

Introduction to the IBM Optim Product Portfolio

Rickard Linck, Information Management, IBM SWG

Topics

- **Fast Forward through**
 - Test Data Management
 - Data Privacy
 - Edit, Browse and Compare
 - Data Archiving
- **A very quick tour but will try highlight some of the most interesting features of the products**

■ IBM Completes Acquisition of Princeton Softech

- ARMONK, NY - **13 Sep 2007**: IBM (NYSE: IBM) today announced it has completed its acquisition of Princeton Softech Inc., a privately held company based in Princeton, New Jersey.

■ Proven leader in *Enterprise Data Management*

- Solving complex data management issues since 1989
- In-depth functional knowledge of mission-critical applications and the business rules that govern them
- Over 2,400 customers worldwide
 - Including nearly half of the Fortune 500
- Only true enterprise solution: across applications, databases and platforms

”Har Ni ert Test Data Management (TDM) system up-to-date?”

- **Tisdag den 3 juni kl.13-16.30 kommer IBM tillsammans med Mainsoft att anordna ett seminarie på IBM Nordic Forum, Kista Entre, Isafjordsgatan 1**
 - Obs: mer fokus på fokus **z/OS** än distribuerat
 - Effektiv och lönsam TDM
 - Presentation och demonstration av vår lösning inom TDM
 - Exempel på en **automatiserad Optim-lösning på z/OS**
 - Hur Optim kan utnyttjas när man bygger upp ett TDM system, som betjänar både systemutveckling och förvaltning

Agenda:

12.30-13.00 Registrering

13.00-13.30 Optim i ett nötskal - en introduktion till IBM Optim / Leif Bäck, Mainsoft

13.30-14.30 Presentation och demo av Optim TDM / Jan Larsson, IBM

14.30-14.45 PAUS

14.45-15.15 Presentation av en automatiserad Optim lösning / Lauri Pietarinen, Relational Consulting

15.15-16.15 Hur beakta kraven från systemutveckling och förvaltning i en TDM-lösning / Hans Benjaminsson, IT-Arkitekterna

16.15-16.30 Frågor & Svar

Optim naming soup

older names

newer names

Relational Tools for Servers?

Archive for DB2?

Data Growth Solution?

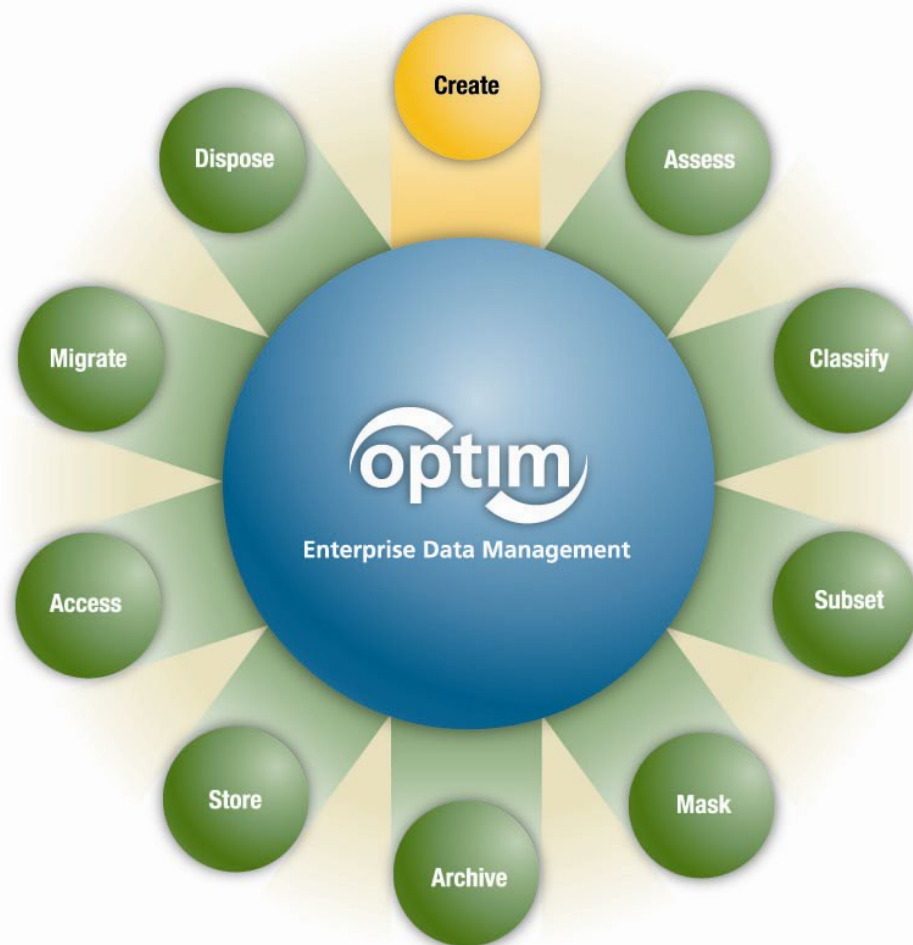
Relational Tools Server Option?

Test Data Management?

Move for Servers?

- Optim Data Growth for z/OS
- Optim TDM Solution
- Optim TDM Solution
- Optim TDM Solution
- Optim TDM Solution Option
- Optim Data Growth
- Optim Data Growth - Server Option

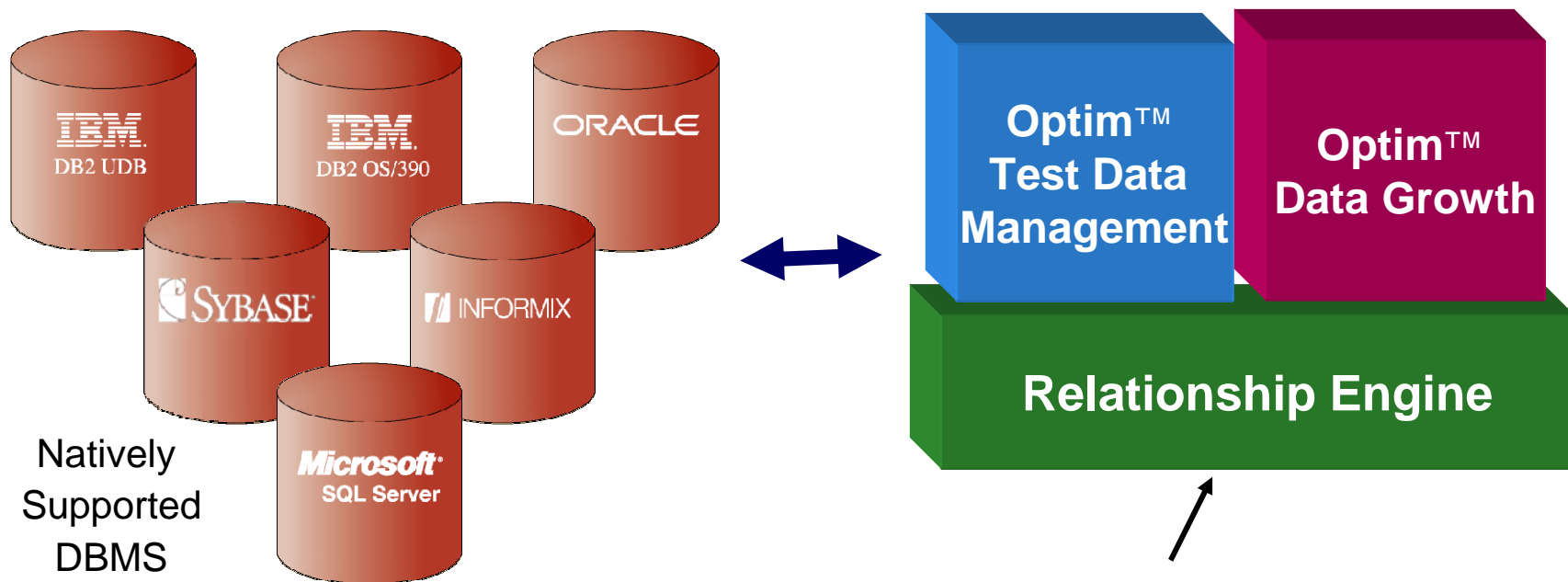
Optim™ Solutions



- **Optim Test Data Management Solution**
 - Create targeted, right sized test environments
 - Improve application quality
 - Speed iterative testing processes
- **Optim Data Privacy Solution**
 - Mask confidential data
 - Comply with privacy policies
- **Optim Data Growth Solution (Archiving)**
 - Improve performance, Operational efficiencies
 - Control data growth, save storage
 - Support retention compliance

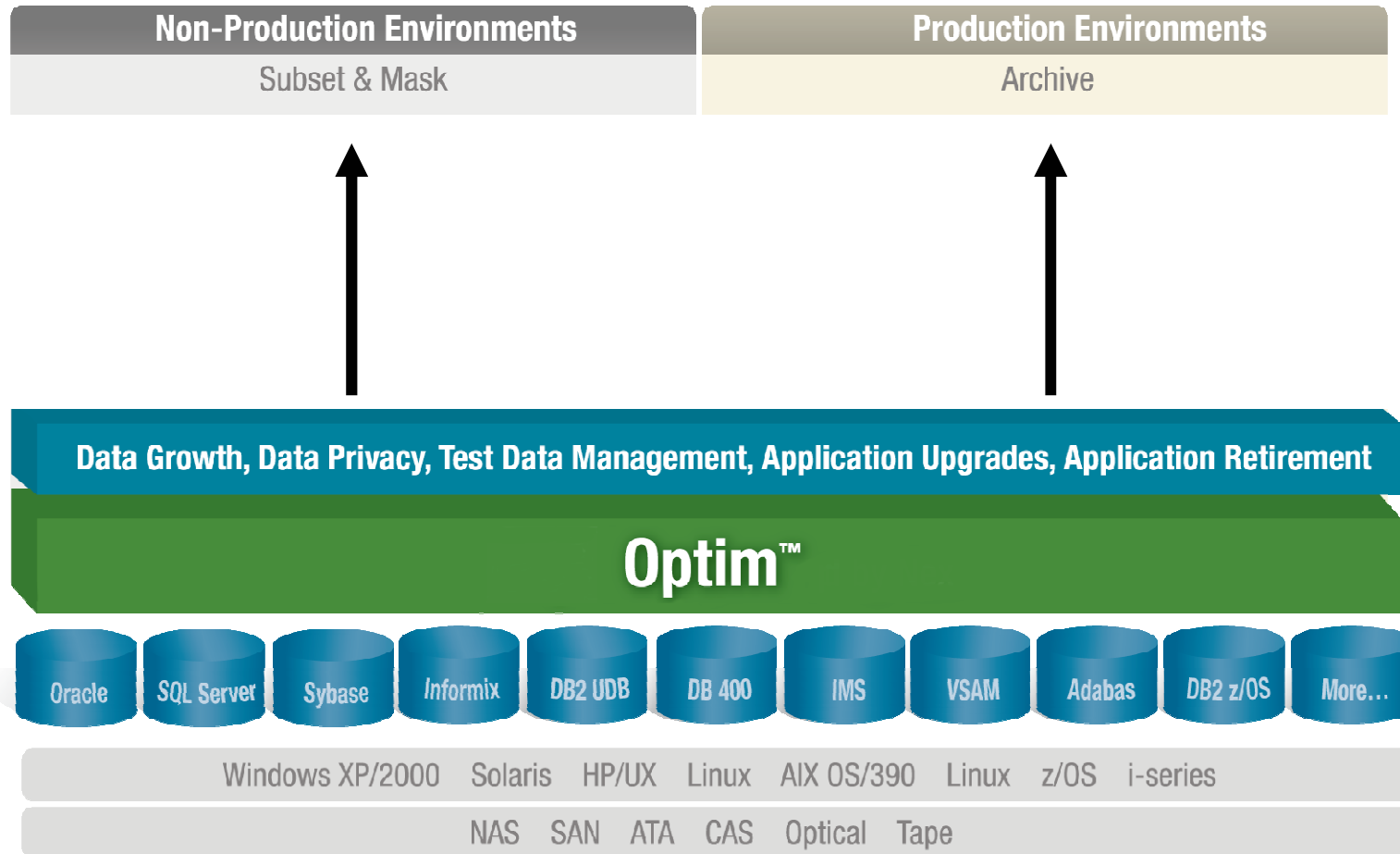
Foundation of the Optim Solution

Technology to define, extract, access and selectively restore referentially intact subsets of related data from cross-platform relational database management systems



- Work with relationships that are defined in the database
- Work with logical relationships that are NOT defined in the database

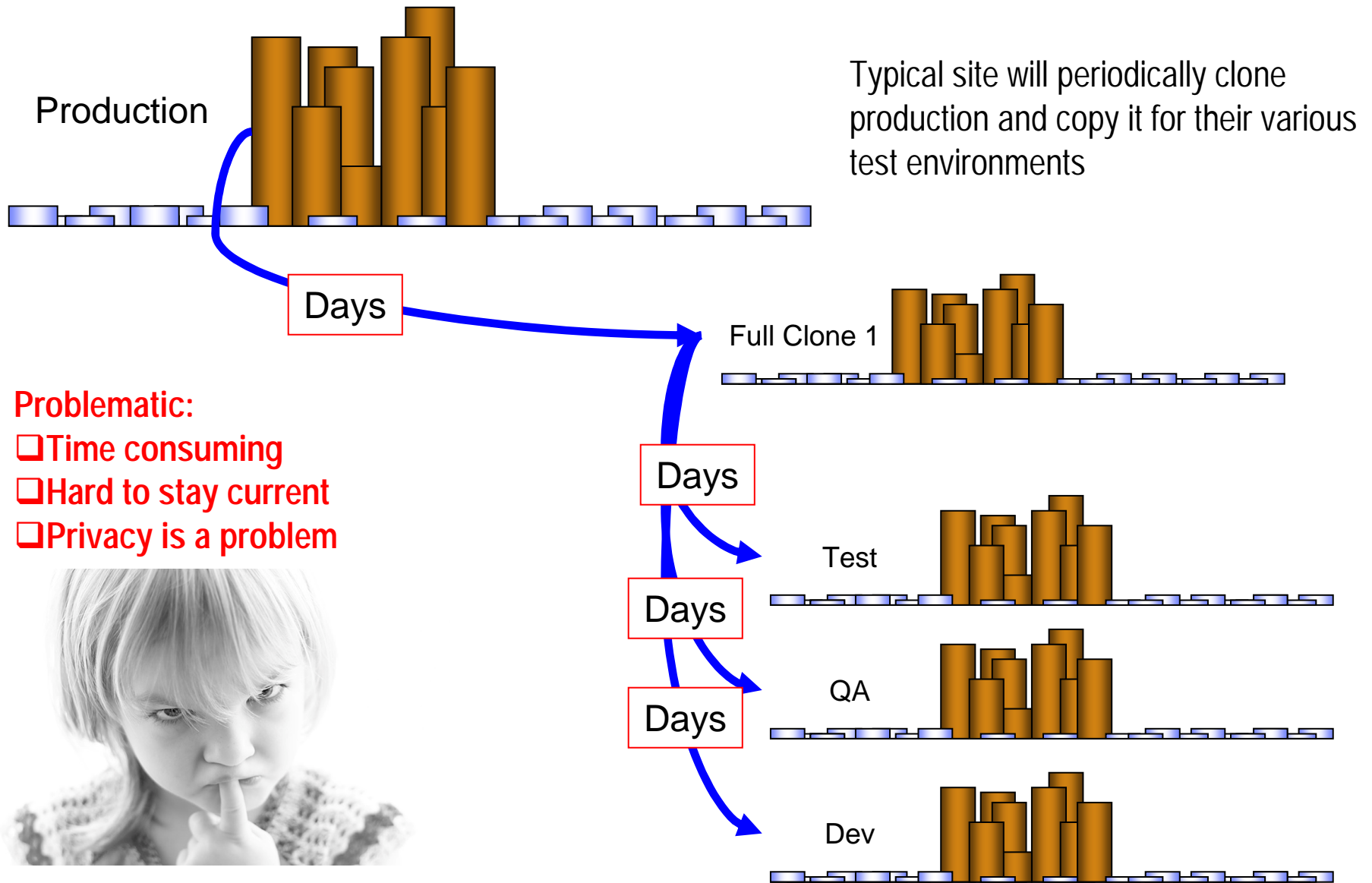
Enterprise Architecture – across dbms/platforms



- Single, scalable, interoperable EDM solution provides a central framework to deploy policies to execute actions based on events within application data records from creation to deletion

Test Data Management

Typical Test Environments Refresh

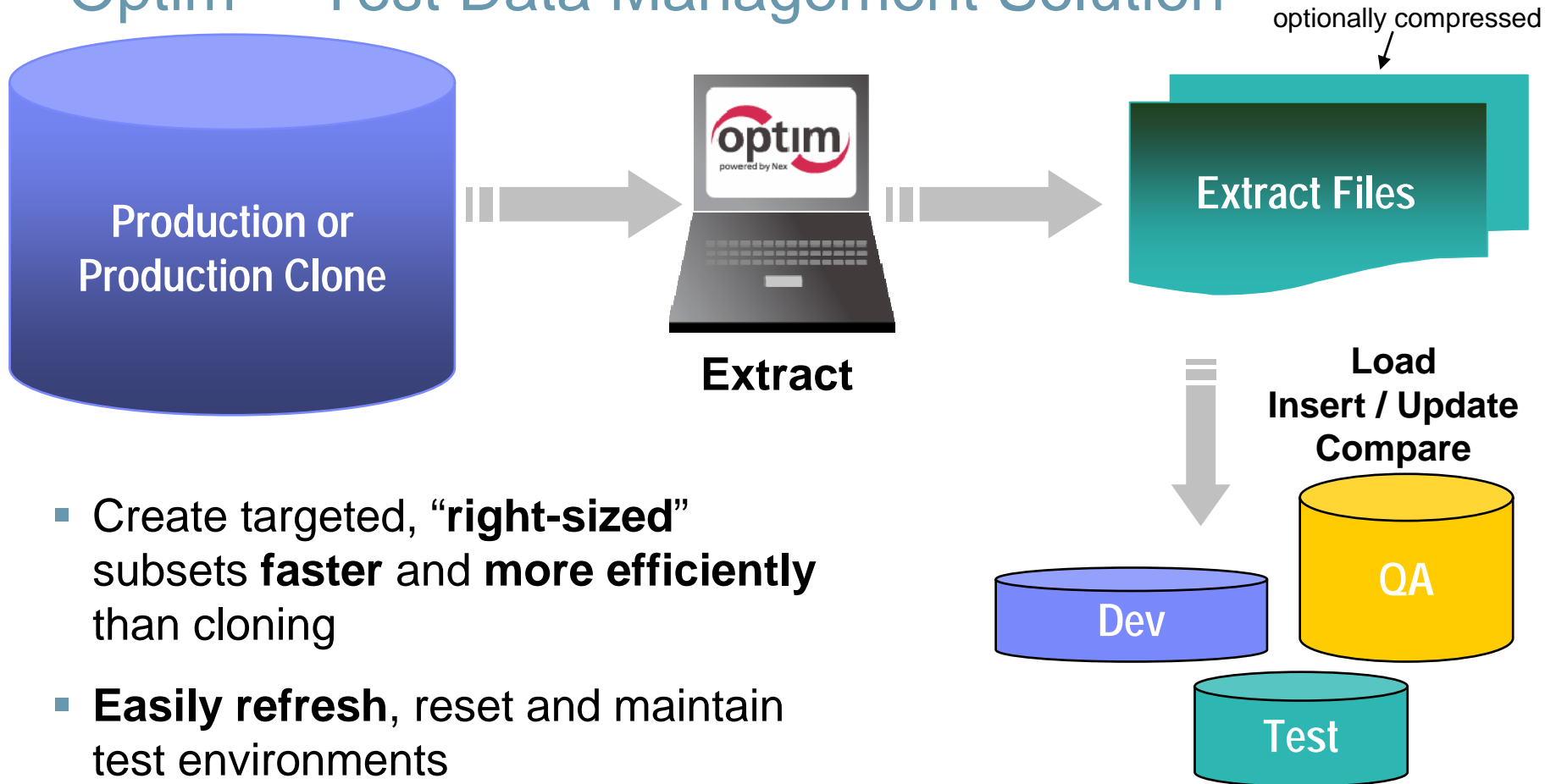


Problematic:

- Time consuming
- Hard to stay current
- Privacy is a problem

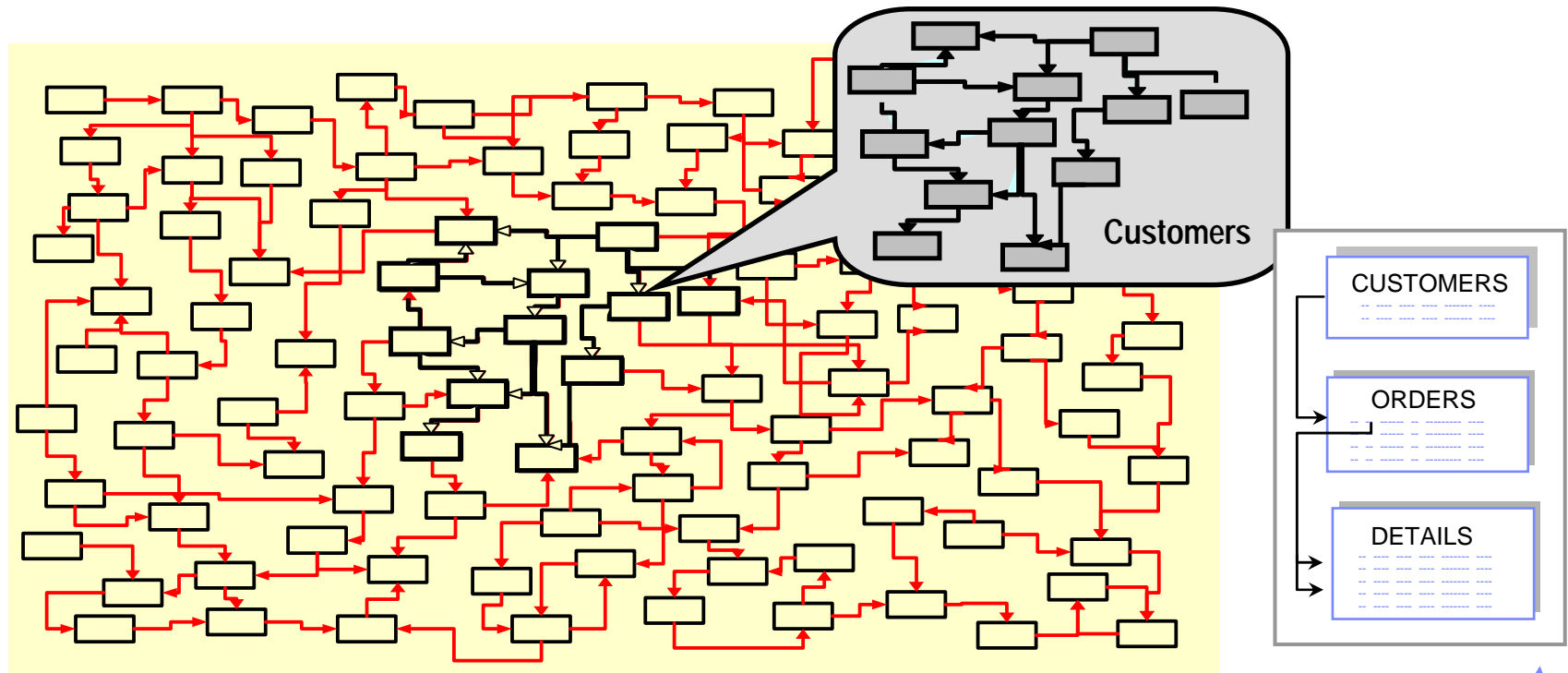


Optim™ Test Data Management Solution



- Create targeted, “**right-sized**” subsets **faster** and **more efficiently** than cloning
- **Easily refresh**, reset and maintain test environments
- Accelerate release schedule

How to get intact and useful data - Complete Business Objects



- Represents application data record – orders, invoices, customer
 - *Referentially (relationally) intact subset of data across related tables and applications; includes metadata*
- Provides “historical reference snapshot” of business activity
- Federated object support across enterprise data stores

Optim Approach for Subsetting

- Add relationships
 - Same instance
 - across instances and database platforms
- Define *Relationship Traversals*
- Criteria can be based on one or more modules
- Date Values
 - Accounting Date
 - Fiscal Year
 - SO Trans Date
- Business Unit, Ledger Groups, Status
- “And/Or” combinations
- Grouping, Every Nth row

PEGLXE.GL_F0911 - Access Definition Editor

File Edit Tools Options Help

Description:

Tables Relationships Variables Point and Shoot

Default Qualifier: ASJDE.TESTDTA

Start Table: F0010

Further Define your criteria...

	Table/View	Type	DBMS	Table Specifications	Ref Tbl	Delete Rows After Archive
1	F0010	Table	Oracle	SQL	<input type="checkbox"/>	<input type="checkbox"/>
2	F0006	Table	Oracle		<input type="checkbox"/>	<input type="checkbox"/>
3	F0901	Table	Oracle		<input type="checkbox"/>	<input type="checkbox"/>
4	F0911	Table	Oracle	SQL AR	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	F0902	Table	Oracle		<input type="checkbox"/>	<input type="checkbox"/>
6	F0011	Table	Oracle		<input type="checkbox"/>	<input type="checkbox"/>
7	F0101	Table	Oracle		<input type="checkbox"/>	<input type="checkbox"/>
8	F0909	Table	Oracle		<input type="checkbox"/>	<input type="checkbox"/>
9	F0012	Table	Oracle		<input checked="" type="checkbox"/>	<input type="checkbox"/>
10	F0025	Table	Oracle		<input checked="" type="checkbox"/>	<input type="checkbox"/>
11	F0008	Table	Oracle		<input checked="" type="checkbox"/>	<input type="checkbox"/>
12	F0911T	Table	Oracle		<input type="checkbox"/>	<input checked="" type="checkbox"/>
13	F0018	Table	Oracle		<input type="checkbox"/>	<input checked="" type="checkbox"/>
14						

Access Definition – select your Start table

The screenshot shows a dialog box titled "Select Access Definition Start Table". On the left, under "DB Alias", there is a tree view with "IDS10" and "ORDERS". A blue arrow points from the text "start table" to the "ORDERS" node. On the right, under "Database Table", there is a table with the following data:

Type	DBMS	DB Alias	Creator ID	Table Name
Table	Informix	ORDERS	se53386	cust_calls
Table	Informix	ORDERS	se53386	customer
Table	Informix	ORDERS	se53386	items
Table	Informix	ORDERS	se53386	manufact
Table	Informix	ORDERS	se53386	msgs
Table	Informix	ORDERS	se53386	orders

Below the table, there is a text field labeled "Enter pattern for Table (DBALIAS.CREATORID.TABLE)" containing the text "ORDERS.se53386.customer". At the bottom, there are buttons for "Select", "Cancel", "Refresh", and "Help".

At the bottom of the dialog, there is a "Show Only" section with radio buttons for "All", "Alias", "Tables", "Views", and "Synonyms". The "All" radio button is selected.

Access Definition – select your DBMS relationships

DB Alias: IDS10, ORDERS

Type	DBMS	DB Alias	Creator ID	Table Name
Table	Informix	ORDERS	se53386	orders
Table	Informix	ORDERS	se53386	cust_calls
Table	Informix	ORDERS	se53386	items
Table	Informix	ORDERS	se53386	stock
Table	Informix	ORDERS	se53386	manufact
Table	Informix	ORDERS	se53386	catalog
Table	Informix	ORDERS	se53386	call_type

Enter pattern for Table (DBALIAS.CREATORID.TABLE): ORDERS.%.%

Buttons: Select, Cancel, Refresh, Help

Show Only:

- All
- Alias
- Tables
- Views
- Synonyms

Find Tables Related to Table:

- Find Tables Related to Table: ORDERS.se53386.customer
- Matching Table Pattern: %.%.%

Options:

- Parents
- Children
- Both

Levels to Search: 1, All Levels

Buttons: Select All Matching, Display

relationally related tables

Relationship Editor - define new relationships

(Untitled) - Relationship Editor

File Edit Tools Options Help

Parent: IDS10.informix.customers Base Creator Id: Type: Optim

Child: IDS10.informix.orders Description:

	Parent Expression	Data Type	Child Expression	Data Type	Status
1	cust_id	CHAR(5)	cust_id	CHAR(5)	OK
2					

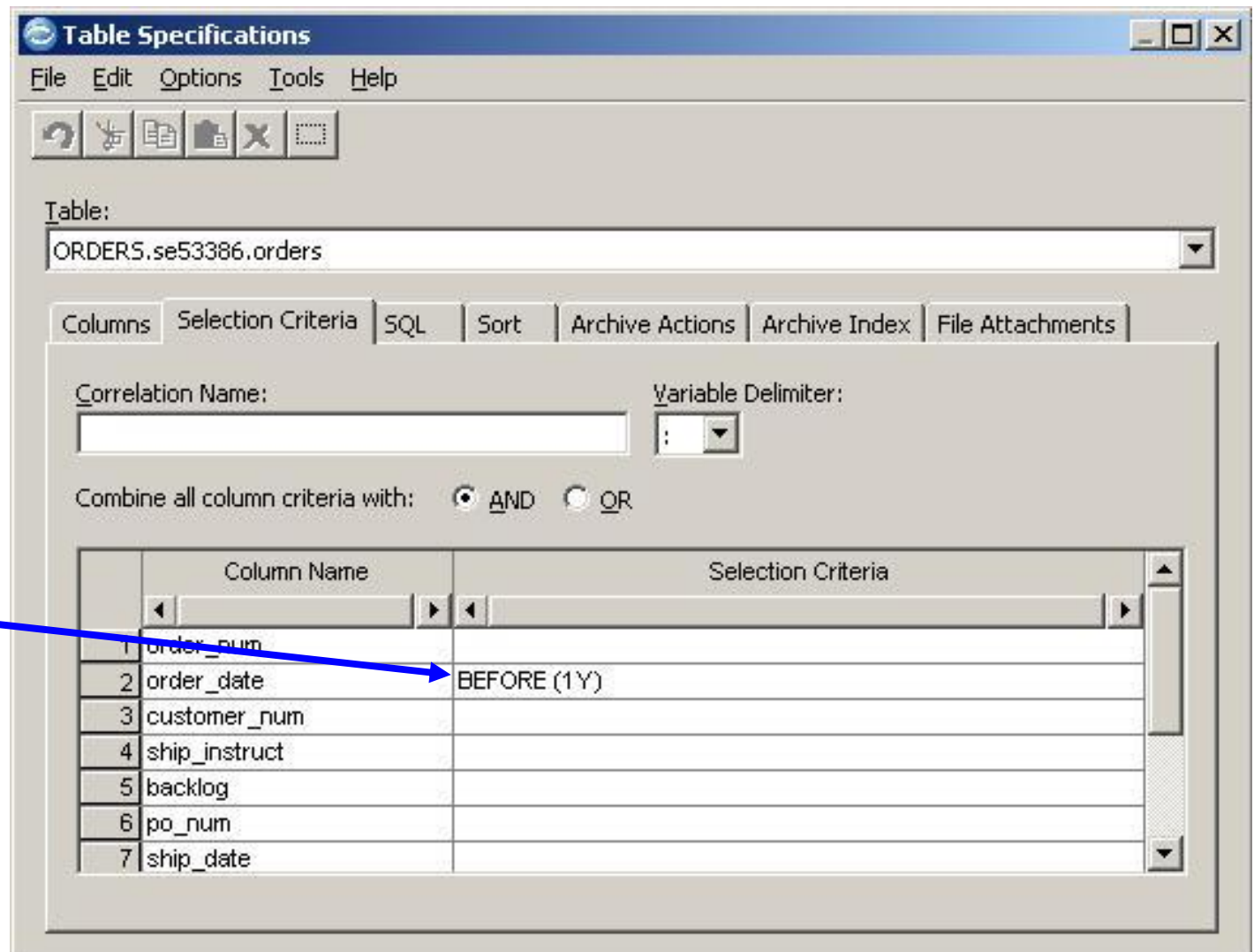
Parent

Child

Typically for relationships that only exists implicitly in application

"Optim" = defined in Optim only, not in DBMS

Access Definition – add your Selection Criteria



order rows
older than
1 year

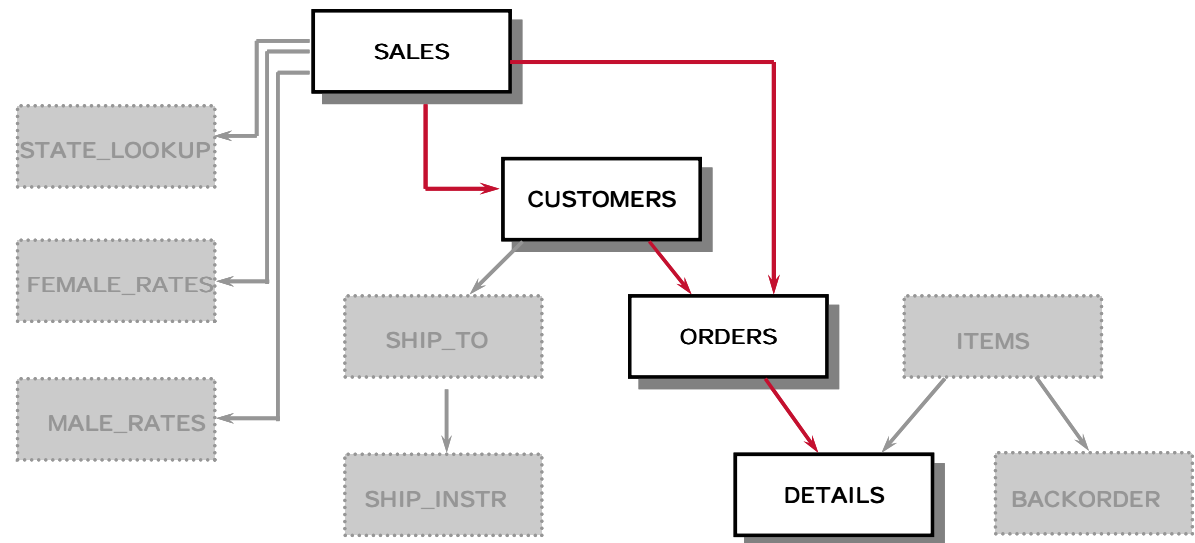
Selection Criteria - For any column in a selected table

- **Appropriate logical or relational operator and corresponding value or list of values.**
- **Can be input/specified at execution time of extraction**
- **Format selection criteria to comply with SQL syntax.**
 - For example, to obtain data for all customers, named from M to Z, in New Jersey, you would specify:
 - CUSTNAME > 'M'
 - STATE = 'NJ'
 - Then, select:
 - **AND** to include all customers who satisfy both conditions, or
 - **OR** to include all customers who satisfy either condition.
- **Date Criteria**
 - If entering selection criteria for a column where the data type is Date, you can use the date format used by the database.
 - Or, you can use the **BEFORE** operator which allows you to specify selection criteria based on a relative date. Specify the BEFORE command as follows:
 - ORDER_DATE BEFORE (1Y)
 - select all entries older than 1 year from today
 - ORDER_DATE BEFORE (1Y - 4M)
 - select all entries from the ORDER_DATE columns that were older than eight months.

Normal Database Relationship Traversal Processing



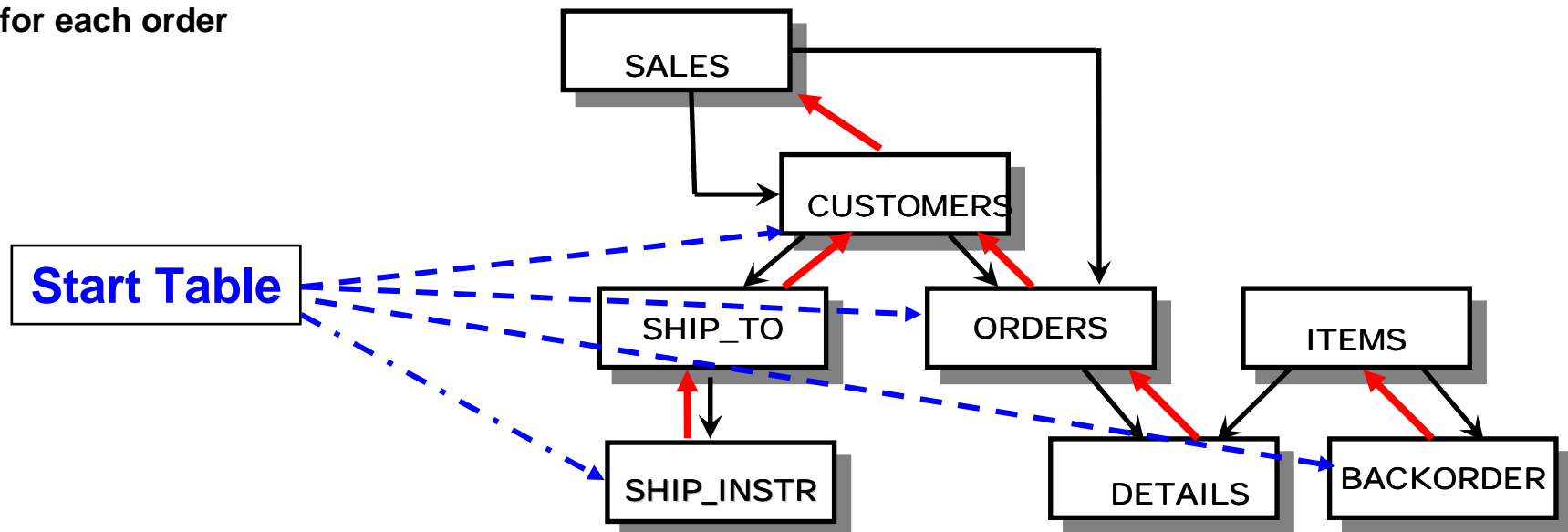
During extract processing, normal traversal of relationships paths proceed like a waterfall through a data model. (Parent -> Child)



What if I need *more* than the direct parent-child data?

Examples

1. Get all customers from New Jersey, with orders placed by those customers, with related details and the salesman for each customer
2. Extract customers who have orders with items on backorder
3. Get all customers who have been shipped orders via 'Eventual Express' and the details of those orders
4. Extract all orders for any customer with year-to-date sales greater than \$10,000.00, that customer's salesman, and that salesman's other orders, but *do not* extract the salesman for each order



Optim Relationship Traversal: Option 1 and Option 2

Option 1:

- Causes processing to follow the relationship in the **opposite direction**
 - flow will proceed **from child table to parent.**

Option 2:

- Causes processing to follow the relationship in the **parent to child direction**, but is only needed when the parent table was processed as a result of following a relationship path upward (option 1) to get to it.

***If** a relationship path is followed upward to the parent as a result of Option 1 being selected on any path to the table,
then Option 2 must be selected to follow a relationship path to a child of that table*

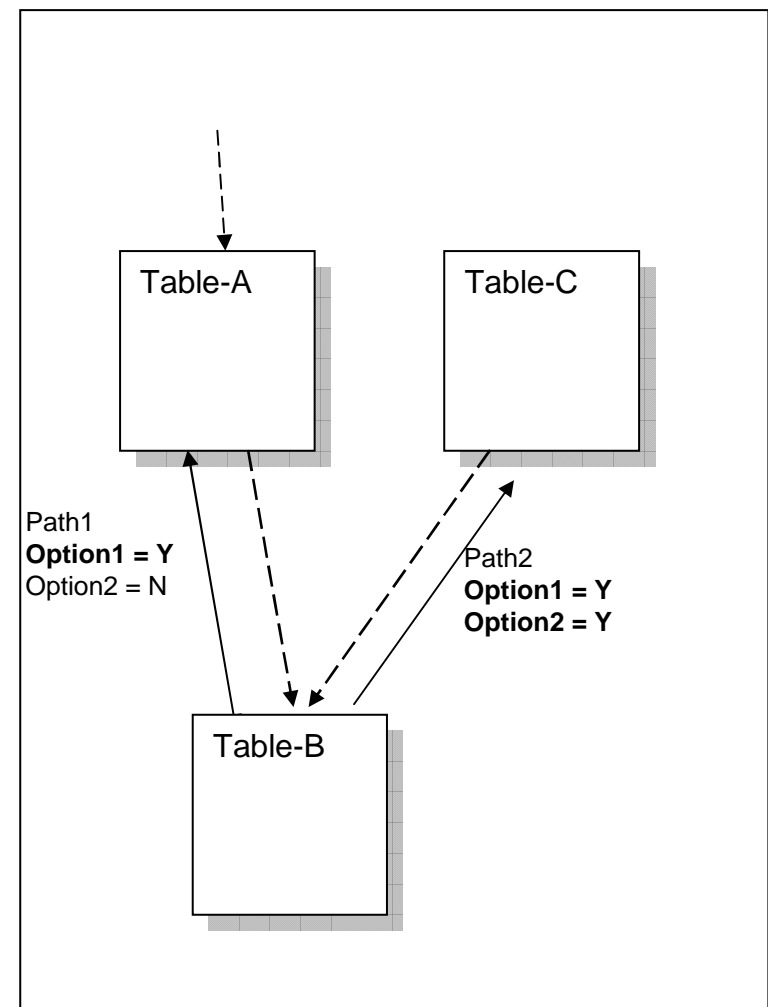
Examples

Optim Relationship traversal:

- Get selected rows from Table-A
- Get all related children rows from Table-B via Path1
- Get all related parents rows from Table-C via Path2.Option1
- Get *additional* children rows from Table-B via Path2.Option2
- Get all *new* parent rows from Table-A via Path1.Option1

The data extracted from Table-B is relationally intact because all related parent rows from both parent tables have also been extracted.

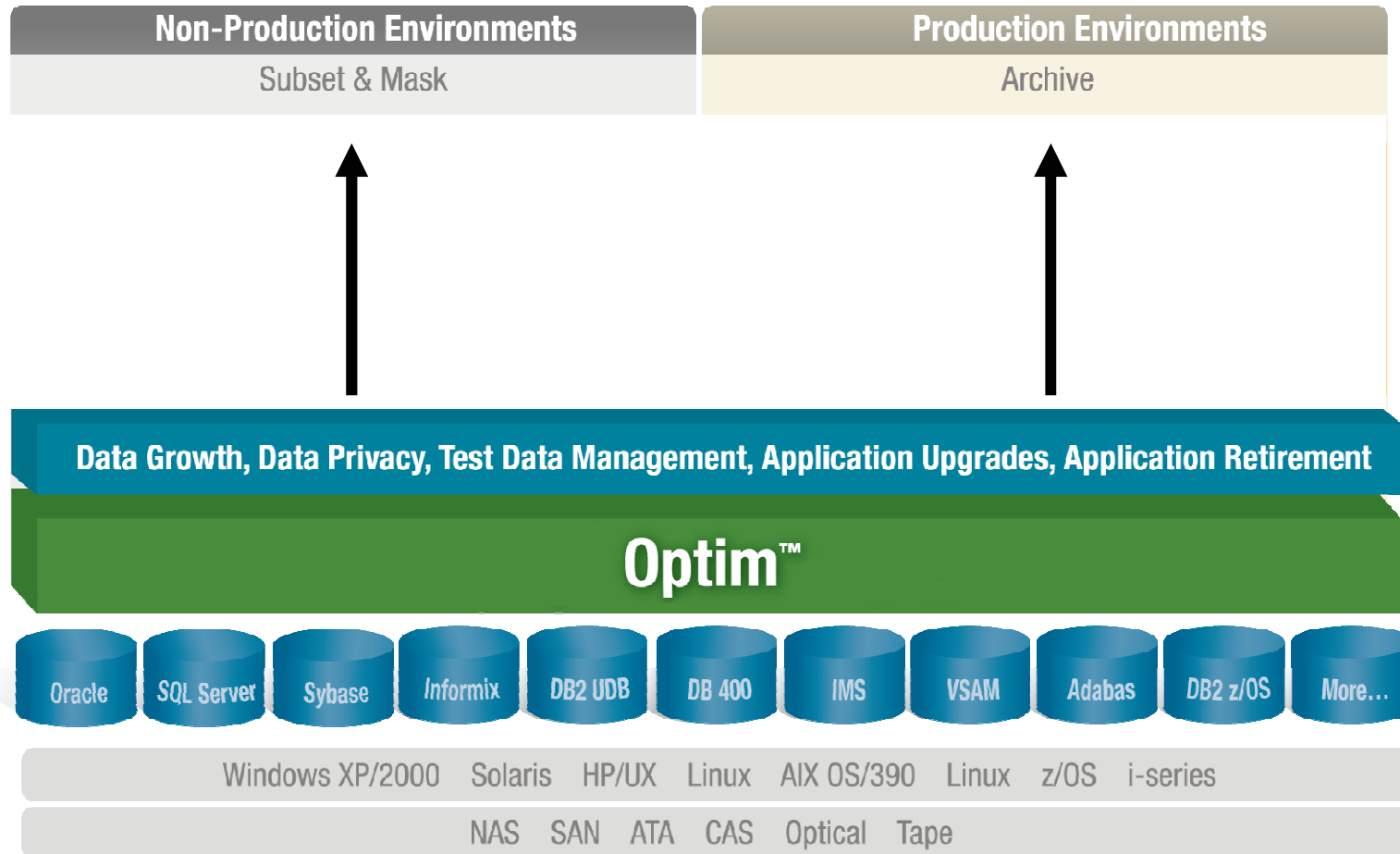
Example



Defining logical relationships for TDM/Archiving

- Needed for subsetting data but ... how the heck can I find them in big complex ERP/CRM systems?
- Examples
 - AmdocsCRM
 - JD Edwards Enterprise One
 - Oracle E-Business Suite
 - Peoplesoft Enterprise
 - Siebel CRM
 - SAP
 - Microsoft Business Dynamics

Enterprise Architecture – across dbms/platforms



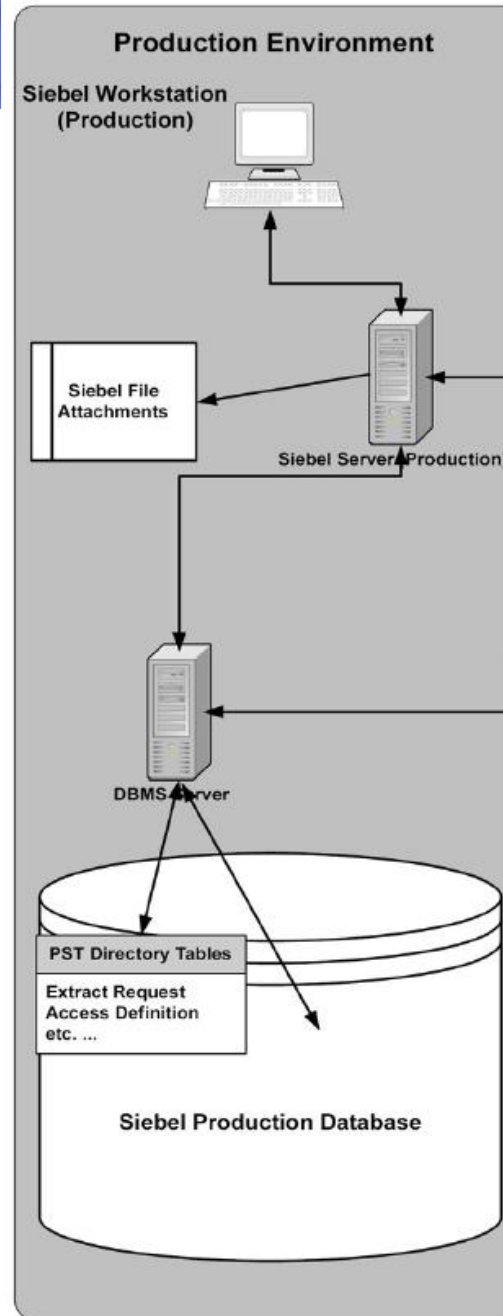
- Single, scalable, interoperable EDM solution provides a central framework to deploy policies to execute actions based on events within application data records from creation to deletion

Enterprise Application Support

	Test Data Management	Data Privacy	Data Growth
Oracle E-Business Suite	✓	✓	✓
PeopleSoft Enterprise	✓	✓	✓
JD Edwards Enterprise One	✓	✓	✓
Siebel CRM	✓	✓	✓
AmdocsCRM	✓	✓	✓
SAP		✓	

Armonk, NY, May 19, 2008 – IBM (NYSE: IBM) today announced open client and partner testing of the new **IBM® Optim™ Data Privacy Solution for use with SAP® solutions**, which provides advanced enterprise data management and data privacy capabilities in support of SAP applications

Optim Siebel Solution for Test Data Management System in Unix or Windows Environment



Optim Data Privacy Solution

Data Privacy

- Optim provides the fundamental components of test data management and enables organizations to ***de-identify, mask and transform*** sensitive data
- Companies can apply a range of transformation techniques to substitute customer data with ***contextually-accurate but fictionalized data*** to produce *accurate test results*
- By masking personally-identifying information, Optim ***protects the privacy and security*** of confidential customer data, and ***supports compliance*** with local, state, national, international and industry-based privacy regulations

What are the capabilities?

- Can occur from a standalone file or automatically after **Extract**
- Can be used prior to **Insert/Update/Load** of Data
- Implemented via **Table Maps** and **Column Maps**
- Transforms data at the column level
- Generates new values
- Semantic transformations
- Lookups
- Customer extensions
- Propagation

Column Map screen

- Map unlike column names
- Transform/mask sensitive data
- Datatype conversions
- Column-level date aging
- Column-level currency conversion
- Source columns:
 - Literals
 - Special Registers
 - Expressions
 - Default Values
 - User exits

The screenshot shows the 'TRAINING.ORDER - Column Map Editor' window. It has a menu bar (File, Edit, Tools, Options, Help) and a toolbar with icons for file operations and editing. The main area is divided into 'Source' and 'Destination' sections. The 'Source' section has an 'Extract File' field with the path 'c:\rt4s\rtdata\training.XF' and a 'Table Name' field with 'ORACLE817.ORADEMO.ORDERS'. The 'Destination' section has a 'Table Name' field with 'ORACLE817.ORADEMO.ORDERS'. Below these are fields for 'Description' (Column Map for ORDERS table), 'Procedure ID', and 'Server Name' ([Local]).

Source		Destination		
Column	Data Type	Column	Data Type	
1	PROP(SEQ(88888,1))	ORDER_ID	NUMBER(5,0)	Numeric Expression
2	CUST_ID	CUST_ID	CHAR(5)	Equal
3	CURRENT_DATE	ORDER_DATE	DATE	Timestamp
4	FREIGHT_CHARGES * 1.10	FREIGHT_CHARGES	NUMBER(4,2)	Numeric Expression
5	'UNKMWN'	ORDER_SALESMAN	CHAR(6)	String Literal
6		ORDER_POSTED_DATE	DATE	Not Used
7	EXIT PGMNAME	ORDER_SHIP_DATE	CHAR(8)	Exit

What are the techniques?

■ Expressions:

- Literals
- Alphanumeric
- Numeric
- Random or sequential numbers
- Character substrings
- Map special registers
- Generate random or sequential numbers

■ Lookups:

- Prepackaged
- Random
- Hash
- Multi-column

■ Functions:

- Aging
- Automatic data conversion
- Concatenation
- Sequential string function
- Character substrings
- Create an expression
- Create substrings from Char/Varchar
- Currency
- Identity or serial function
- Exits
- Propagation

Masking Techniques - Expressions

- **String literal example:**
 - Substitute Street_Address with string literal
 - '111 Campus Drive'
- **Random number generation example**
 - Replace Employee_Number with random nine-digit number
 - RAND(111111111,999999999)
- **Numeric Expressions**
- **Operand1 (operator) Operand2**
 - Supports addition, subtraction, multiplication or division
 - One value must be a column name
 - Example: FREIGHT_CHARGES * 1.1
- **Random or Sequential Numbers**
 - RAND(low, high)
 - Example: RAND(1000,10000)
 - SEQ(start, step)
 - Example: SEQ(100,5)
- **Character Substrings**
 - Returns a substring of the contents of the named column
 - SUBSTR(column_name, start, length)
 - Example:
SUBSTR(CUST_ID,1,3)

Masking Techniques - Expressions

▪ Map Special Registers

– User ID Information

CURRENT SQLID	CURRENT_SQLID
USER	WORKSTATION_ID

– Date and/or Time

CURRENT_DATE	CURRENT_TIMESTAMP	GETDATE
CURRENT DATE	CURRENT TIMESTAMP	GETTIME()
CURRENT_TIME	CURDATE	NOW()
CURRENT TIME	CURTIME()	SYSDATE

▪ Create an Expression

Concatenate any value or function (except special registers)

Example:

'Optim' concat SUBSTR(CUST_ID,4,3) concat SEQ(1,1)

Assume CUST_ID in ('000146', '003586'); generated values are:

Optim1461 and Optim5862

SHUFFLE

- **Shuffle takes a column value and replaces it with a value for the same column from a different row.**
 - SHUFFLE
- **Multiple Columns: inserts shuffled values in the STATE and ZIP columns and refetches a replacement value that does not match the source up to twelve times.**
 - SHUFFLE(DEST=(STATE,ZIP),RETRY=12)

Street	City	State	Zip
3526 Diamond Rd	Seattle	WA	98102
21 Street Rd	Las Vegas	NV	89101

After:

3526 Diamond Rd	Seattle	NV	89101
21 Street Rd	Las Vegas	WA	98102

LOOKUP / RAND_LOOKUP / HASH_LOOKUP

- Assume the source column, **STATE**, contains state abbreviations (for example, NJ) and the destination column contains the full state name (for example, New Jersey).
- In the **STATE_LOOKUP** table, the abbreviations for state names are in the **CODE** column and the corresponding full state names are in the **NAME** column.
- LOOKUP (STATE, STATE_LOOKUP(CODE, NAME))**


 Source col Lookup table Cols in lookup table

- To select a value at random from the **CODE** column in the first 50 rows of a table named **STATE_LOOKUP** and insert it in the destination column, specify
- RAND_LOOKUP(STATE_LOOKUP, CODE, 50)**


 Lookup table Col in lookup table

- To select values from the **CITY**, **STATE**, and **ZIP** columns in a random row of a table named **STATE_LOOKUP** and insert them in the corresponding destination columns, specify
- RAND_LOOKUP(STATE_LOOKUP, DEST=(CITY, STATE, ZIP), VALUES=(CITY, STATE, ZIP))**


 Lookup table Cols in destination table Cols in lookup table

Masking Techniques - Exits and Column Map Procedures

- **Invoke custom masking routines: Exits**
 - Exit *routinename*
 - Useful for special processing, conditional data manipulation, and literals that exceed the length provided for **Source Column**
 - Example:
 - EXIT CUSTPGM
- **The function of a Column Map Procedure is generally the same as that of an exit routine.**
 - An exit routine must exist in a DLL external to Optim, and must conform to calling conventions used in the **C** programming language.
 - A Column Map Procedure, however, is stored in the Optim Directory and is written in **Optim Basic**, which is distributed with Optim

Referential integrity and data masking

Original Data

CUSTOMERS

08054	Lise Papotto	-----
19101	Jim Jones	-----
27645	Lisa Cash	-----

ORDERS

27645	80-2382	20 June 2002
27645	86-4538	10 October 2002

DETAILS

86-4538	DR1001	Lord of the Rings
86-4538	CM2010	Dude, Where's My Car?

De-Identified Data

CUSTOMERS2

mask

08054	Lise Papotto	-----
19101	Jim Jones	-----
27645	Lisa Cash	-----

ORDERS2

24645	80-2382	20 June 2002
27645	86-4538	10 October 2002

DETAILS2

86-4538	DR1001	Lord of the Rings
86-4538	CM2010	Dude, Where's My Car?

Propagating Keys

Mask and propagate

CUSTOMERS

08054	Lise Papotto	-----
19101	Jim Lee	-----
27645	Lisa Cash	-----

ORDERS

27645	80-2382	20 June 2002
27645	86-4538	10 October 2002

DETAILS

86-4538	DR1001	Lord of the Rings
86-4538	CM2010	Dude, Where's My Car?

CUSTOMERS2

55555	Lise Papotto	
33333	Jim Lee	
88888	Lisa Cash	

Referential integrity is maintained!

ORDERS2

88888	80-2382	20 June 2002
88888	86-4538	10 October 2002

DETAILS2

86-4538	DR1001	Lord of the Rings
86-4538	CM2010	Dude, Where's My Car?

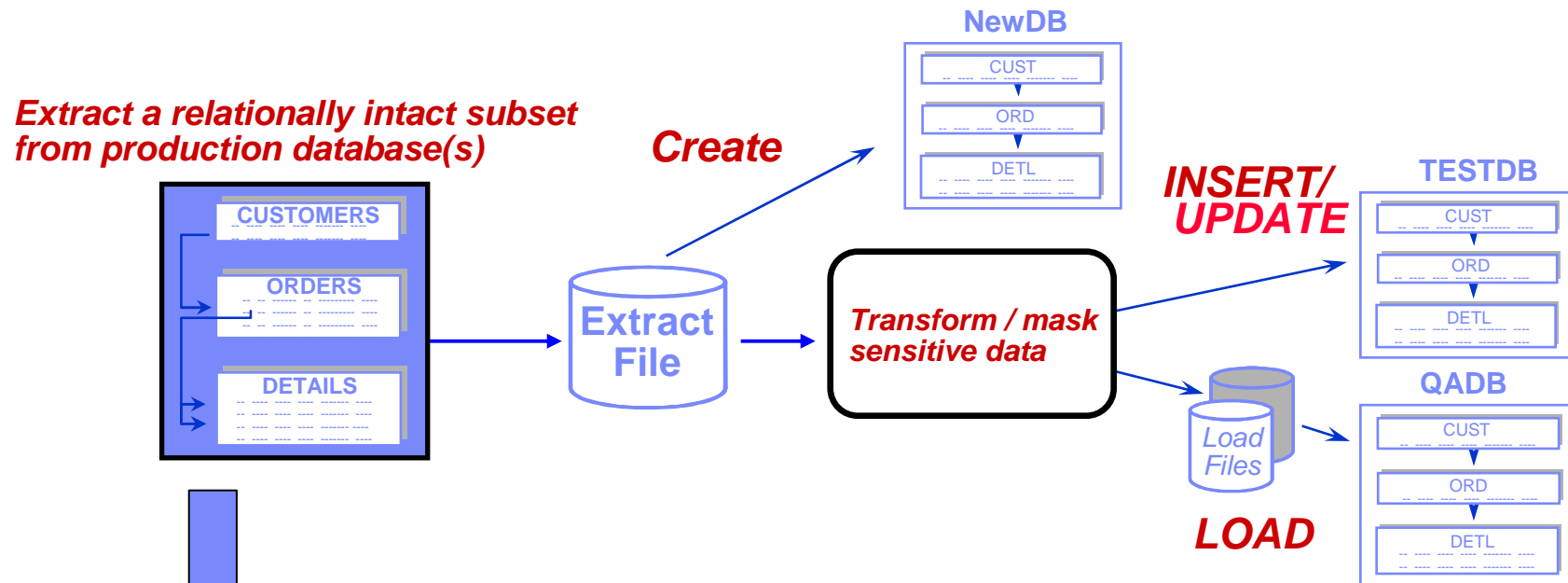
Propagate Keys

- **Propagates/cascades new values for**
 - the **primary key** or
 - **foreign key** to
- **all related tables**
- **Necessary to retain referential integrity of masked data**
- **How?**
 - Assign a value (literal, function, expression) to a key column in a parent table
 - Propagate key value to child tables at all levels
 - Enables you to “manufacture” new test data

Propagation - Cascade Primary/Foreign Key Values

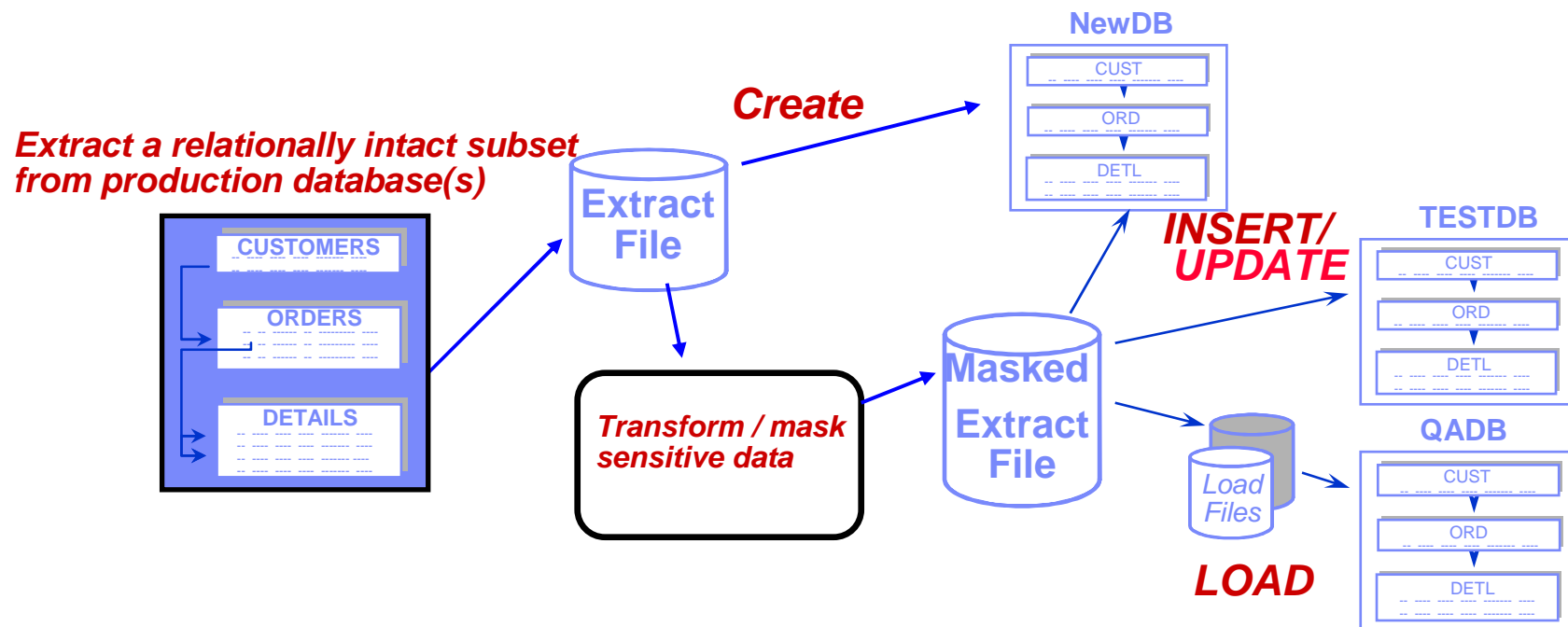
- **PROP(*value,column-name*)**
 - *Value*: literal, expression, special register, exit routine
 - *Column-name*: specifies source column containing value that is subject of the function
- **Example:** PROP('SMITH')
PROP(RAND(10000,99999),CUST_ID)
- **Example:** PROP(TRANS SSN)
PROP(SEQ(10000,1),CUST_ID)

Data Privacy in Application Testing – 1(3)



- Extract data and/or object definitions
- Define a new set of test tables
- Apply masking during population process
- Extract file may be reused but contains un-Masked data
- Good practice for testing masks

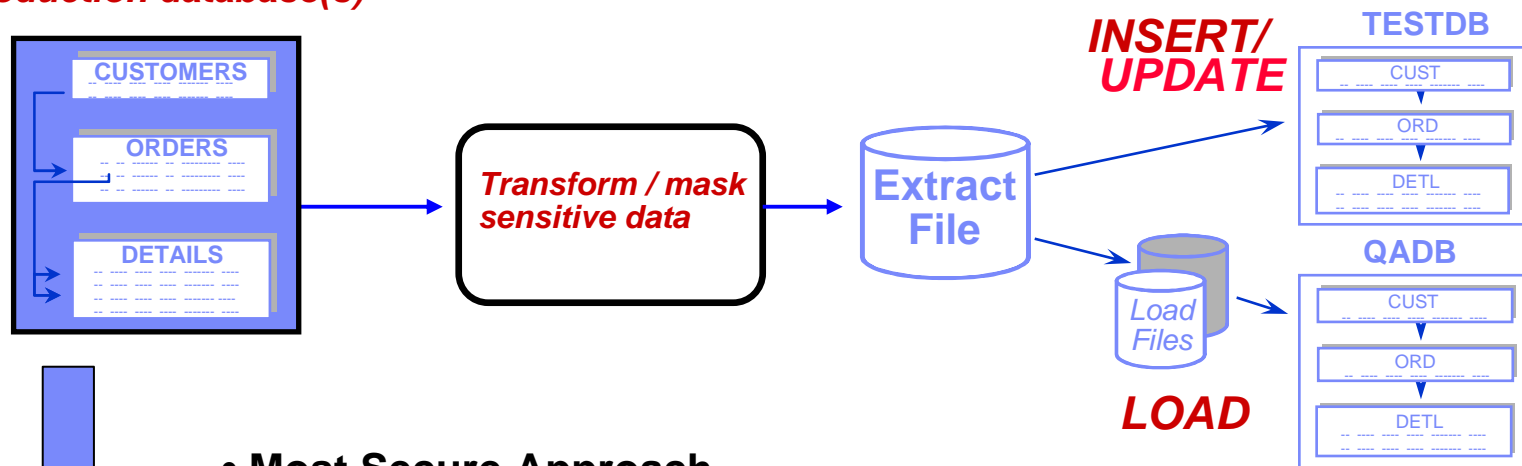
Data Privacy in Application Testing – 2(3)



- Extract data and/or object definitions in pre-masked file
- Use pre-masked Extract file to create new set of tables
- Convert Pre-masked extract file data into second masked extract file
- Share masked extract file to be reused for population step
- Good practice for testing masks using COMPARE

Data Privacy in Application Testing – 3(3)

Extract a relationally intact subset from production database(s)



- **Most Secure Approach**
 - Extract data only
 - Convert during extract
- **Extract file already contains masked data**
- **Can be shared with testers to reuse**

Edit, Browse and Compare

Why a Relational Data Editor in a test data environment?

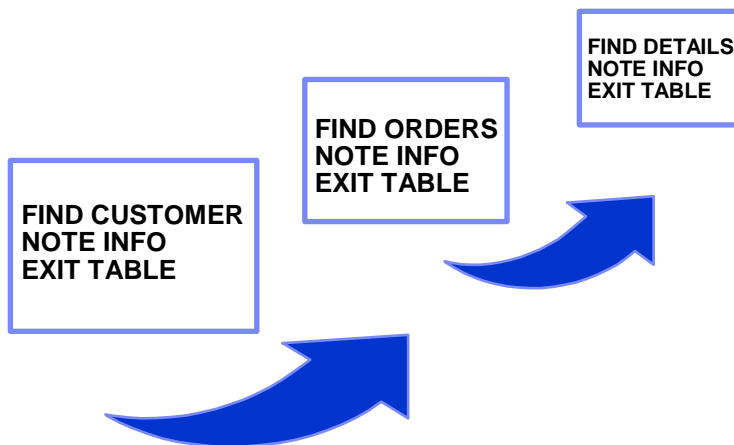
Because you need a fast, flexible way to:

- Examine, edit, and understand related data from multiple tables
- Add data to test application logic
- Correct bad data

Traditional Tools

Single Table Editors

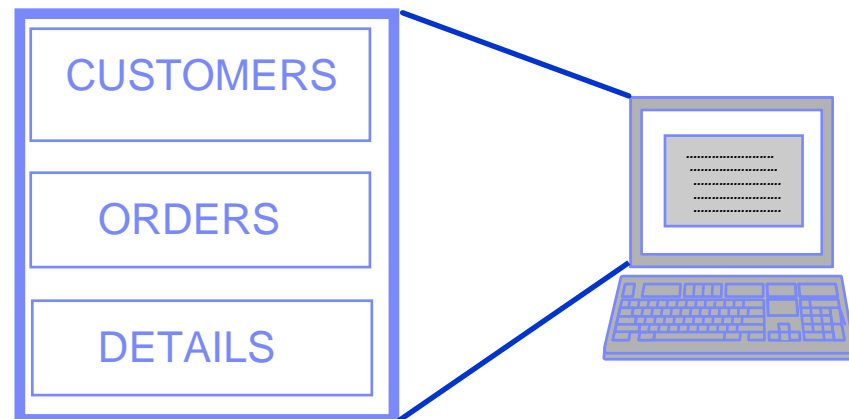
- One table/view at a time
- No edit of related data from multiple tables



Optim™ Test Data Management

The Relational Editor

- *Simultaneous* browse/edit of related data from multiple tables



- Edit data while respecting the original RI within its relational context
- Dynamic join related tables into a single view
- Synchronously scroll through related data
- Use a single editing and viewing tool across multiple database types (DB2 on mainframe or server, Oracle, Sybase, SQL Server, Informix)
- Simultaneous browse, update, insert, and delete of related data from multiple tables
- Extended backout capabilities
- Audit Trail of updates

Browse/Edit a table

(Untitled) - Table Editor (ORACLE817.ORADEMO.CUSTOMERS)

File Edit Tools Options Help

Description: Default Qualifier: ORACLE817.ORADEMO

Table: CUSTOMERS Filtering: OFF

	→	Status	CUST_ID CHAR(5)	CUSTNAME CHAR(20)	ADDRESS VARCHAR2(50)	CITY VARCHAR2(15)	STATE CHAR(2)	ZIP CHAR(5):N	YTE NUM
1	→		00001	Audio-Video	593 West 37th Str	Brass Castle	NJ	10017	
2			00002	Select-A-Vi	5720 MacArthur D	Evening Shade	AR	62700	
3			00003	Showplace	1 Ocean Parkway	Alto	NM	11694	
4			00004	Audio-Video	593 West 37th Str	Panacea	FL	10017	
5			00005	Take Home	Box 357	Fence Lake	NM	90028	
6			00006	Main Street	Gateway Shoppin	Pumpkin Center	AZ	85002	
7			00007	Cinemagic	Pass-a-Grille Bea	Pass-a-Grille	FL	92120	
8			00008	Director's C	347 Miners Row	Spuds	FL	95800	
9			00009	Prime Time	64 Newberg Ave	Loving	NM	22180	
10			00010	Reely Great	590 Frontage Rd	Christmas Vally	OR	01002	

- **User can define how data is displayed**
 - SORT, Sidelabel/Columnar format, Attributes, Lock
- **All database access authority enforced**

Joining to another table(s)

(Untitled) - Table Editor (ORACLE817.ORADEMO.CUSTOMERS)

File Edit Tools Options Help

Description: Default Qualifier: ORACLE817.ORADEMO Cancel

Table: CUSTOMERS Filtering: OFF

	→	Status	CUST_ID CHAR(5)	CUSTNAME CHAR(20)	ADDRESS VARCHAR2(50)	CITY VARCHAR2(15)	STATE CHAR(2)	ZIP CHAR(5):N	YTD NUM
1	→		00001	Audio-Video	593 West 37th Str	Brass Castle	NJ	10017	
2			00002	Select-A-Vi	5720 MacArthur D	Evening Shade	AR	62700	
3			00003	Showplace	1 Ocean Parkway	Alto	NM	11694	
4			00004	Audio-Video	593 West 37th Str	Panacea	FL	10017	
5			00005	Take Home	Box 357	Fence Lake	NM	90028	
6			00006	Main Street	Gateway Shoppin	Pumpkin Center	AZ	85002	
7			00007	Cinemagic	Pass-a-Grille Bea	Pass-a-Grille	FL	92120	
8			00008	Director's C	347 Miners Row	Spuds	FL	95800	
9			00009	Prime Time	64 Newberg Ave	Loving	NM	22180	
10			00010	Reelv Great	590 Frontage Rd	Christmas Vally	OR	01002	

- Browse or edit related rows

- Scroll of higher-level table automatically synchronizes all lower-joined tables

RT (Untitled) - Table Editor (ORACLE817.ORADEMO.CUSTOMERS)

File Edit Tools Options Help

Description: Default Qualifier: ORACLE817.ORADEMO

Table: CUSTOMERS Filtering: OFF

	→	Status	CUST_ID CHAR(5)	CUSTNAME CHAR(20)	ADDRESS VARCHAR2(50)	CITY VARCHAR2(15)	STATE CHAR(2)	ZIP CHAR(5):N
1		Updated	00001	Audio-Video	593 West 37th Str	Brass Castle	NC	10017
2			00002	Select-A-Vi	5720 MacArthur D	Evening Shade	AR	62700
3			00003	Showplace	1 Ocean Parkway	Alto	NM	11694
4		Inserted	66666	New Custo	408 Parkway Plac	New York City	NY	10002
5			00004	Audio-Video	593 West 37th Str	Panacea	FL	10017
6	→	Deleted	00005	Take Home	Box 357	Fence Lake	NM	90028
7			00006	Main Street	Gateway Shoppin	Pumpkin Center	AZ	85002

Edit data to:

- Insert rows
- Delete rows
- Update rows

Flexible Undo feature

- Back out both **errors** and/or **successful changes**

Table: **ORDER5** Filtering: OFF

	Status	ORDER_ID NUMBER(5,0)	CUST_ID CHAR(5)	ORDER_DATE DATE	FREIGHT_CHARGES NUMBER(4,2):N	ORDER_SALESMAN CHAR(6):N	OR
1			7 00721	1/30/1998 00:0	9.22	NE005	1/27
2			8 00021	1/31/1998 00:0	9.22	SC005	1/27
3			9 02123	2/1/1998 00:00	9.22	SW005	1/27
4	Error		9 02123	2/1/1998 00:00	9.22	SW005	1/27
5			12 00393	2/4/1998 00:00	9.22	NE005	1/27
6			13 03214	2/5/1998 00:00	9.22	MA005	1/27
7			14 00309	2/6/1998 00:00	9.22	MA005	1/27
8			15 00352	2/7/1998 00:00	9.22	MA005	1/27
9			16 00264	2/8/1998 00:00	9.22	MA005	1/27
10			17 00168	2/9/1998 00:00	9.22	MA005	1/27

Undo Row List

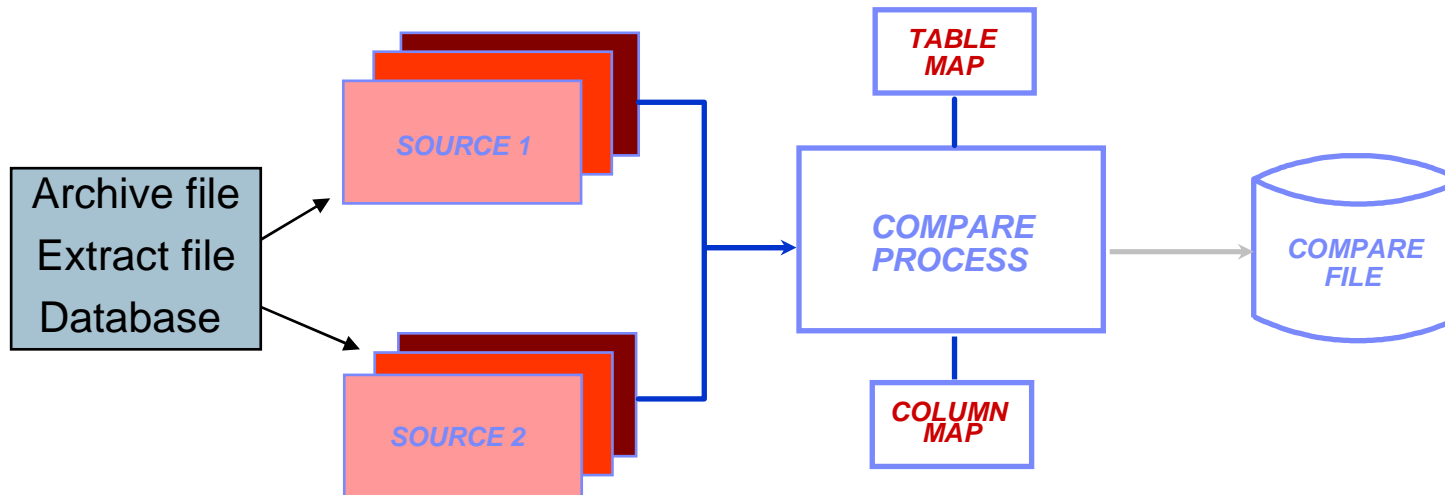
Status	CUST_ID	CUSTNAME	ADDRESS	CITY	STATE	ZIP	YTD_SALES	SALES
Updated	00001	Audio-Video	593 West	Black Castle	NY	1001	5000.90	NE005
Updated	00001	Audio-Video	593 West	Brass Castle	NY	1001	5000.90	NE005
	00001	Audio-Video	593 West	Brass Castle	NJ	1001	5000.90	NE005

Table 'TO92.OPTIM6.ORDER5' contains the error
Row 4 already contains the error

Undo
Undo...
Undo All

Compare : What are the capabilities?

- Compare the "before" and "after" data from a converted Extract
- Compare results after running modified application during regression testing
- Identify differences between separate databases
- Identify expected changes as well as unanticipated results
- View complete before and after images of the database or highlight only the differences

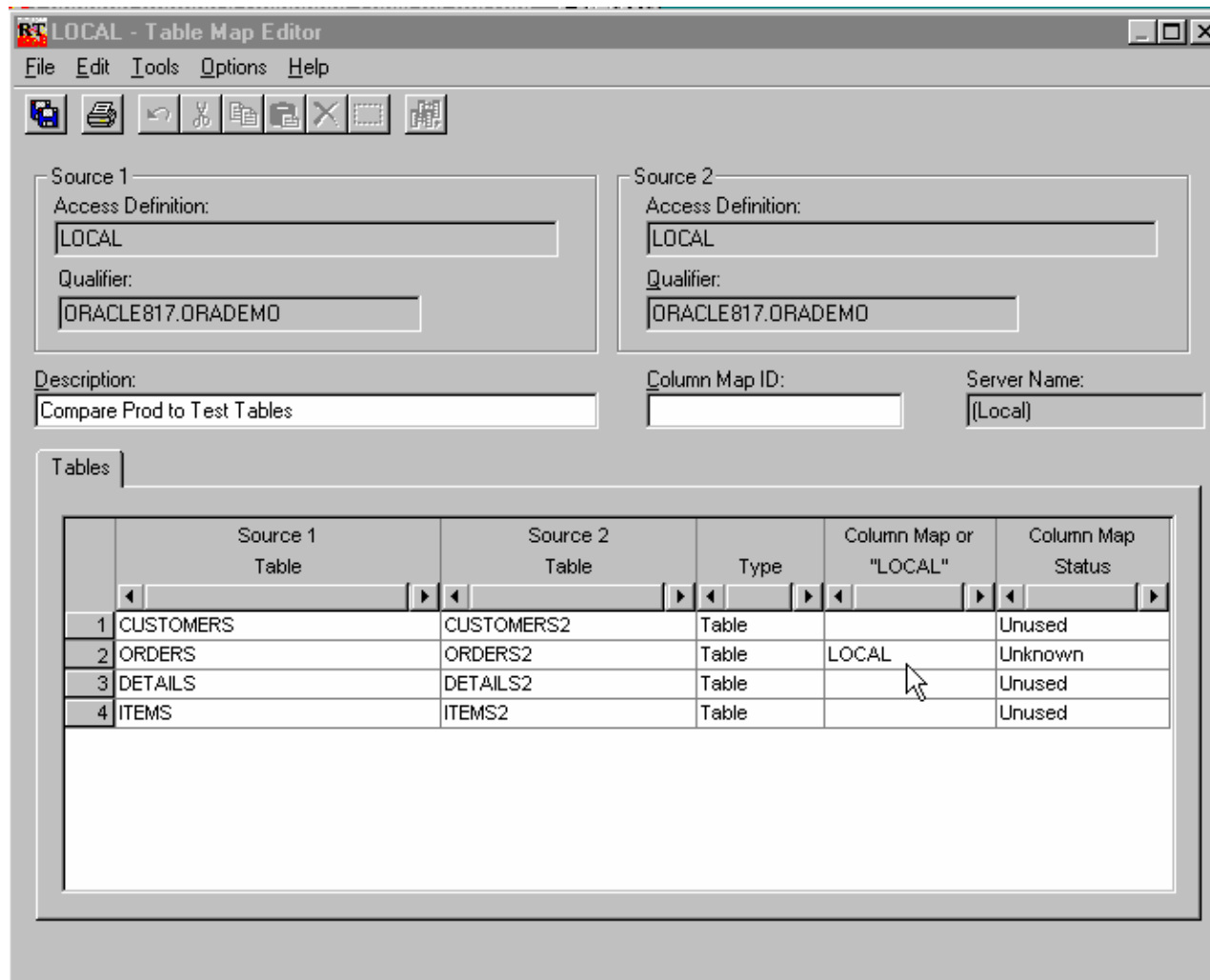


- **Single-table or multi-table compare**
 - If source is a database, rows are extracted into intermediate file to compare
- **Creates compare file of results**
- **Displays results on screen**

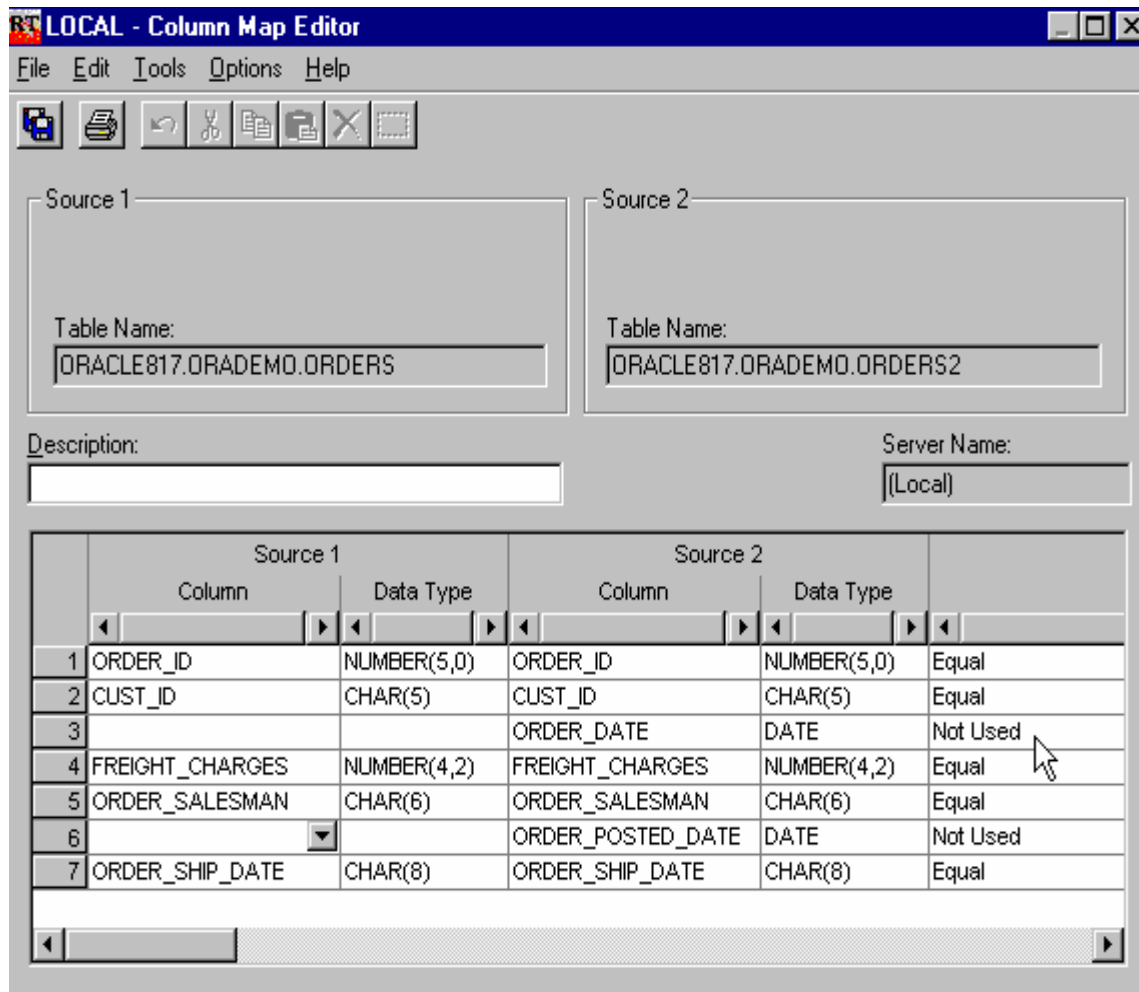
Different Table Names?

Table Map

- **Allows mapping of different table names or creator-IDs**
- **Can be 'local' to this compare or saved in the Optim Directory for future use**



Different Column Names?



Column Map

- **Correlates columns with unlike names**
- **Eliminates columns from the compare**
- **Can be 'local' to this compare or saved in the Optim Directory for future use**

Browsing the Compare File

Browse Compare File Table Data

File Tools Options Help

Source 1: ORACLE817.ORADEMO.CUSTOMERS

	Change	Source	CUST_ID CHAR(5)	CUSTNAME CHAR(20)	ADDRESS VARCHAR2(50)	CITY VARCHAR2(15)	STATE CHAR(2)	ZIP CHAR(5):N
1	Equal	Both	00001	Audio-Video	593 West 37th Street	Brass Castle	NC	10017
2	Only	1	00002	Select-R-Vi	5720 MacArthur Drive	Evening Shade	AR	62700
3	Only	1	00003	Showplace	1 Ocean Parkway	Alto	NM	11694
4	Diff	1	00004	Audio-Video	593 West 37th Street	<i>Panacea</i>	<i>FL</i>	10017
5	Diff	2	00004	Audio-Video	593 West 37th Street	<i>Hollywood</i>	<i>CA</i>	10017
6	Equal	Both	00006	Main Street	Gateway Shopping C	Pumpkin Center	AZ	85002
7	Diff	1	00008	Director's C	<i>347 Miners Row</i>	Taters	FL	95800
8	Diff	2	00008	Director's C	<i>1986 PanHandlers</i>	Taters	FL	95800
9	Equal	Both	00009	Prime Time	64 Newberg Avenue	Loving	NM	22180
10	Diff	1	00010	<i>Reely Gree</i>	590 Frontage Rd	Christmas Vally	OR	01002
11	Diff	2	00010	<i>Ted's Excel</i>	590 Frontage Rd	Christmas Vally	OR	01002
12	Diff	1	00011	Director's C	347 Miners Row	Kiester	MN	<i>95800</i>
13	Diff	2	00011	Director's C	347 Miners Row	Kiester	MN	<i>10455</i>

- Change column identifies the type of change
- Source column identifies input source row
- Data differences are *highlighted*

Summary: Optim Capabilities for Test Data Management

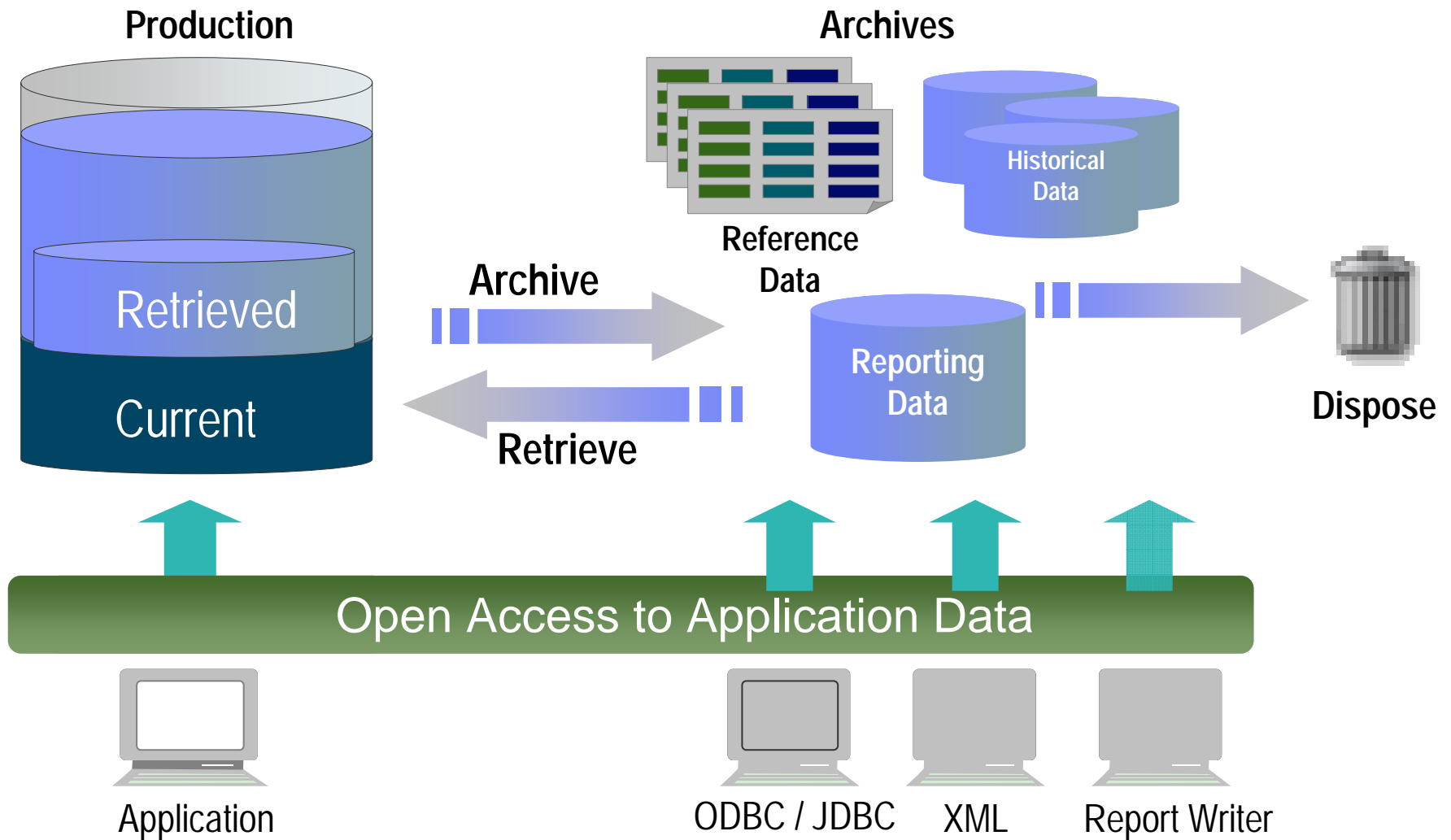
- **Manage test data across enterprise**
 - all related applications and platforms
 - Extracts and migrates data between different types of databases (Informix, DB2 on mainframe or server, VSAM/sequential files, IMS, Oracle, Sybase, SQL Server, ...)
- **Extract referentially intact subsets of data (including complete business objects)**
 - Supports all data relationships, whether defined to the DBMS or defined to the application
- **Dynamically create destination environment**
 - insert or load data to target, create tables if needed
- **De-identify or mask data in non-production environments**
- **Edit test data to create error and boundary conditions**
- **Compare baseline data against successive test run results to identify errors that would have otherwise gone undetected**
- **No need to write and maintain custom extract programs.**

Optim Data Growth Solution

Database Archiving

- Improve Performance – reduce size of production database
 - Faster Application Performance
 - Quicker Backup and Recovery
 - Improve IT Productivity
- Control Costs
 - Reduce infrastructure costs of servers/storage
 - Move data to different tiers based on current value and access requirements
- Mitigate Risks
 - Secure access to data
 - Preserve Data integrity
 - Maintain compliance with national and industry specific data retention regulations
 - Preparation for E-discovery requests

How does Archiving Work?

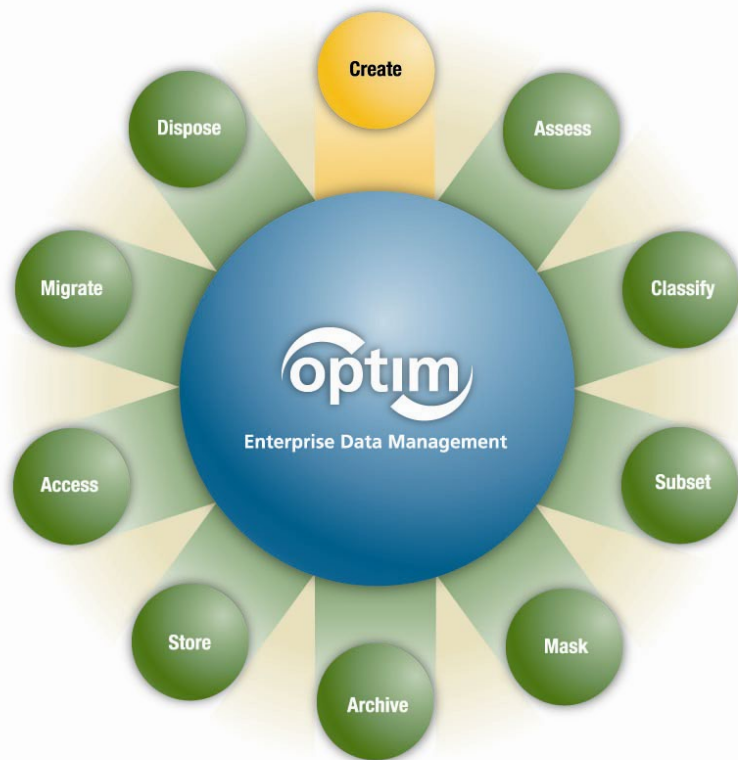


- **An OPTIM Archive is:**
 - A self-describing relationally intact subset of data
 - that retains its business context
 - even when extracted from its original database
 - that can be stored and accessed based on value
 - and deleted in accordance to a retention policy.

Optim Open Data Manager (ODM)

- Provides access to data in **Optim Archive Files** for programs that use the Open Data Base Connectivity (ODBC) and Java Data Base Connectivity (JDBC).
- You can use ODM on the same Windows, Solaris, AIX, HP-UX, and Linux platforms that are supported by ***Optim***.
- ODM can be installed during the ***Optim*** installation process.
- ODM is implemented using the Attunity Connect® product in concert with a custom driver that provides access to Archive Files.

That's it! - Optim™ Solutions



- **Optim Test Data Management Solution (Move, Edit, Compare)**
 - Create targeted, right sized test environments
 - Improve application quality
 - Speed iterative testing processes
- **Optim Data Privacy Solution**
 - Mask confidential data
 - Comply with privacy policies
- **Optim Data Growth Solution (Archiving)**
 - Improve performance, Operational efficiencies
 - Control data growth, save storage
 - Support retention compliance

Questions

THANK
YOU