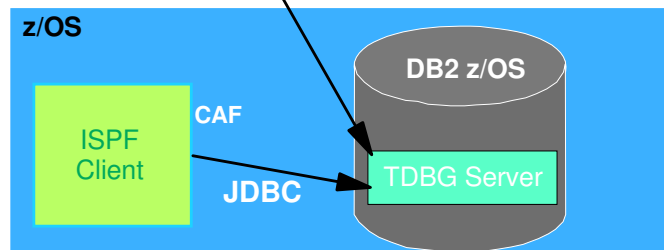
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## TDBG Client



**Java Client**

- ◆ Can also be launched from Control Center
- ◆ and Visa versa



### Java or ISPF Client - Same Capabilities

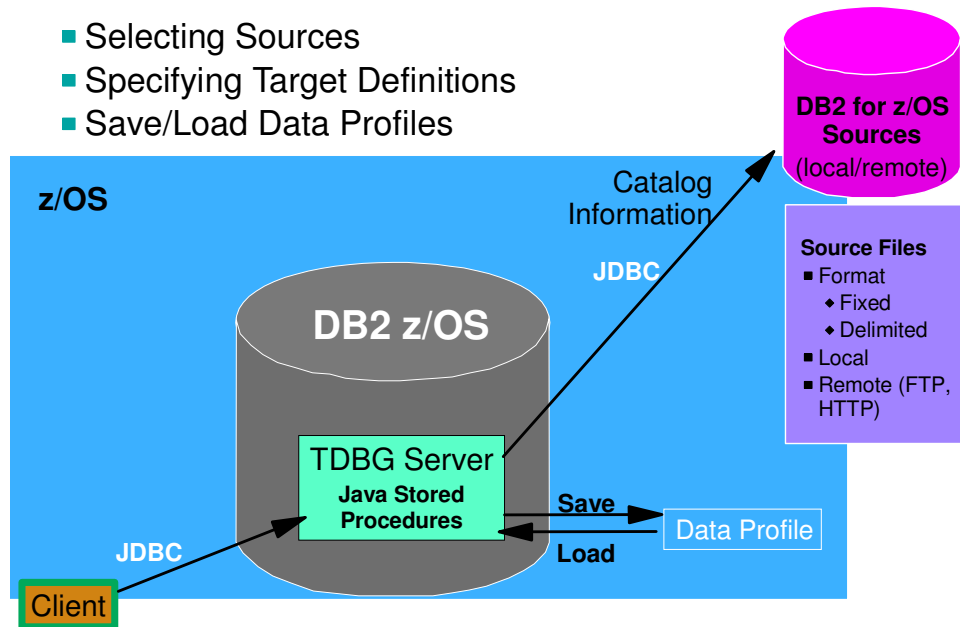
- ➔ Connect to TDBG Server
  - ◆ Implied Connect for ISPF client
- ➔ Select & Add Source(s)
- ➔ Create a Target
  - ◆ Define Transformations
- ➔ Save/Load Data "Profiles"
- ➔ Run the Generator
- ➔ Download Generated Data
  - ◆ Java Client only

### JDBC Drivers Supported

- ◆ Type 2 or
- ◆ Type 4

## TDBG Server and Sources

- Selecting Sources
- Specifying Target Definitions
- Save/Load Data Profiles

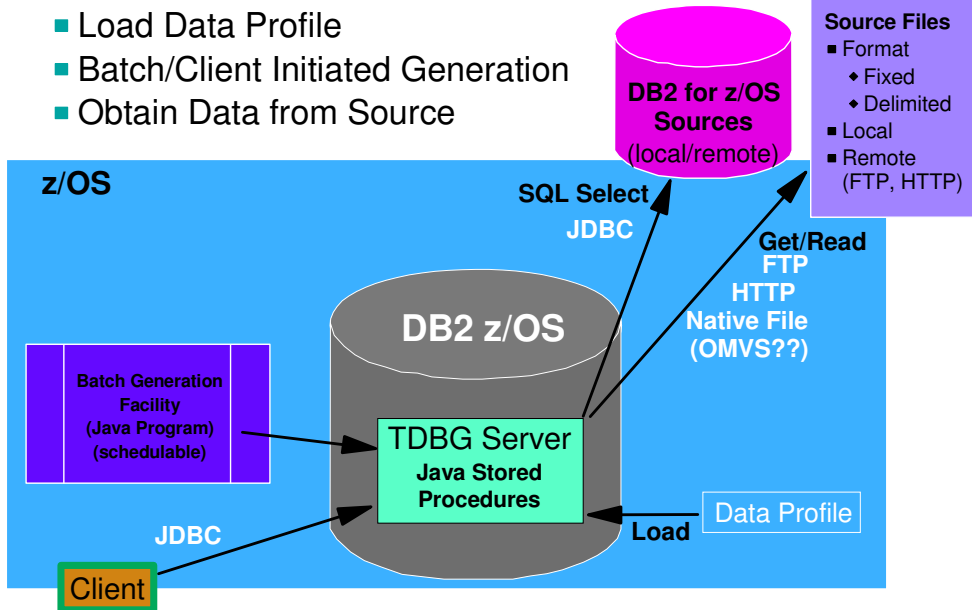


## Data Profiles

- Data Profiles define the generation process
  - ▶ Source data objects used to seed generation
  - ▶ Definition and Relational Rules of the Targets
  - ▶ Describes how data will be copied, filtered, masked, and/or transformed
- Data Profiles
  - ▶ Created by the TDBG Server and
  - ▶ Stored in the HFS where the Server is running
- Data Profiles are written in Test Database Generator Markup Language (a.k.a. GRIML)
  - ▶ GRI: Internal product code
  - ▶ ML: Markup Language
  - ▶ GRIML is an XML-based markup language
- Can manually create using an XML Editor

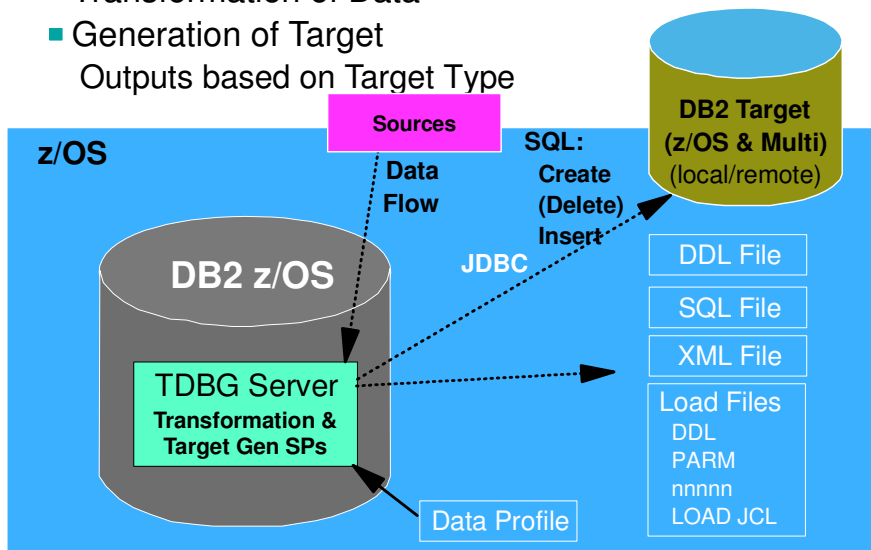
## TDBG Data Generation from Source

- Load Data Profile
- Batch/Client Initiated Generation
- Obtain Data from Source



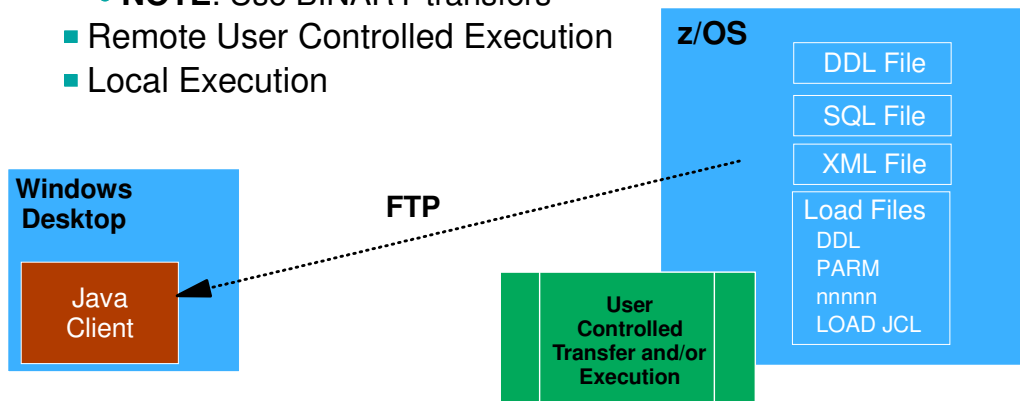
## TDBG Generation of Target

- Transformation of Data
  - Generation of Target
- Outputs based on Target Type

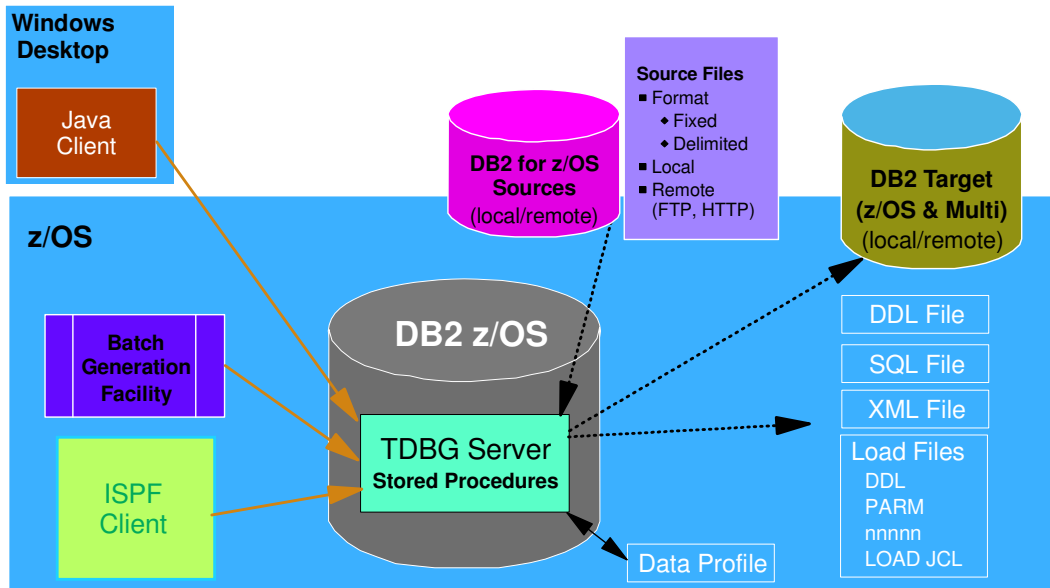


## Using TDBG Outputs

- All output is UNICODE UTF-8
- Download Output
  - Using Java Client to Local or Network Disk Drive
  - User controlled file transfer (e.g. FTP)
  - **NOTE:** Use BINARY transfers
- Remote User Controlled Execution
- Local Execution



## TDBG Overall Architecture



## Agenda

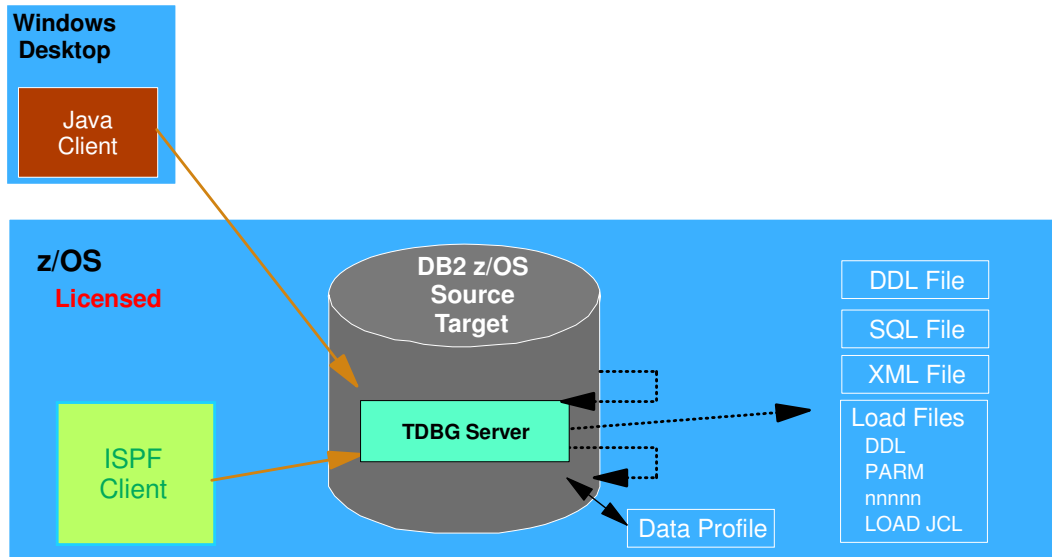
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## Licensing

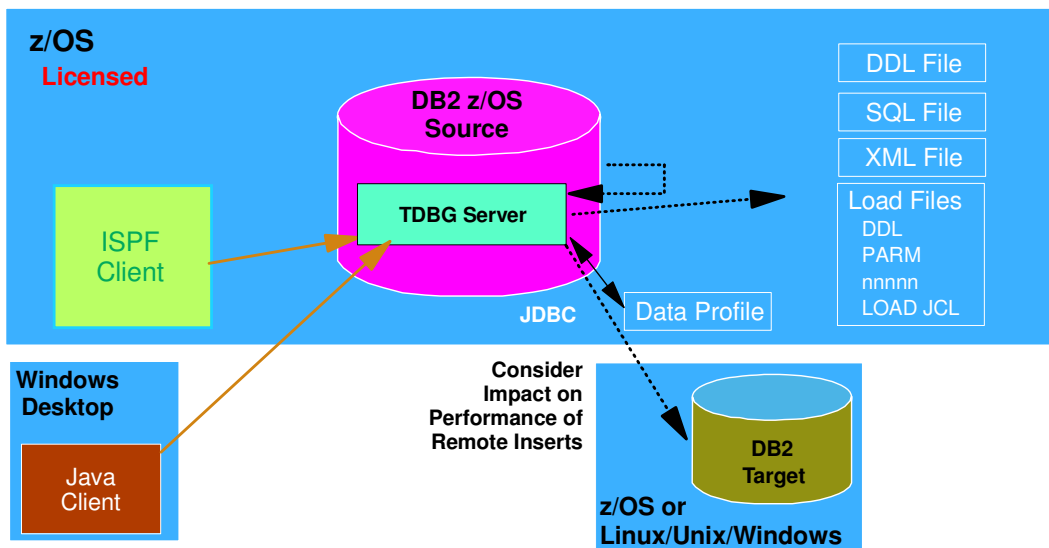
- Charges for Licensing of DB2 Test Database Generator for z/OS is based upon:
  - ▶ Processor where the TDBG Server is Located,  
and
  - ▶ Processor(s) where the Source(s) are Located



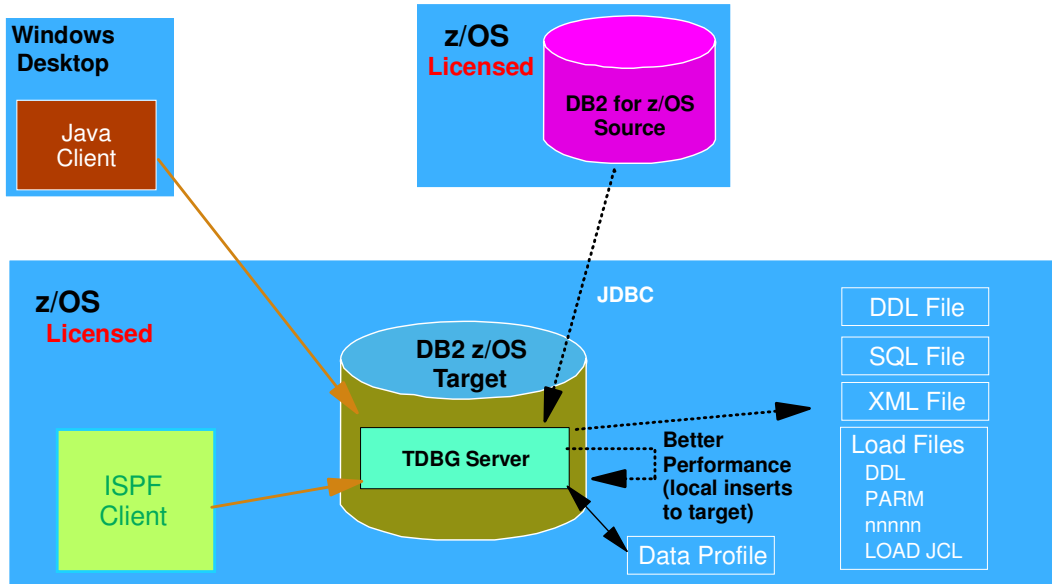
# Combined Source/Target/Server



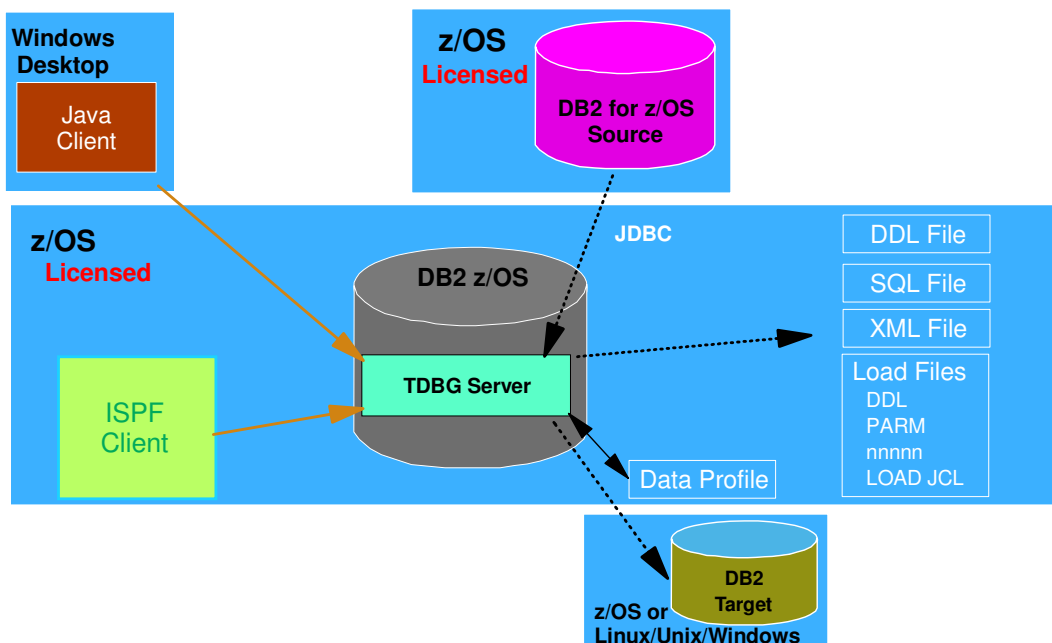
# Combined Source & Server with Remote Target (any platform)



# Combined Target & Server with Remote Source



# Separate Source, Target, & Server



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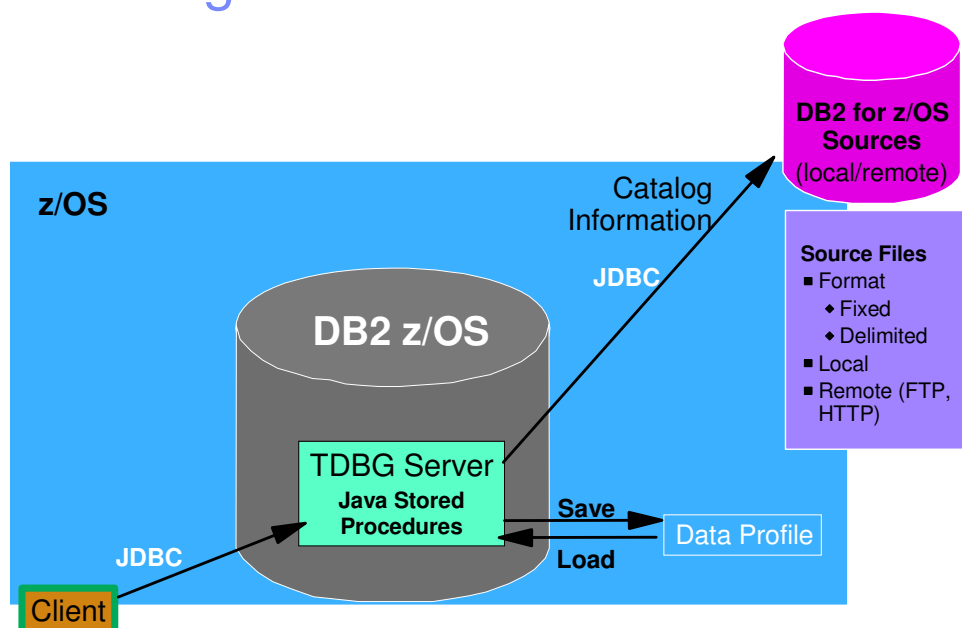
## Data Transformation Capabilities

- Table
  - ▶ Change Table name
  - ▶ Change Table Creator
- Columns
  - ▶ Add (create) / Exclude
  - ▶ Name Change
  - ▶ Order of Columns
  - ▶ Specify / Change Data Attributes
    - Data Type
    - Length(s)
    - Nullability
  - ▶ SQL Transformations
  - ▶ Specify Transformation Rule(s):
    - Source Column
    - Static
    - Lookup
    - Mask
    - Expression
    - Random
    - Pattern
- Row Controls
  - ▶ Filtering via SQL Predicate
  - ▶ Row Range
    - All
    - From x to y
  - ▶ Selection within the Range
    - All
    - Every nth Row
    - Random
  - ▶ Generate data from scratch
  - ▶ Control Number of Rows Generated
- Join / Union Source Tables
- Single Source to Multiple Unique Targets
- Related Tables (Requires Grouper)
  - ▶ Identify and Include
- Target DDL Generation

## Source & Target Specifications

- Data Transformations are Specified
  - ▶ Using the TDBG Client Interface
    - With Either the Java or ISPF Client
  - ▶ While Specifying your Source Object(s) and
  - ▶ While Creating your Target Object(s)
  
- Start Your Client
  - ▶ Connect to the Server
    - Explicitly for Java
    - Implicit with ISPF
      - CLIST Invocation Specifies DB2 Subsystem

## Connecting to a TDBG Server



## Initial TDBG ISPF Client Display

```

Session A - Rocket - [24 x 80]
GRI$MAIN  V2R1  -----  Test Database Generator  -----  2004/01/08  14:16:39
Option ==>  _

Current Server: I71A      Current SQLID SSIBM19      User:  SSIBM19
-----
Data Profile:

1  Sources
2  Targets
3  Generator
4  Load Data Profile
5  Save Data Profile
6  Reset Data Profile

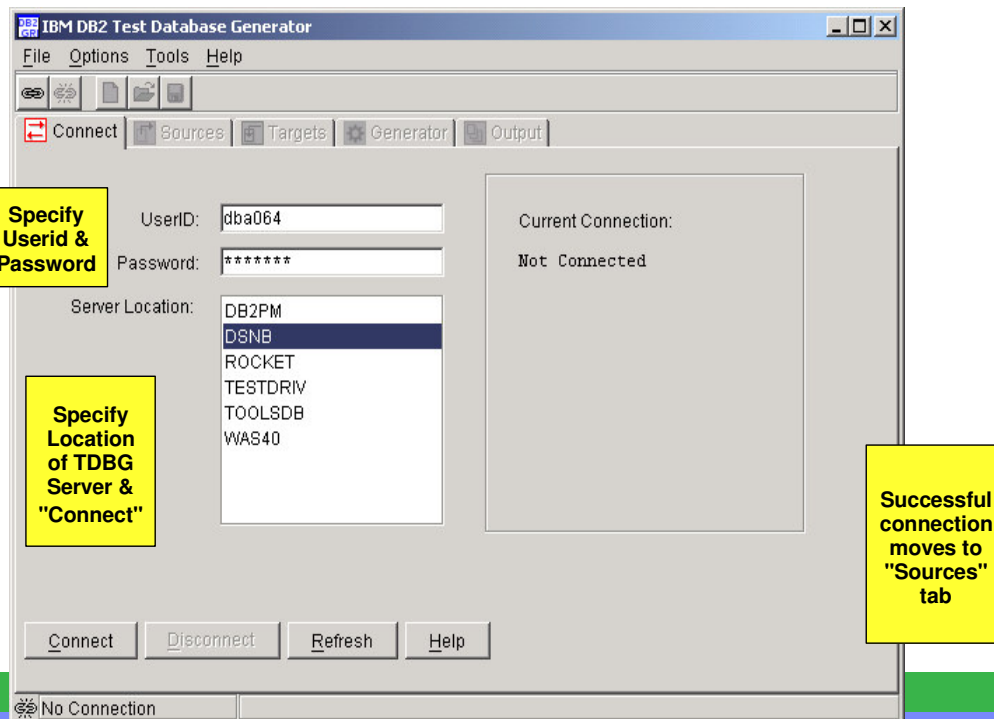
S  Setup
A  About
X  Exit

Note: Order of
Operations.
However, must Save
Profile BEFORE you
can Generate.
(Change Expected)
Path:
      1,2, 5, 3
      OR
      4, 3

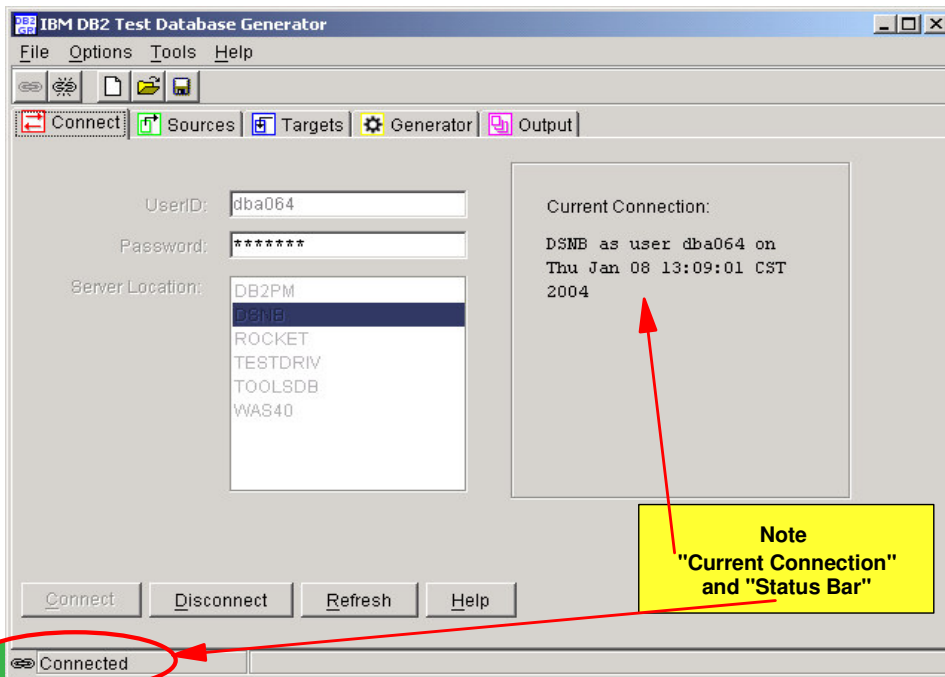
Sources: 0
Targets: 0

Enter END command to return to ISPF, or S to go to the setup screen.
MA  a  02/014
  
```

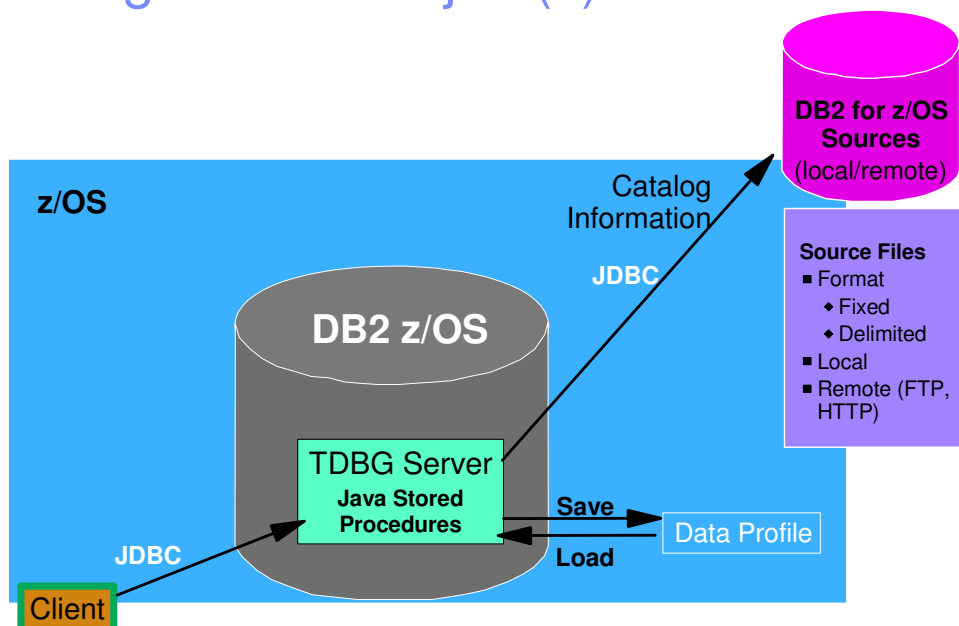
## Connect to TDBG Server (Java Client)



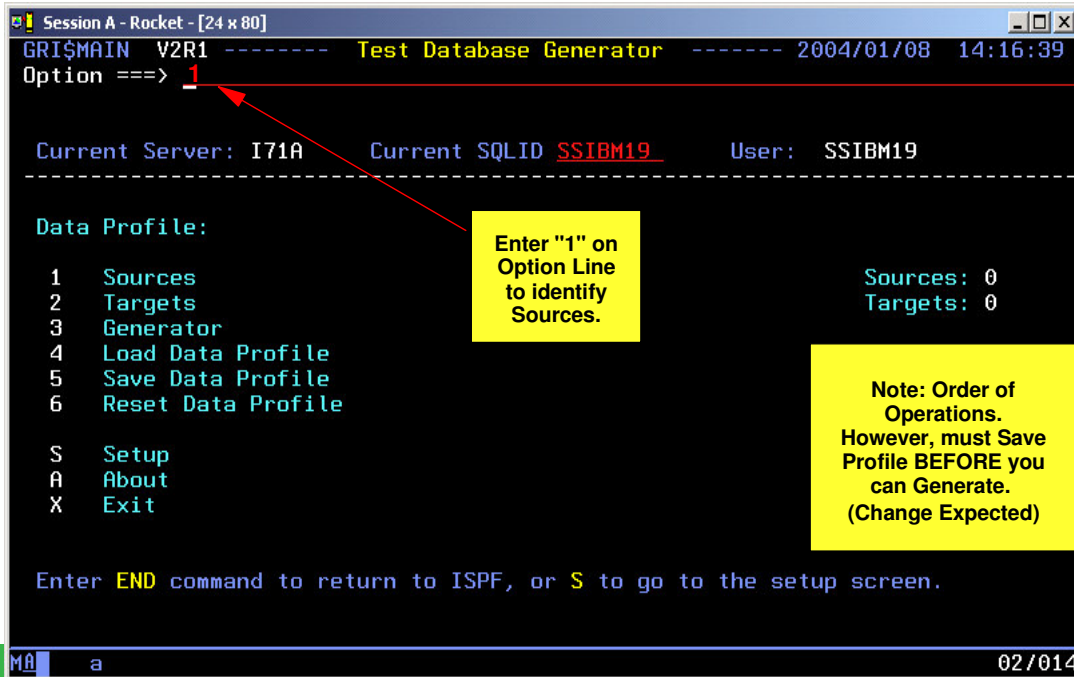
# Successful TDBG Connect Display



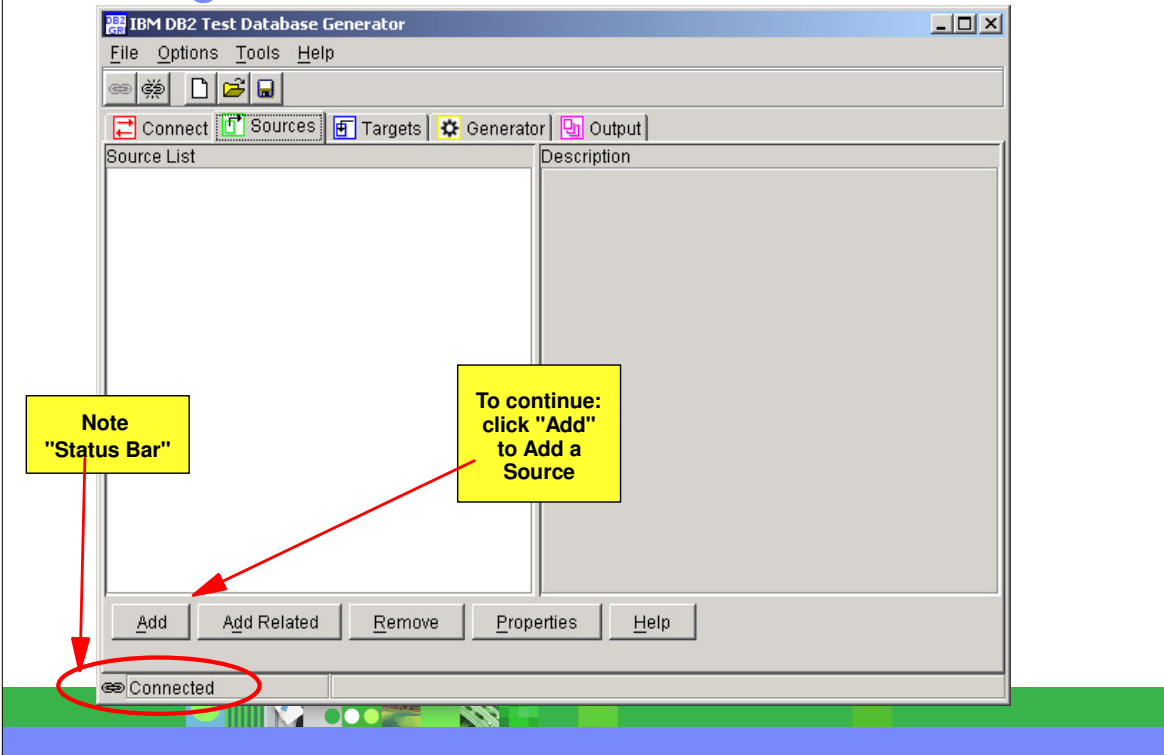
# Defining Source Object(s)



# Initial TDBG ISPF Client Display



# Adding a Source with Java Client



## Source Type & Row Selection Criteria

### Points of Interest for this display:

- Name: Text name you assign to identify the source.
- Type:
  - ◆ SQL - DB2 for z/OS table
  - ◆ CSV - Delimited Text File
  - ◆ TXT - Fixed Text File
- Row Range
- Row Selection
- Auto Create option

Click "Define Contents" to identify the source object. The window that follows is dependent upon the TYPE specified.

## CSV Type - Delimited Text File

### Specify Value Delimiter:

- none, quote, or apostrophe

### Specify Field Delimiter:

- None, comma, Tab, Semicolon, Space

### Source contents access methods:

- Embed - data is placed in "Contents" portion of this panel. (not available on ISPF client)
- FTP - specify URL, userid, & password
- File - specify URL
- HTTP - specify URL



## TXT Type - Fixed Text File

**Source Contents**

**Embed**    URL     Range Delimiter:   
 **FTP**    User ID   
 **File**    Password       
 **HTTP**

Contents

### Specify Value Delimiter:

- Range Delimiter - Comma separated list of "offset" positions within the fixed text file that indicate column positions, must be listed in sequential order. Start at zero.

### Source contents access methods:

- Embed - data is placed in "Contents" portion of this panel.
- FTP - specify URL, userid, & password
- File - specify URL
- HTTP - specify URL

## SQL Type - Location Specification

**Source Contents**

Location:

DB2PM (DB2)  
 DSNB (DB2)  
 ROCKET (DB2)  
 TESTDRIV (DB2)  
 TOOLSDB (DB2)  
 WAS40 (DB2)

Contents

Use pulldown to specify source Location.

Click "From Table" to identify the source table.

## SQL Type - Table Identification

**Table Selection**

Location: DSNB (DB2)

Creator: SYSIBM

Name: L%

Refresh

Available:

**Table Selection**

Location: DSNB (DB2)

Creator: SYSIBM

Name: L%

Refresh

Available:

- SYSIBM.LOCATIONS
- SYSIBM.LULIST
- SYSIBM.LUMODES
- SYSIBM.LUNAMES

OK Cancel Help

- Provide a Creator and Name filter. (Note: Java Client does not allow for tablespace / database filters).
- Click "Refresh"
- Highlight the desired table.
- Click "OK"

## SQL Type - Editable Query is Displayed

**Source Contents**

Location: DSNB (DB2) From Table

Contents

```
-- Query from table SYSIBM.LOCATIONS
-- Thu Jan 08 19:52:11 CST 2004

SELECT
  A.LOCATION, A.LINKNAME, A.IBMREQD,
  A.PORT, A.TPN
FROM
  SYSIBM.LOCATIONS A
ORDER BY
  LOCATION
```

OK Cancel Help

- If desired, Edit the SELECT statement..
- Joins / Unions specified in source SQL specification by either:
  - Editing the SQL statement
  - Use a View as a source
- Click "OK"

# SQL Type - Source Table Specification Completion

Source

Name: SOURCE\_1

Type: SQL Define Contents

Row Range:  All Rows  Row  to

Row Selection:  All  Every   Random

Create Target Automatically

OK Cancel Help

Click "OK" to return to Source List Window.

# Source Table Display Summary

IBM DB2 Test Database Generator

File Options Tools Help

Connect Sources Targets Generator Output

Source List	Description
SOURCE_1	

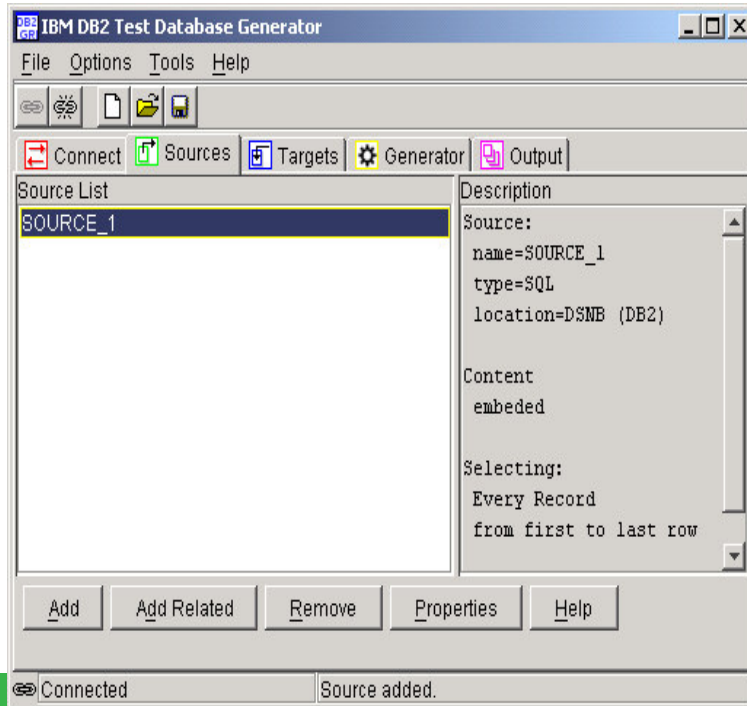
Add Add Related Remove Properties Help

Connected Source added.

### Choices for this display:

- To review Source Description, single click the source item in the "Source List". (see next page)
- Edit the Source, click "Properties"
- Delete the source, "Remove".
- Add Additional source(s).
- Add Related Objects.
- Click "Targets" tab to proceed.

## Example of Source Description Display



## Adding Related Objects

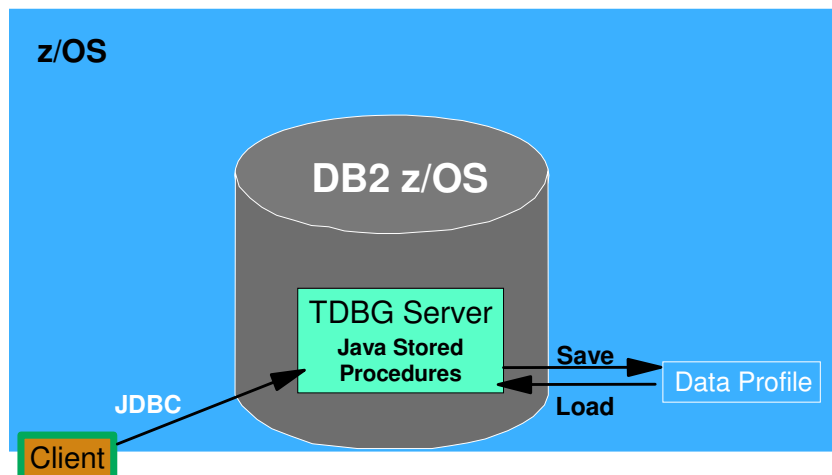
- DB2 Grouper for z/OS Version 1.1 is shipped with
  - ▶ DB2 Test Database Generator for z/OS
  - ▶ DB2 Data Archive Expert for z/OS
- Installation of DB2 Grouper is a Separate Process
- Execution of DB2 Grouper is a Separate Process
- The "Add Related" function of the TDBG's ISPF and Java Client REQUIRES DB2 Grouper.
- DB2 Grouper Provides the Following Capabilities:
  - ▶ Define non DB2-enforced referential constraints (Application RI)
  - ▶ Unit of Work Discovery - Examines DB2 archive log records for objects updated in same UOW.
  - ▶ Group Discovery - discovers relationships between tables combining Application RI, DB2 RI, and UOW Discovery information.
  - ▶ Enables Editing of Group Composition

## Source Specification Data Transformation Capabilities (underlined)

- Table
  - ▶ Change Table name
  - ▶ Change Table Creator
- Columns
  - ▶ Add (create) / Exclude
  - ▶ Name Change
  - ▶ Order of Columns
  - ▶ Specify / Change Data Attributes
    - Data Type
    - Length(s)
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  - ▶ SQL Transformation
  - ▶ Specify Transformation Rule(s):
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  - ▶ Generate data from scratch
  - ▶ Control Number of Rows Generated
- Join / Union Source Tables
- Single Source to Multiple Unique Targets
- Related Tables (Requires Grouper)
  - ▶ Identify and Include
- Target DDL Generation

## Target Specification

Source Information kept in the Data Profile is used by Client and user to Build/Define Target Specifications



## ISPF Client - Starting the Target Specification

```

Session A - Rocket - [24 x 80]
GRI$MAIN  V2R1  -----  Test Database Generator  -----  2004/01/08  23:20:46
Option ==> 2

Current Server: I71A      Current SQLID SSIBM19      User: SSIBM19
-----
Data Profile: presentation

1 Sources                Sources: 2
2 Targets                Targets: 0
3 Generator
4 Load Data Profile
5 Save Data Profile
6 Reset Data Profile

S Setup
A About
X Exit

Enter END command to return to ISPF, or S to go to the setup screen.
  
```

Use Option 2 on the main TDBG panel to start the Target Specification Process

## Java Client - Moving from Source to Target Specification

From Sources Tab, Click the Targets Tab to start the Target table specification. For this example, one source used "Create Target Automatically" = "Y" and the other used "N".

Source List	Description
ORG	Source: name=ORG type=SQL location=SAMPLE (DB2)
EMPLOYEE	Content embedded
	Selecting: Every Record from first to last row

Buttons: Add, Add Related, Remove, Properties, Help

Status: Connected | Source added.

# Target List

**Points to note:**

- ORG table's target created automatically.
- Can ADD or REMOVE targets
- The OPTIONS for ALL targets can be modified/specified
- Columns for a specific target table can be modified.

This target created automatically from "Create Target Automatically" option on Source Definition

Options will be reviewed first

# Target Options Window

**Target Platform choices:**

- DB2 for z/OS
- DB2 for Multiplatforms

**Output format choices:**

- SQL
- Delimited Text
- Fixed Text
- XML
- DB2 (directly to any)
- DB2 for z/OS Load

**Also Note:**

- Creator id to be used for ALL target tables
- Option to generate DDL for target object.
- Options for DB2 as output type
- Options for DB2 Load output type

Click OK when completed.

# Modifying Target Column Properties

**To modify or review the properties of individual columns, or to add/remove columns from the target:**

- Highlight desired table
- Click "Properties" button

The screenshot shows the 'Target List' with 'AUTOTARGET\_1' selected. The 'Description' pane shows target details: name=AUTOTARGET\_1, rows=100. The 'Columns' pane lists: DEPTNUMB SMALLINT (5, 0) 1 Rules, DEPTNAME VARCHAR (14, 0) 1 Rules, MANAGER SMALLINT (5, 0) 1 Rules, DIVISION VARCHAR (10, 0) 1 Rules, LOCATION VARCHAR (13, 0) 1 Rules. The 'Properties' button is highlighted with a red arrow.

# Column Customization

**Target Object Properties:**

- Specify Name of target table (Note: creator id specified in Target Options window).
- The number of rows inserted WILL MATCH the ROWS specification. Use -1 to have row count match number in source.

**Options for Column Customization:**

- Column Order is changed using "UP" and "DOWN" buttons.
- "ADD" / "REMOVE" columns with button
- Include columns from other tables
- Change Column Name by overtyping
- Change Data Type (using pulldown on the column)
- Length (scale)
- Null Attribute.

The 'Target Properties' dialog shows Name: AUTOTARGET\_1, Rows: 100. Selected Column: #1 DEPTNUMB SMALLINT. The 'Rules' tab is active, showing a table of column properties:

Column	Data Type	Length	Precision	Nullable	Rules
DEPTNUMB	SMALLINT	5	0	<input type="checkbox"/>	1
DEPTNAME	VARCHAR	14	0	<input checked="" type="checkbox"/>	1
MANAGER	SMALLINT	5	0	<input checked="" type="checkbox"/>	1
DIVISION	VARCHAR	10	0	<input checked="" type="checkbox"/>	1
LOCATION	VARCHAR	13	0	<input checked="" type="checkbox"/>	1

**To Review or Modify column RULES, click RULES tab.**



## Rules for Target Columns

**Rules MUST be defined for ALL target columns.**

**Note:** If during source specification, the "Create Matching Target = Y" option was used, the "sourcecol" is assigned.

Multiple rules can be created. Order of application can be changed using UP/DOWN buttons.

To modify an existing rule, highlight it, make changes, and click "Update" button.

To add an additional rule, enter properties and click "Add".

## Target Specification Data Transformation Capabilities (underlined)

- Table
  - ▶ Change Table name
  - ▶ Change Table Creator
- Columns
  - ▶ Add (create) / Exclude
  - ▶ Name Change
  - ▶ Order of Columns
  - ▶ Specify / Change Data Attributes
    - Data Type
    - Length(s)
    - Nullability
  - ▶ SQL Transformation
  - ▶ Specify Transformation Rule(s):
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## Transformation Rules

- Transformation rules define the target test data
  - ▶ How to generate test data from source data
  - ▶ How to generate test data from scratch
- Examples
  - ▶ Create a target column PHONE which is the combination of a country code (derived from COUNTRY file), an area code from TABLE1, and a phone number from TABLE2.
  - ▶ Create a target column ACCT\_BALANCE which is a random number that falls within a specified range.
  - ▶ Create a target column that is exactly the PIN column with the 3<sup>rd</sup> and 5<sup>th</sup> positions replaced (masked) with the letter X.

## Rule Terminology - Scopes and Sets

- You define your test data one target column at a time
- The scope of a transformation rule set is target column
- Multiple rules can be specified for each target column
- Transformation rules are applied in order
- Each rule can modify, replace, append, or preface the previous value to allow for incremental building of a target column



## Transformation Rules

- Static Values
- Source Column Values
- Data Lookup
- Data Masking
- Expressions
- Random Values
- Pattern Generation



## Rule 1: Static Values

- Specify static data value
- Source data not used as input for this rule
- Examples
  - ▶ Set target column DIVISION to 12
  - ▶ Set target column STATE to CA
  - ▶ Set target column EXP\_DATE to 2030-12-31

The screenshot shows the 'Target Properties' dialog box for a target named 'AUTOTARGET\_1' with 100 rows. The selected column is '#4 DIVISION VARCHAR'. The 'Rules' tab is active, showing a rule named 'static'. The 'Value' field is set to '12' and the 'Operation' is set to 'replace'. The 'Applied Rules' list shows the rule configuration: 'type="static" op="replace" value="12"'. Buttons for 'Update', 'Add', 'Remove', 'Up', 'Down', 'OK', 'Cancel', and 'Help' are visible at the bottom.

## Rule 2: Source Column Values

- Generate target column value based on source column value
- No transformation (use source data as-is)
- Copies a column value from the currently selected row in a source object
- Used to perform a "copy" function
- Used to supply initial column value from a data source
- TDBG Auto-Target feature uses this rule as the default

The screenshot shows the 'Target Properties' dialog box for a target named 'AUTOTARGET\_1' with 100 rows. The selected column is '#3 MANAGER SMALLINT'. The 'Rules' tab is active, showing a rule named 'sourcecol'. The 'Source' field is set to 'ORG' and the 'Column' field is set to 'MANAGER'. The 'Applied Rules' list shows the rule configuration: 'type="sourcecol" op="replace" source="'. Buttons for 'Update', 'Add', 'Remove', 'Up', 'Down', 'OK', 'Cancel', and 'Help' are visible at the bottom.

## Rule 3: Data Lookup

- Provides a method to replace data based on table lookups
- Uses the current value of the generated column as a key to the lookup
- Specify replacement column
- Example:
  - ▶ Source data has a product code which needs to be represented as a product name
    - PROD\_NAME =  
LOOKUP(PRODUCT\_CODE  
in PRODUCT\_TABLE)

**Target Properties**

Name: AUTOTARGET\_1 Rows: 100

Selected Column: #2 DEPTNAME VARCHAR

Structure Rules

Rule: lookup

Applied Rules: type="lookup" op="replace" source="OR

Source: ORG

Index Column: DEPTNUM

Value Column: DEPTNAME

Not Found: null

Operation: replace

Update Add Remove Up Down

OK Cancel Help

## Rule 4: Mask

- Replace or hide sensitive data
- Masks can be set with static text
  - ▶ Replace account number with a string of X's
  - ▶ Replace last four digits of License ID with 9999
- Mask can be set using a pattern rule (see rule #7)
  - ▶ Replace first character with a letter in the range A-F and then replace the next position with a number between 0 and 9
- Mask can be applied to the entire column or to a substring of the column

**Target Properties**

Name: AUTOTARGET\_1 Rows: 100

Selected Column: #5 LOCATION VARCHAR

Structure Rules

Rule: mask

Applied Rules: type="mask" op="replace" positons="0-

Value: [0-9]\*3

Positions: 0-2

Operation: replace

Update Add Remove Up Down

OK Cancel Help

## Rule 5: Expression

Expression provides a method to call database specific functions

- Supports any expression that can be evaluated by the DBMS in which TDBG is installed
  - ▶ String manipulation, calculations, etc.
- Examples
  - ▶ Calculate the current date / time / timestamp
  - ▶ Evaluate a mathematical expression
    - Target column =  
source column \* 1.1

The screenshot shows the 'Target Properties' dialog box for a target named 'AUTOTARGET\_1' with 100 rows. The selected column is '#6 LAST\_UPDATE DATE'. The 'Rules' tab is active, showing a rule named 'expression'. The 'Value' field contains 'CURRENT DATE' and the 'Operation' is set to 'replace'. The 'Applied Rules' list shows the rule with the expression: 'type="expression" op="replace" value="CURRENT DATE"'. Buttons for 'Update', 'Add', 'Remove', 'Up', 'Down', 'OK', 'Cancel', and 'Help' are visible at the bottom.

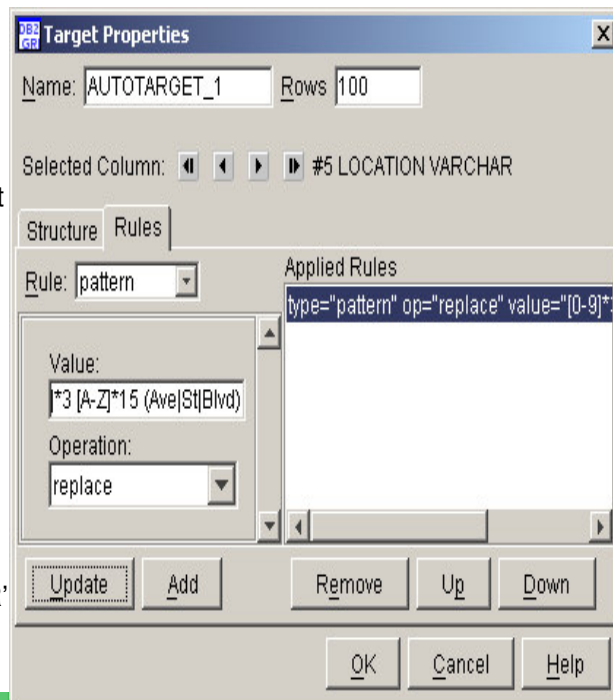
## Rule 6: Random

- Generate a random value
- Allows for creating random date, time, timestamp, integer, and decimal values
- Specify min / max ranges for the generated values
- Randomly generated values are propagated across related tables
  - ▶ Only applies to primary/foreign key relationships that are system or user defined
  - ▶ A DEPT\_CODE that is randomly generated shows up in both the DEPT table and the EMPLOYEE table

The screenshot shows the 'Target Properties' dialog box for a target named 'AUTOTARGET\_1' with 100 rows. The selected column is '#6 AVG\_SALARY DECIMAL'. The 'Rules' tab is active, showing a rule named 'random'. The 'Type of Value' is set to 'decimal', with a 'Min' value of '25000.00' and a 'Max' value of '1000000.00'. The 'Operation' is set to 'replace'. The 'Applied Rules' list is empty. Buttons for 'Update', 'Add', 'Remove', 'Up', 'Down', 'OK', 'Cancel', and 'Help' are visible at the bottom.

## Rule 7: Pattern

- Generate data based on a specified pattern
  - Numeric pattern
    - ▶ [0-9] evaluates to any single-digit number
  - Character pattern
    - ▶ [A-Z]\*3 evaluates to any three-character uppercase string
    - ▶ Character patterns are randomly selected at generation runtime
  - String pattern
    - ▶ (Mrs|Mr|Ms) evaluates to 'Mrs', 'Mr', or 'Ms'.
    - ▶ (C[ATO] | A[KLR]) evaluates to 'CA', 'CT', 'CO', 'AK', 'AL', or 'AR'

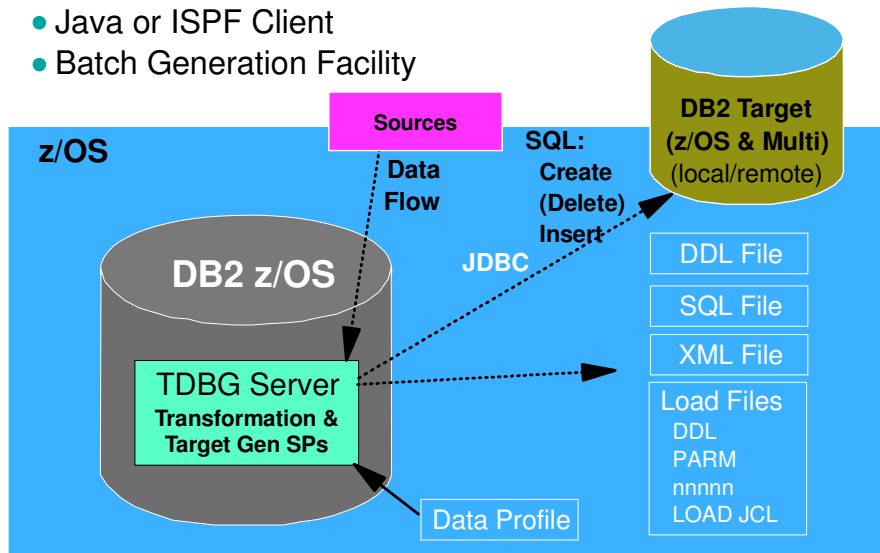


## Agenda

- Test Database Generation Objective
- IBM DB2 Test Database Generator for z/OS Version 2.1 Today
  - ▶ Summary of Capabilities
- Terminology and Architecture
- Potential Configurations
- Transformations
  - ▶ Source & Target Specifications
  - ▶ Transformation Rules
- **Generation & Results**
- Hints & Tips

# TDBG Generation

- Initiated by:
  - Java or ISPF Client
  - Batch Generation Facility



# Data Generation

```

Session A - Rocket - [24 x 80]
GRI$MAIN V2R1 ----- Test Database Generator ----- 2004/01/11 18:18:04
Option ==>

Current Server: I71A      Current SQLID SSIBM19      User: SSIBM19
-----

Data Profile: presentation

1 Sources                Sources: 2
2 Targets                Targets: 0
3 Generator              -
4 Load Data Profile
5 Save Data Profile
6 Reset Data Profile

S Setup
A About
X Exit

Enter END command to return to ISPF, or S to go to the setup screen.
    
```

■ Before Generating (Option 3), first use option #5 Save Data Profile.  
 ■ Then use Option #3 Generator to proceed.



## Start the Generation Process

```

Session A - Rocket - [24 x 80]
GRI$GENE V2R1 ----- Data Generation ----- 2004/01/11 18:24:31
-----
DB2 Subsystem: I71A
1 Start Generating      Data Profile: presentation
2 Stop Generating
3 View Existing Log

Current Status:
-----

Option ==> 1          Scroll ==> PAGE
MA a                24/014
  
```

- Start or Stop Generating
- View generation log

## Generation Results Log

```

Session A - Rocket - [24 x 80]
GRI$GENE V2R1 ----- Data Generation ----- 2004/01/11 18:27:18
-----
DB2 Subsystem: I71A
1 Start Generating      Data Profile: presentation
2 Stop Generating
3 View Existing Log

Current Status: STOPPED
-----
18:24:44 (5655) DB2 Test Dbase Generator z/OS
18:24:48 init: Location RS01I71A (DB2)
18:24:48 init: Location Driver=DSNAJDBC DSN0701
18:24:48 init: Location isolation = READ_COMMITTED
18:24:48 init: Locations 1 of 1
18:24:48 init: Source SOURCE1
18:24:48 Generator.init(): S:com.ibm.db2.gri.server.GriException: SourceProcess
18:24:48 deinit: Sources end
18:24:48 deinit: Targets end
18:24:48 deinit: Locations end
18:24:48 deinit: end=Sun Jan 11 18:24:48 EST 2004
18:24:48 deinit: runningTime=4 sec.
-----

Option ==>          Scroll ==> PAGE
MA a                24/014
  
```

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TDBG = Test Database Generator



## Usage Hints - ISPF Panel Display Customization

- Some ISPF panel fields contain long fields and are left/right scrollable
- TDBG supports Long Object Names, default ISPF Client displays are set to max column width
- Some users Want to Control Other Panel Display Options
  - ▶ CSETUP command when executed on ISPF panels with column objects enables customization of following ISPF columns attributes:
    - FIX - keep selected columns on Left Side of Panel
    - ORDER - control horizontal placement of columns
    - SIZE - size of the column
    - SORT - select column(s) to sort
    - RESET - rollback recent customizations
    - REMOVE - use product defaults
    - Make Customization Permanent or Temporary for User doing customization
  - ▶ See Appendix B of TDBG User's Guide



## Usage Hints - Downloading the Java Client

- Must be FTPed from Host to Workstation. In addition, documentation does not identify the proper file to download.
- FTP in binary
- Instructions for Locating and FTPing Java Client code from Windows workstation:
  - ▶ Start a DOS prompt window
  - ▶ cd to the directory that you will place the code: e.g. c:\temp\tdbg
  - ▶ ftp
  - ▶ open <hostname> (e.g. Dallas demo hostname: demomvs.demopkg.ibm.com)
  - ▶ enter host userid when prompted
  - ▶ enter host password when prompted
  - ▶ cd /usr/lpp/griv2r1/client (or other directory if default install dir not used)
  - ▶ binary
  - ▶ get TDBGClient32.exe (file is about 40 meg)
  - ▶ quit
- Using the "Run" window, locate the file and execute it.

## Additional Hints

- RULE descriptions and examples are documented in Chapter 3 and Appendix D of the DB2 Test Database Generator User's Guide.
- Installation and Configuration requires following skill sets in addition to typical skills used in installing z/OS systems software products:
  - ▶ z/OS
    - z/OS ISPF
    - Java Virtual Machines (JVM)
    - Working with DB2 for z/OS and JDBC installation & configuration
    - Working with OMVS segments
    - Unix Systems Services (USS)
    - DB2 for z/OS Stored Procedure Address Space Enablement and using SQL to create stored procedures.
    - Workload Manager (WLM)
  - ▶ Windows
    - DB2 Connect Installation and Configuration
- DB2 Grouper provides ALL Referential Integrity functionality.
- Any users of DB2 TDBG must have a complete OMVS segment with a shell and home directory

## Documentation & Reference Material

Document Name	Document Number
Program Directory for DB2 Test Database Generator for z/OS Version 2.1	GI10-8516
IBM DB2 Test Database Generator User's Guide	SC18-7411
Fact Sheet - TDBG	GC18-9148
Program Directory for DB2 Grouper for z/OS Version 1.1	GI10-8569
IBM DB2 Grouper User's Guide	SC18-7409

Website for all DB2 Tools, including links to product information, documentation and support information:

<http://www.software.ibm.com/data/db2imstools>

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