

How to Bridge the Gap between MultiValue and Microsoft SQL Server

Presented to



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- About Kore Technologies
- Why Build a Data Warehouse
- Reasons to Use SQL Server
- MultiValue Data Challenges
- Best Practices: SQL Data Modeling
- Best Practices: ETL Tools
- Product Spotlight: Kourier Integrator
- MultiValue to SQL Demonstration
- Review
- Q & A



- San Diego Company, Founded 1999
- MultiValue Database Experts
- Microsoft Technologies Experts
- Enterprise Application Experts
- Specialize in *Extending the Enterprise Through Integrated Best-In-Class Solutions.*
- Full-Service Organization offering suite of products, services, and support.
- KommerServer (Web Applications)
- Kourier (Business Automation & Integration)
- Technology Used: IBM U2, C#, XML, Microsoft SQL Server, Integration & Web Services, and .NET



Integrated Data Warehouses

Product Name	Application Type
Astra 	Dealership Management
Avanté (System Builder) 	ERP
Colleague 	Educational Institution Management
DataFlo 	ERP
Eclipse 	Distribution
FlexGen4 (System Builder) 	ERP
Prelude (System Builder) 	Distribution Management

Other EAI Integrations

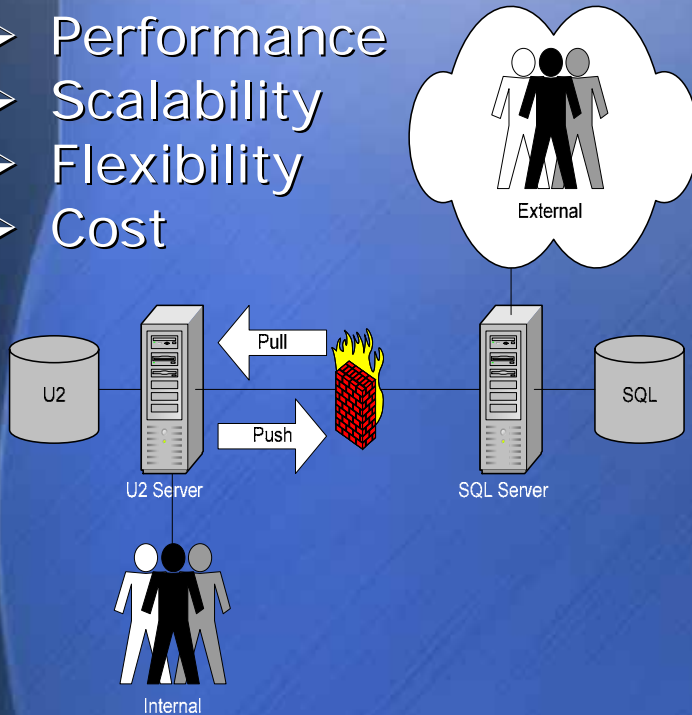
Product Name	Integration Type
Amazon.com	e-Commerce
Avanté	Corporate Integration
BarTender	Barcode & Label printing
Costimator	Cost Estimating
DataFlo	e-Commerce, Migration, EDI
Forecast Pro	Desktop forecasting
FileMaker (using SOAP)	Database
GFI FaxMaker	Fax Server
Inovis	EDI
Oracle	Indirect Purchasing
PCMall Exchange	e-Commerce, Product Catalog
Seibel	CRM
SPS Commerce	EDI XML
Tour de Force	CRM

It's All About the Data...

- Consolidate Data from Disparate “Islands of Information”
- Combined Reporting Across Multiple Accounts/Business Units
- Share Data with External Users, Corporate Users and Business Partners
- Combined Reporting Across Disparate Systems
- Supports Making Better Business Decisions!

Reasons to Use SQL Server

- Performance
- Scalability
- Flexibility
- Cost



- Improved Report Performance
- Simplified Data Model, Easier Access
- Cleaner Data with Minimized Data Redundancy
- Reduced Impact on Production System
- More Tools and Technology:
 - More 3rd Party Reporting Products
 - Enterprise Manager/Query Analyzer
 - Profiling Tools
 - DTS/SSIS Agent
 - Report Server
 - OLAP Services
- Inexpensive Compared to Other Databases

Challenge 1: Normalization

0001: VOLT OUTPUT-970S

0002:

0003: 5

0004: 50

0005:

.

.

.

0021: 9188*SCy8948*SCy9039*SCy9108*SCy9118*JH

.

.

.

0053: 1y2y3

0054: 103y105y101

0055: 100-0023-09y99-332-0987y999-3-2003992

0056: VOLTAGE OUTPUTy970S. OUT.yRESISTOR 445

Typical MV field
and association
that must be
normalized in a
SQL database

Challenge 2: Compound Data

101*07

0001: Westminster Eng Inc.
0002: 2893 E. LA PALMA AVEyANAHEIMyCAy92806
0003:
0004: 714/630-5350y714/640-5552
0005: JULIAN SANCHEZ
0006: JULIAN SANCHEZ
0007: 92806
0008:
0009: SW
0010: ENG
0011: 0/0/30
0012: 2
0013: 100
0014: 0
0015: 0
0016: BEST WAY
0017: 125
0018: 1
0019: SHIP POINT
0020:

Typical MV
Compound Data
that should be
decomposed into
separate SQL
columns

- Adopt a Naming Convention
- Normalize and Simplify
- Decompose Compound Data Structures
- Eliminate Cross Reference Data
- Plan for Multiple Data Sources
- Data Cleansing
- Data Types
- Data Lengths
- Null/Empty String
- Derived vs. Stored data

order_header		
PK,I4	<u>order_no</u>	LONG
FK1	<u>sold_to_no</u>	LONG
	contact_no	LONG
I1	order_xref_id	CHAR(30)
	order_dt	DATETIME
I4,I2	<u>order_type</u>	CHAR(1)
	po_no	TEXT(750)
I3	<u>status_cd</u>	CHAR(1)
	freight_amt	CURRENCY
	tax_amt	CURRENCY
	order_comments	LONGTEXT
FK2	ship_addr_no	LONG

order_item		
PK,FK1,I2	<u>order_no</u>	LONG
PK,I2	<u>order_item_no</u>	LONG
PK,I3	<u>line_type</u>	CHAR(1)
I1	item_id	CHAR(25)
	order_item_desc	TEXT(750)
	unit_price	CURRENCY
	wh_plant_cd	CHAR(5)
	line_status_cd	CHAR(1)
	price_cd	CHAR(1)

order_item_delivery		
PK,FK1,I2	<u>order_no</u>	LONG
PK,FK1,I2	<u>order_item_no</u>	LONG
PK,FK1	<u>line_type</u>	CHAR(1)
PK	<u>sched_ship_dt</u>	DATETIME
	ship_to_name	TEXT(750)
	ship_to_address_line1	TEXT(750)
	ship_to_address_line2	TEXT(750)
	ship_to_address_line3	TEXT(750)
	ship_to_city	TEXT(750)
	ship_via_cd	TEXT(750)
	ship_to_state	TEXT(750)
	ship_to_country	TEXT(750)
	ship_to_postal_cd	CHAR(20)
	attention	TEXT(750)
	phone_no	TEXT(25)
	sched_ship_qty	LONG
	req_ship_dt	DATETIME
I1	tax_cd	CHAR(15)

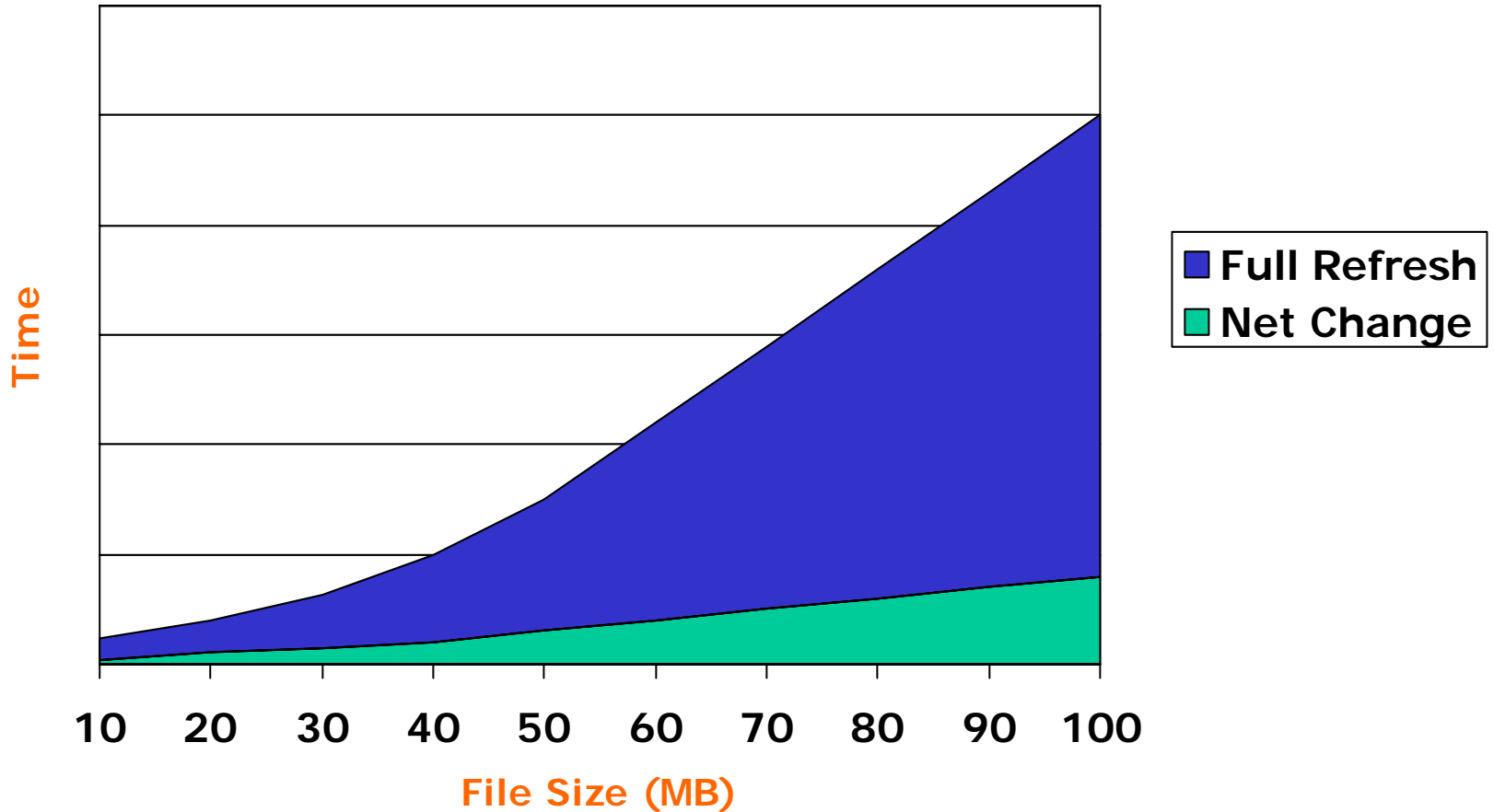
- Data Cleansing and Transformation
- Data Aggregation from Multiple Sources
- Data Auditing & Statistics
- Minimal Setup & Configuration (metadata, dictionaries)
- Extensibility (Support Custom Code)
- Design / Test Capability
- Scalability as Data Sets Grow
- Exception Management / Notification
- Scheduling & Job Dependencies
- Low Overhead and Small Footprint
- Change Data Capture Management (i.e., Net Change)

Why Net Change is Important

- Provides the ability to deal with large files
 - Full refresh of a file with 100K records is doable
 - Full refresh of a file with 10M records is not
- Provides the ability to deal with large data sets
 - Data Warehouses start small (10-20 files)
 - Over time, they can grow to include 100's of files
- Enables near real time data updates
 - Users always want their data... yesterday!

Full Refresh vs. Net Change

Relative Performance - SQL Update



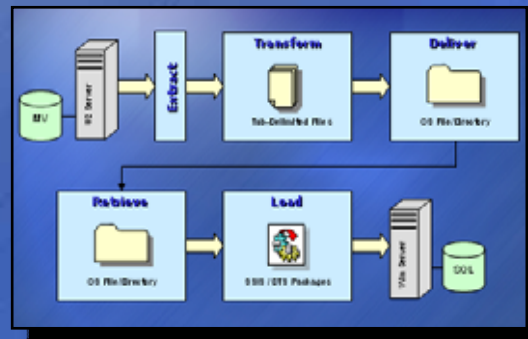
Time-Date Stamps is the Common Approach

- May require complex triggers or software modification
- Potential vendor support and compatibility issues
- Must SELECT entire file to find records to process
- Slow and resource intensive, may impact users
- Near real time windows larger due to performance

Product Spotlight

Kourier Integrator for U2 & SQL Accelerator

*Fast, Scalable, and Automated
SQL Server Data Integration Solution*



Benefits

- Easy to Learn and Use
- Near Real Time Data Updates
- Guaranteed Data Delivery
- Automates Integration to MS SQL Server
- Embraces Microsoft's Best Practices for BI
- No Programming Required
- Leverages Existing Dictionaries
- Minimal Overhead and Impact on U2 App
- Easy to Diagnose Integration Issues
- Does Not Require Any Application Changes
- Rapid Implementation Cycle
- No Additional U2 Licenses Required



Key Features

- Net Change & Full Refresh Database Updates
- Template-based Data Export Specifications
- Normalizes MultiValue & Sub Value Fields
- Data Aggregation from Multiple Accounts
- Fast Data Extraction Uses Native Access (not ODBC)
- Generates Maintenance-Free SSIS Packages
- Integrated Testing Workbenches
- Data Auditing and Statistics Logs
- User-Defined Formulas
- Event-based E-mail Notification
- Powerful Substitution Processor, Dynamic Data
- Extensive Event Logging
- Independent Scheduling Agent
- *Quick Start* Tools Accelerate Building Data Exports



Configuration

- Using **IDS** Astra Dealer Management System
- > 57 UniVerse Accounts, ~ 20 Exports per Account

Challenge

- Support FEMA Requests for Katrina Temporary Housing
- Consolidated Inventory Reporting from all 57 Dealerships
- Require Flexibility for Viewing and Reporting Data
- Need Quick Turnaround, Data Must Remain Up-to-date

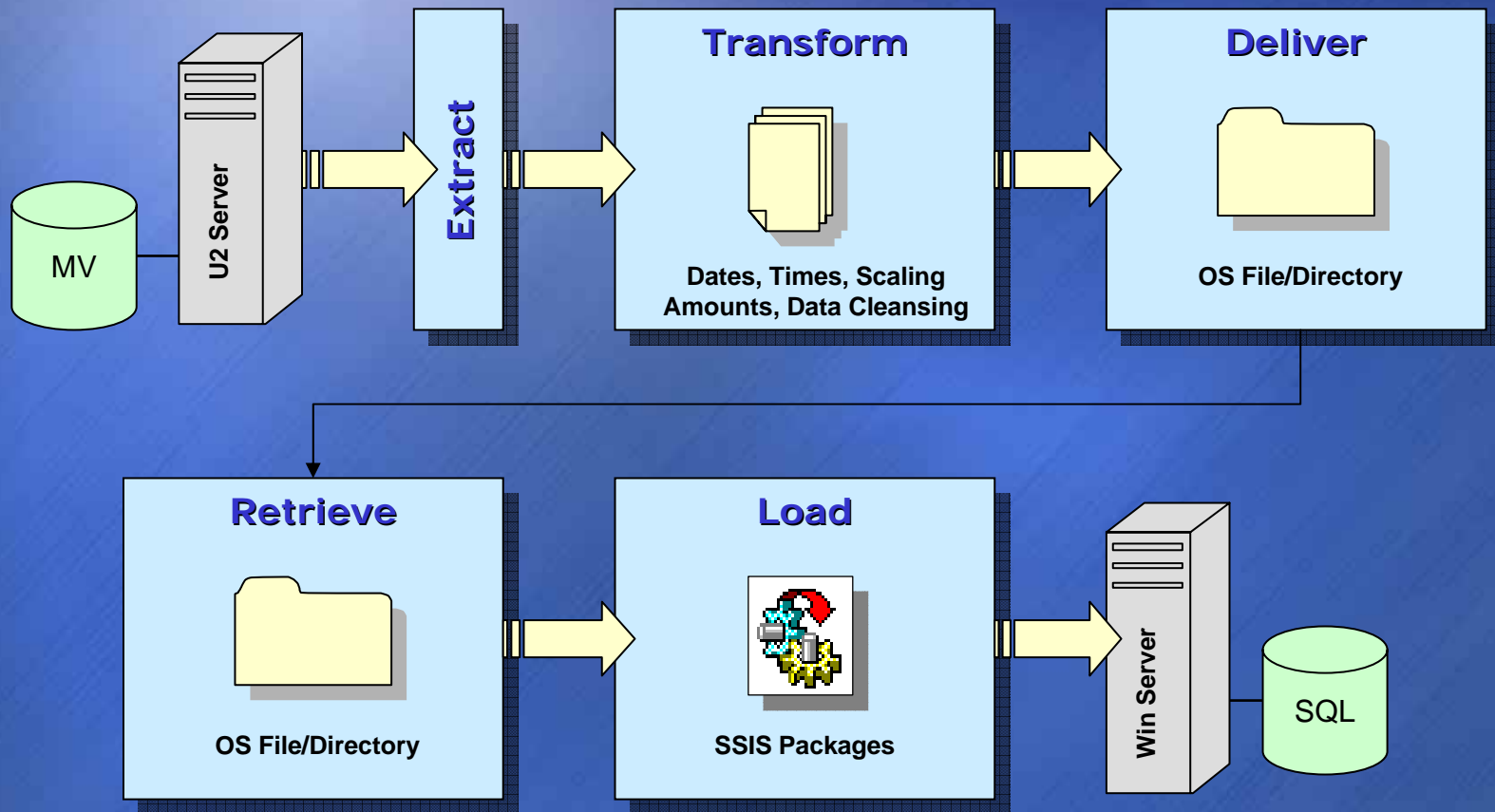
Solution

- Implemented Kourier Integrator/SQL Accelerator
- Deployed SQL Data Warehouse in Less than One Week
- Generates > 90 GB Data in SQL Server
- Use Net Change Feature to Keep Data Fresh
- Create Custom Reports and Use Excel



Read Full Case
Study Online

SQL Data Warehouse (2 Phase)





Kourier Integrator & SQL Accelerator

- Bridging the Gap from MultiValue to SQL is Not Difficult if You Use the Right Tools
- Understand Your MV Database Design and Data Challenges
- A SQL Data Warehouse is Not Just About Reports—it opens up new possibilities too
- Follow Best Practices

- Complete Suite of Web Solutions
- Uses Microsoft SQL Database
- Microsoft .NET Architecture
- Highly Reliable & Scalable & Secure
- Operate Stand-Alone or Integrated
- Uses Queued, Message-Based Integration
- Customizable to your look and Feel



- **webStoreFront**
 - Powerful B2B & B2C eCommerce Storefront
 - On-line product catalog w/database-driven content
- **webConfigurator**
 - Purchase Configure-to-order products online
 - Uses interactive Q&A or catalog string
- **webPortal**
 - Customer Portal provides information access 24/7
 - Orders, RMAs, Invoices, and shipment tracking
- **webSalesForce**
 - Sales Force Automation and Contact Management
 - Enter Quotes & Orders; Report Bookings & Commissions
- **webServiceCenter**
 - Manage customers at a glance
 - Includes field service repairs and warranty tracking
- **webTeam**
 - Team Collaboration and Project Management
 - Manage Requests, Tasks, and Documents

For More Information on MultiValue to SQL Integration **Contact Kore Technologies**

- Go To Kourier Integrator's Web Site
http://www.koretech.com/kore_integrator.asp
- Call 866-763-KORE (5673)
- E-Mail info@koretech.com
- Browse Kore's Web Site
<http://www.koretech.com>

solutions that work.
people who care.



Kourier Integrator for U2 SQL Accelerator


Kourier Data Export Menu - Mozilla Firefox

File Edit View History Bookmarks Tools Help

Kourier Integrator for U2

Define | Design | Process | Audit | Administration | Help


Connection: SOL-KU2-DEMO



Kourier Integrator U2 Edition

*Extending the Enterprise Through
Integration and Business Automation*

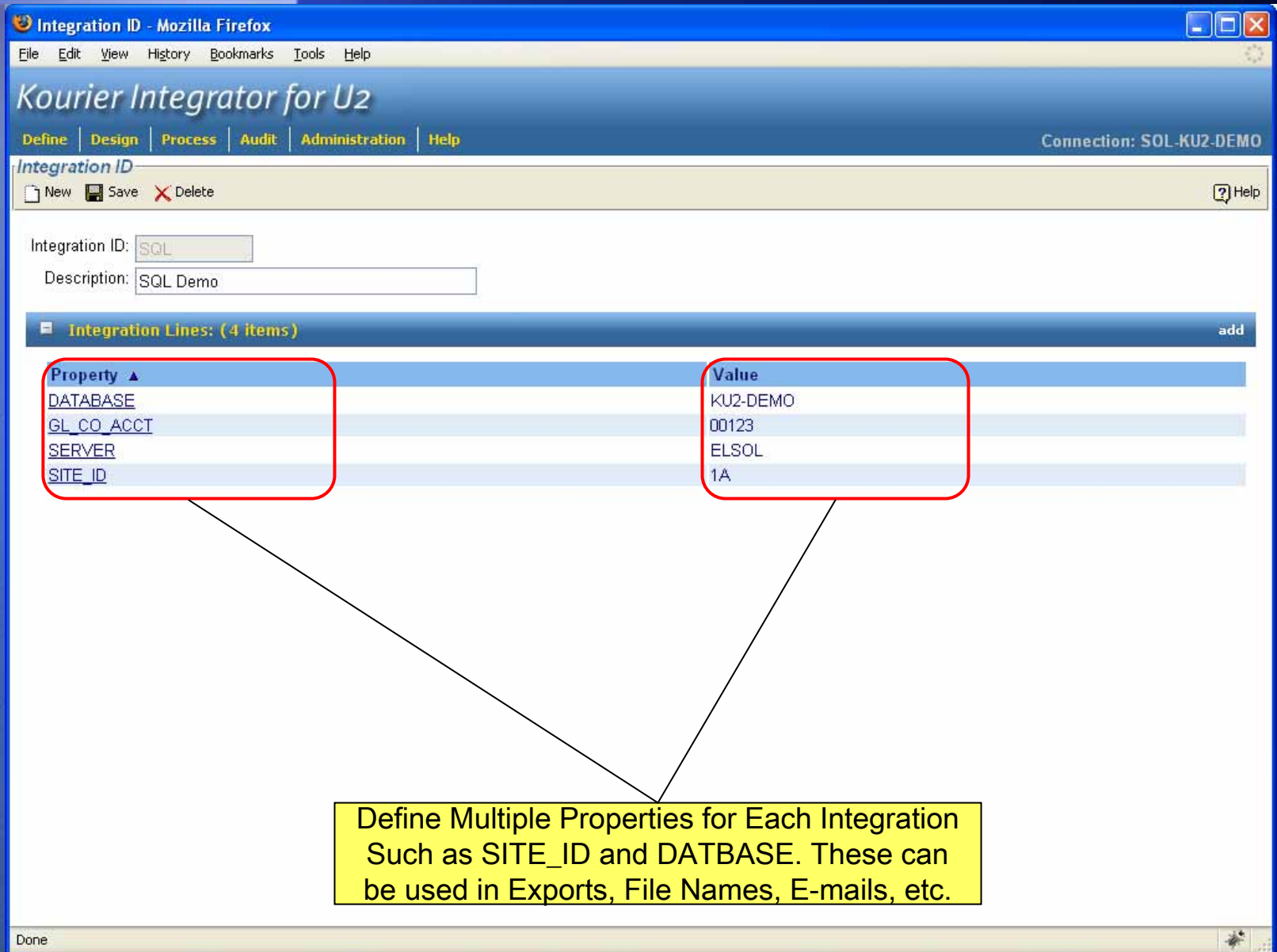
*For more information about Kore Technologies
please visit www.koretech.com*



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Done

Define: Integrations



The screenshot shows the 'Integration ID' configuration window in Mozilla Firefox. The window title is 'Integration ID - Mozilla Firefox'. The application title is 'Kourier Integrator for U2'. The connection is 'SOL-KU2-DEMO'. The 'Integration ID' is 'SQL' and the 'Description' is 'SQL Demo'. There are 4 integration lines defined. The first line is highlighted with a red box around the 'Property' and 'Value' columns. The properties are DATABASE, GL_CO_ACCT, SERVER, and SITE_ID. The values are KU2-DEMO, 00123, ELSOL, and 1A. A yellow box at the bottom explains that these properties can be used in exports, file names, and emails.

Property	Value
DATABASE	KU2-DEMO
GL_CO_ACCT	00123
SERVER	ELSOL
SITE_ID	1A

Define Multiple Properties for Each Integration Such as SITE_ID and DATBASE. These can be used in Exports, File Names, E-mails, etc.

Define: Data Sources

Data Source - Mozilla Firefox

File Edit View History Bookmarks Tools Help

Kourier Integrator for U2

Define Design Process Audit Administration Help Connection: SOL-KU2-DEMO

Data Source

New Save Delete Help

Name:

Description:

Class:

Address:

Username:

Password:

Use Binary Transfer

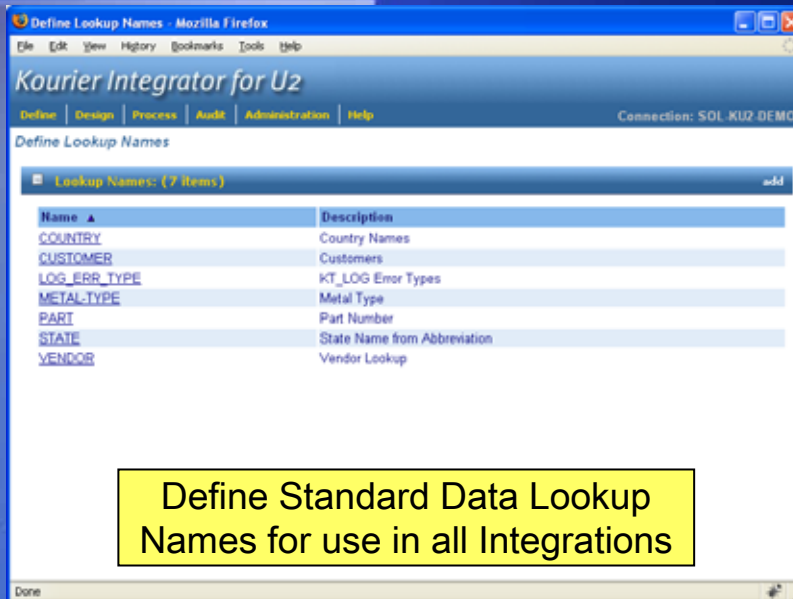
Use Concurrency Control

Done

Choose How the Data Will be Transferred.

Indicate the Destination for the Data.

Define: Lookups, Literals, E-mails



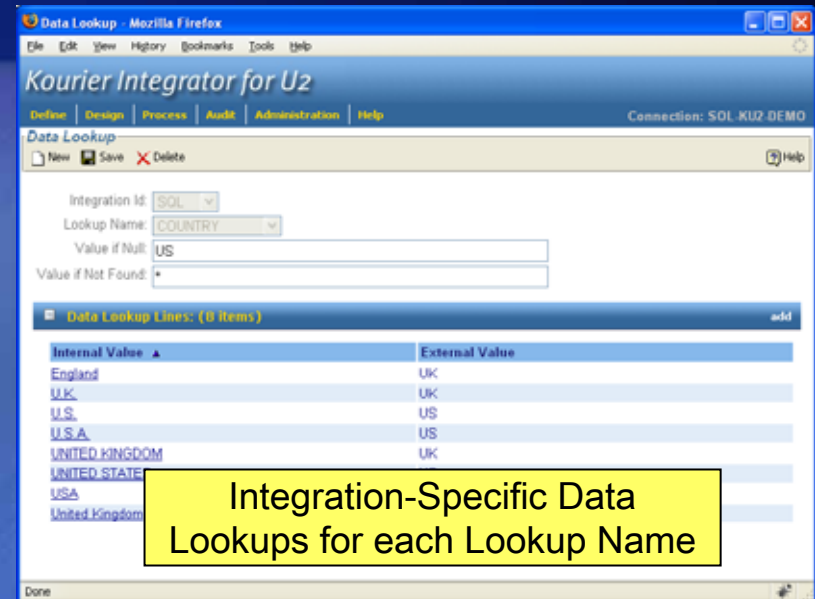
Define Lookup Names

Lookup Names: (7 Items)

Name	Description
COUNTRY	Country Names
CUSTOMER	Customers
LOG_ERR_TYPE	KT_LOG Error Types
METAL-TYPE	Metal Type
PART	Part Number
STATE	State Name from Abbreviation
VENDOR	Vendor Lookup

Done

Define Standard Data Lookup Names for use in all Integrations



Data Lookup

Integration Id: SOL
 Lookup Name: COUNTRY
 Value if Null: US
 Value if Not Found:

Data Lookup Lines: (0 Items)

Internal Value	External Value
England	UK
U.K.	UK
U.S.	US
U.S.A.	US
UNITED KINGDOM	UK
UNITED STATE	
USA	
United Kingdom	

Done

Integration-Specific Data Lookups for each Lookup Name



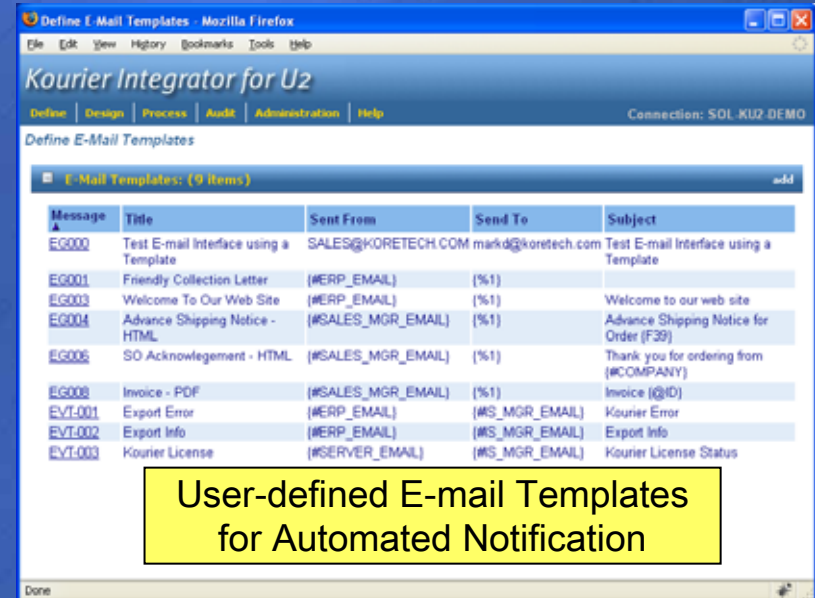
Define System Literals

System Literals: (0 Items)

Tag	Data Value
AR_MGR	armgr@yourcompany.com
COMPANY	Your Company Name Here
ERP_EMAIL	erpapp@yourcompany.com
IS_MGR_EMAIL	ismgr@yourcompany.com
SALES_MGR_EMAIL	salesmgr@yourcompany.com
SERVER_EMAIL	server@yourcompany.com
SITE_ID	01
SITE_ID2	02

Done

System Literals can be used as Substitution Tags



Define E-Mail Templates

E-Mail Templates: (9 Items)

Message	Title	Sent From	Send To	Subject
EG000	Test E-mail Interface using a Template	SALES@KORETECH.COM	markd@koretech.com	Test E-mail Interface using a Template
EG001	Friendly Collection Letter	{#ERP_EMAIL}	{%}	
EG003	Welcome To Our Web Site	{#ERP_EMAIL}	{%}	Welcome to our web site
EG004	Advance Shipping Notice - HTML	{#SALES_MGR_EMAIL}	{%}	Advance Shipping Notice for Order (F39)
EG006	SO Acknowledgement - HTML	{#SALES_MGR_EMAIL}	{%}	Thank you for ordering from {#COMPANY}
EG008	Invoice - PDF	{#SALES_MGR_EMAIL}	{%}	Invoice {@ID}
EVT-001	Export Error	{#ERP_EMAIL}	{#S_MGR_EMAIL}	Kourier Error
EVT-002	Export Info	{#ERP_EMAIL}	{#S_MGR_EMAIL}	Export Info
EVT-003	Kourier License	{#SERVER_EMAIL}	{#S_MGR_EMAIL}	Kourier License Status

Done

User-defined E-mail Templates for Automated Notification

Design Export Specifications - Mozilla Firefox

File Edit View History Bookmarks Tools Help

Kourier Integrator for U2

Define | Design | Process | Audit | Admin Connection: SOL-KU2-DEMO

Design Export Specifications

Export Specifications: (10 items) Integration: **SQL** Export Data File: (All) **add**

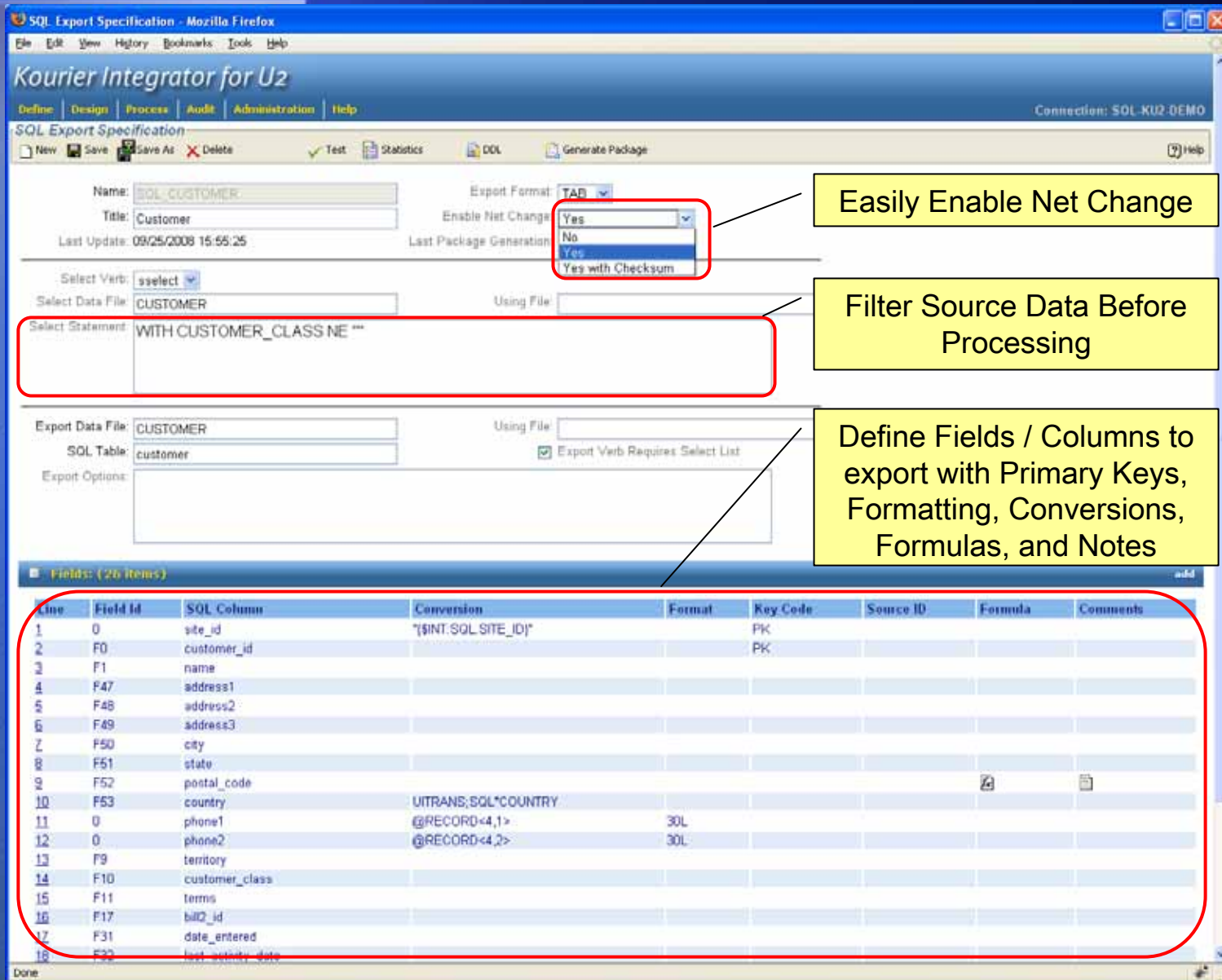
Name ▲	Title	Export Data File	Enable Net Change	Export Type
SQL_ARINVOICE	Invoice Header	AR-INVOICE	Yes	SQL
SQL_ARINVOICE_SALESREP	Invoice Salereps	AR-INVOICE	Yes	SQL
SQL_ARLI	Invoice Lines	ARLI	Yes	SQL
SQL_CUSTOMER	Customer	CUSTOMER	Yes	SQL
SQL_CUSTOMER_CLASS	Customer Class	CUSTOMER-CLASS	Yes	SQL
SQL_CUSTOMER_SALESREP	Customer Salereps	CUSTOMER	Yes	SQL
SQL_PARTS	Parts	PARTS	Yes	SQL
SQL_PART_CLASS	Part Class	PRODUCT-CODES	Yes	SQL
SQL_SALESREP	Salesreps	SALESREP	Yes	SQL
SQL_TERRITORY	Territories	TERRITORY	Yes	SQL

Use the Export Specification Listing to Manage Your Exports

Filter Listing by Integration ID and Export Data File. Click Export Name to View/Edit or Create a New Export with Add.

Done

Design: SQL Export Specification



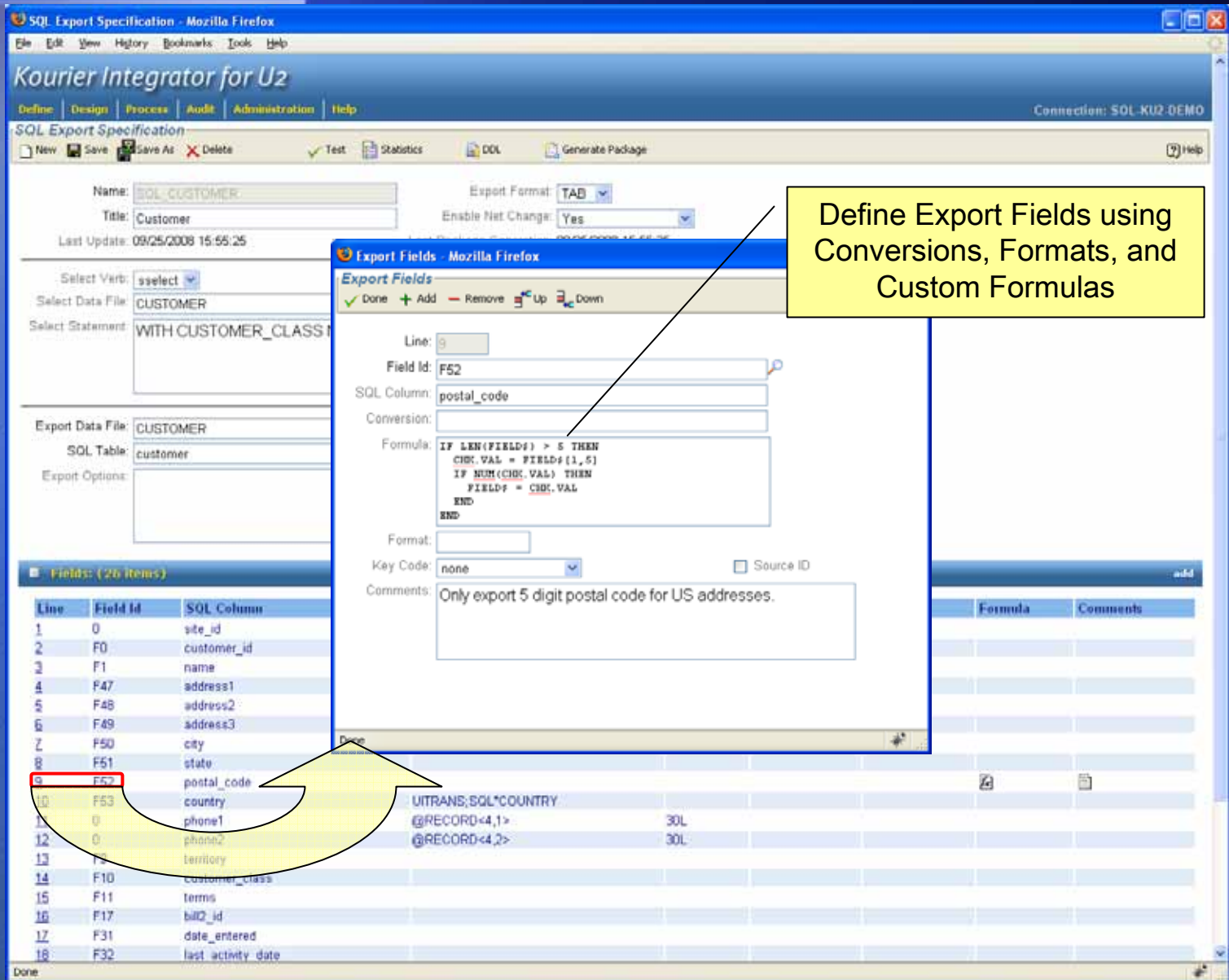
The screenshot shows the 'SQL Export Specification' window in Mozilla Firefox. The interface includes a menu bar (File, Edit, View, History, Bookmarks, Tools, Help) and a toolbar with buttons for New, Save, Save As, Delete, Test, Statistics, DDL, and Generate Package. The main area is divided into several sections:

- General Information:** Name: SQL_CUSTOMER, Title: Customer, Last Update: 09/25/2008 15:55:25, Export Format: TAB, Enable Net Change: Yes (highlighted with a callout).
- Select Verb:** sselect, Select Data File: CUSTOMER, Using File: (empty).
- Select Statement:** WITH CUSTOMER_CLASS NE "" (highlighted with a callout).
- Export Data File:** CUSTOMER, SQL Table: customer, Export Options: (empty), Export Verb Requires Select List: checked.
- Fields List:** A table with 26 items, including columns for Line, Field Id, SQL Column, Conversion, Format, Key Code, Source ID, Formula, and Comments. This table is highlighted with a callout.

Three callout boxes provide additional context:

- Easily Enable Net Change:** Points to the 'Enable Net Change' dropdown menu.
- Filter Source Data Before Processing:** Points to the 'Select Statement' text area.
- Define Fields / Columns to export with Primary Keys, Formatting, Conversions, Formulas, and Notes:** Points to the 'Fields' table.

Design: SQL Export Field



SQL Export Specification - Mozilla Firefox

Kourier Integrator for Uz

SQL Export Specification

Name: Export Format: Enable Net Change:

Title: Last Update: 09/25/2008 15:55:25

Select Verb: Select Data File: Select Statement:

Export Data File: SQL Table: Export Options:

Export Fields - Mozilla Firefox

Export Fields

Line: Field Id: SQL Column: Conversion: Formula:

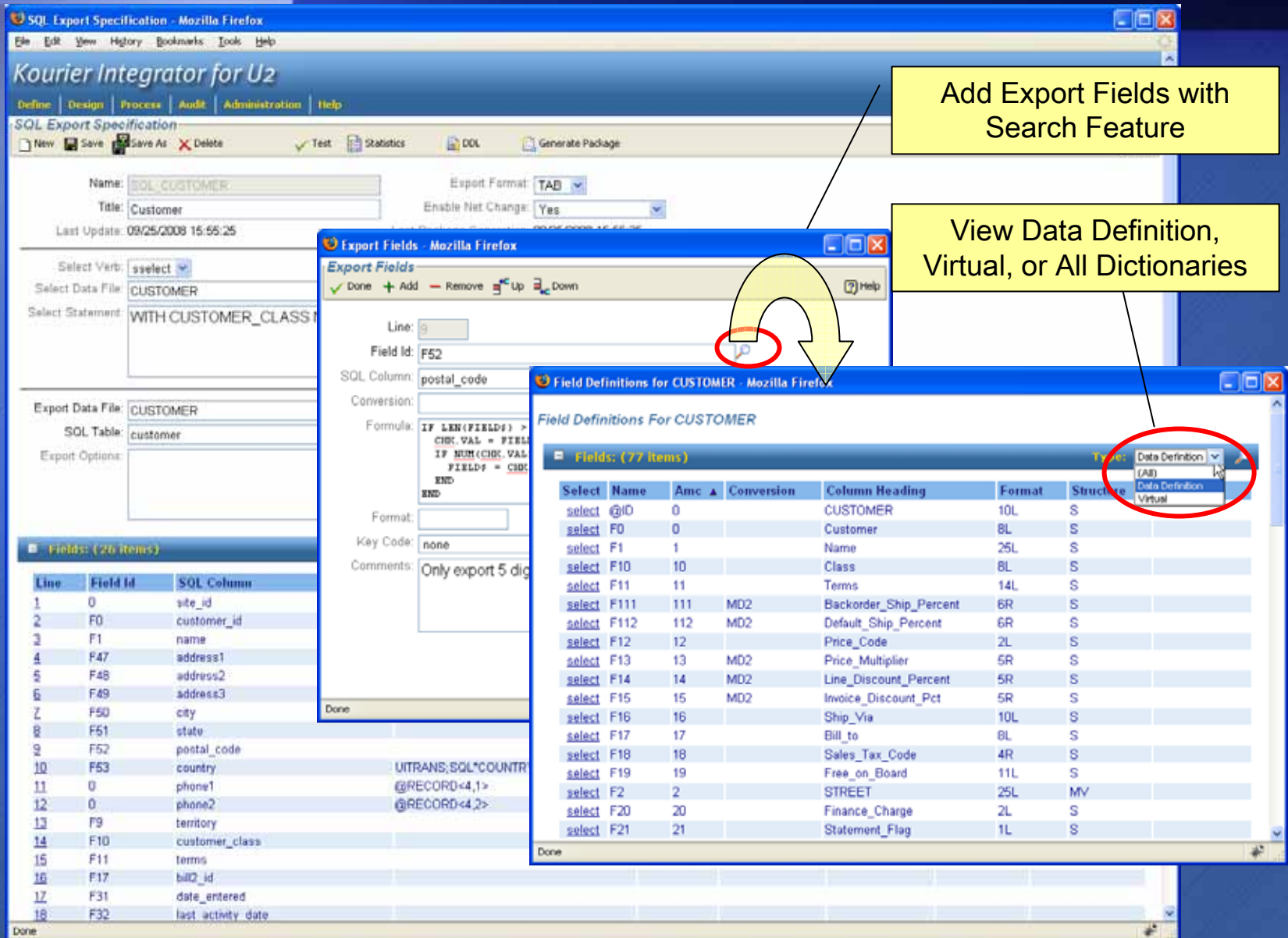
```
IF LEN(FIELD#) > 5 THEN
  CHG.VAL = FIELD#(1,5)
IF NUM(CHG.VAL) THEN
  FIELD# = CHG.VAL
END
END
```

 Format: Key Code: Source ID

Comments:

Line	Field Id	SQL Column	Formula	Comments
1	0	site_id		
2	F0	customer_id		
3	F1	name		
4	F47	address1		
5	F48	address2		
6	F49	address3		
7	F50	city		
8	F51	state		
9	F52	postal_code		
10	F53	country	UITRANS;SQL* COUNTRY	
11	0	phone1	@RECORD<4,1>	30L
12	0	phone2	@RECORD<4,2>	30L
13	F5	territory		
14	F10	customer_class		
15	F11	terms		
16	F17	bill2_id		
17	F31	date_entered		
18	F32	last activity date		

Design: SQL Export Field Select



The screenshot displays the 'SQL Export Specification' application interface. The main window shows configuration for an export named 'SQL_CUSTOMER' with a title of 'Customer'. The 'Export Fields' window is open, showing a list of fields with 'F52' selected. A red circle highlights the 'F52' field ID, with an arrow pointing to the 'Field Definitions for CUSTOMER' window. In this second window, a dropdown menu is open, showing options: 'Data Definition', '(All)', 'Data Definition', and 'Virtual'. A red circle highlights this dropdown menu.

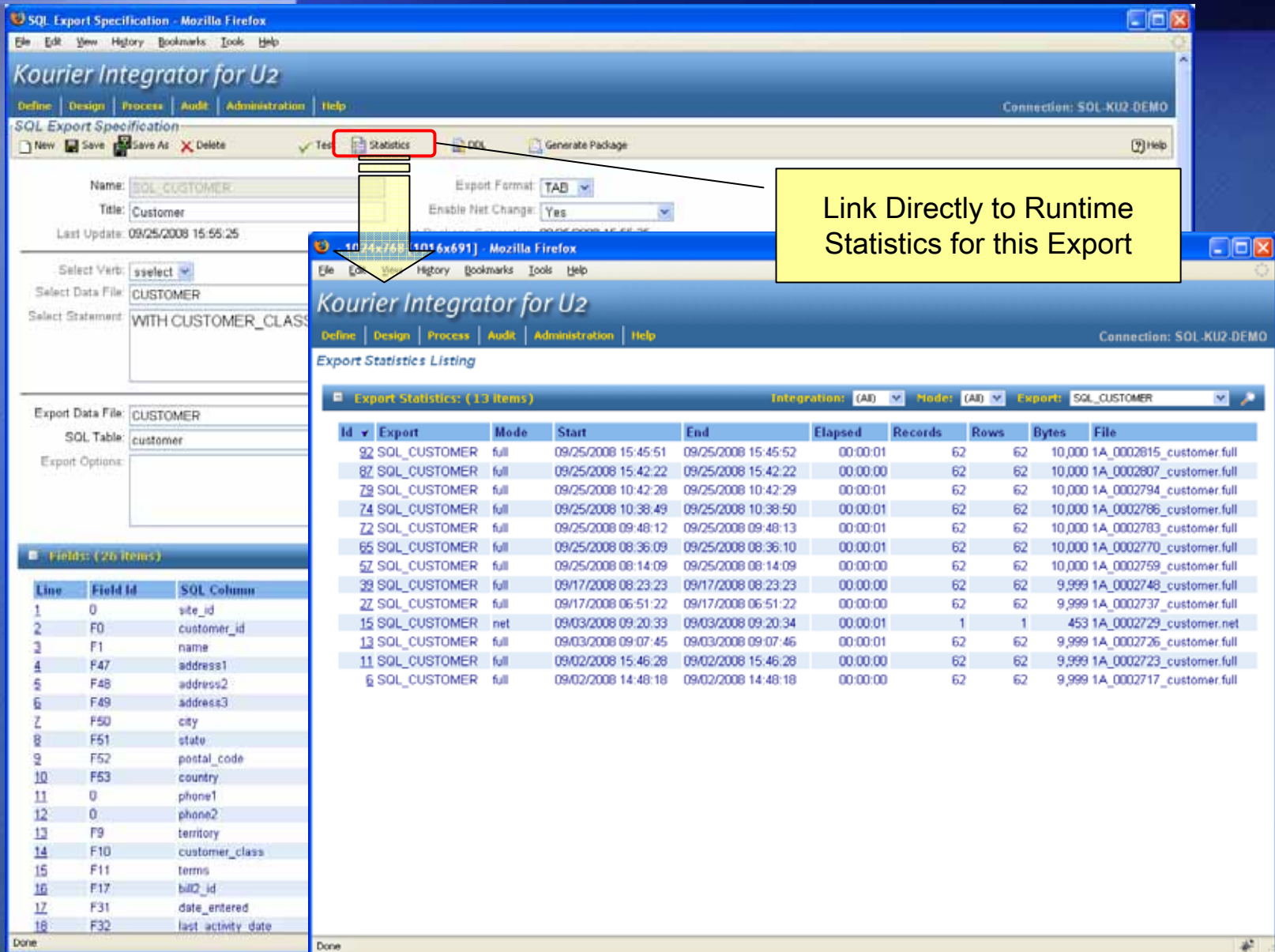
Add Export Fields with Search Feature

View Data Definition, Virtual, or All Dictionaries

Line	Field Id	SQL Column
1	0	site_id
2	F0	customer_id
3	F1	name
4	F47	address1
5	F48	address2
6	F49	address3
7	F50	city
8	F51	state
9	F52	postal_code
10	F53	country
11	0	phone1
12	0	phone2
13	F9	territory
14	F10	customer_class
15	F11	terms
16	F17	bill2_id
17	F31	date_entered
18	F32	last activity date

Select	Name	Amc	Conversion	Column Heading	Format	Structure
select	@ID	0		CUSTOMER	10L	S
select	F0	0		Customer	8L	S
select	F1	1		Name	25L	S
select	F10	10		Class	8L	S
select	F11	11		Terms	14L	S
select	F111	111	MD2	Backorder_Ship_Percent	6R	S
select	F112	112	MD2	Default_Ship_Percent	6R	S
select	F12	12		Price_Code	2L	S
select	F13	13	MD2	Price_Multiplier	5R	S
select	F14	14	MD2	Line_Discount_Percent	5R	S
select	F15	15	MD2	Invoice_Discount_Pct	5R	S
select	F16	16		Ship_Via	10L	S
select	F17	17		Bill_to	8L	S
select	F18	18		Sales_Tax_Code	4R	S
select	F19	19		Free_on_Board	11L	S
select	F2	2		STREET	25L	MV
select	F20	20		Finance_Charge	2L	S
select	F21	21		Statement_Flag	1L	S

Design: Export Statistics



SQL Export Specification - Mozilla Firefox

Kourier Integrator for U2

Define | Design | Process | Audit | Administration | Help

Connection: SQL-KU2-DEMO

SQL Export Specification

New Save Save As Delete Test **Statistics** SQL Generate Package Help

Name: SQL_CUSTOMER Export Format: TAB

Title: Customer Enable Net Change: Yes

Last Update: 09/25/2008 15:55:25

Select Verb: sselect

Select Data File: CUSTOMER

Select Statement: WITH CUSTOMER_CLASS

Export Data File: CUSTOMER

SQL Table: customer

Export Options:

Fields: (26 Items)

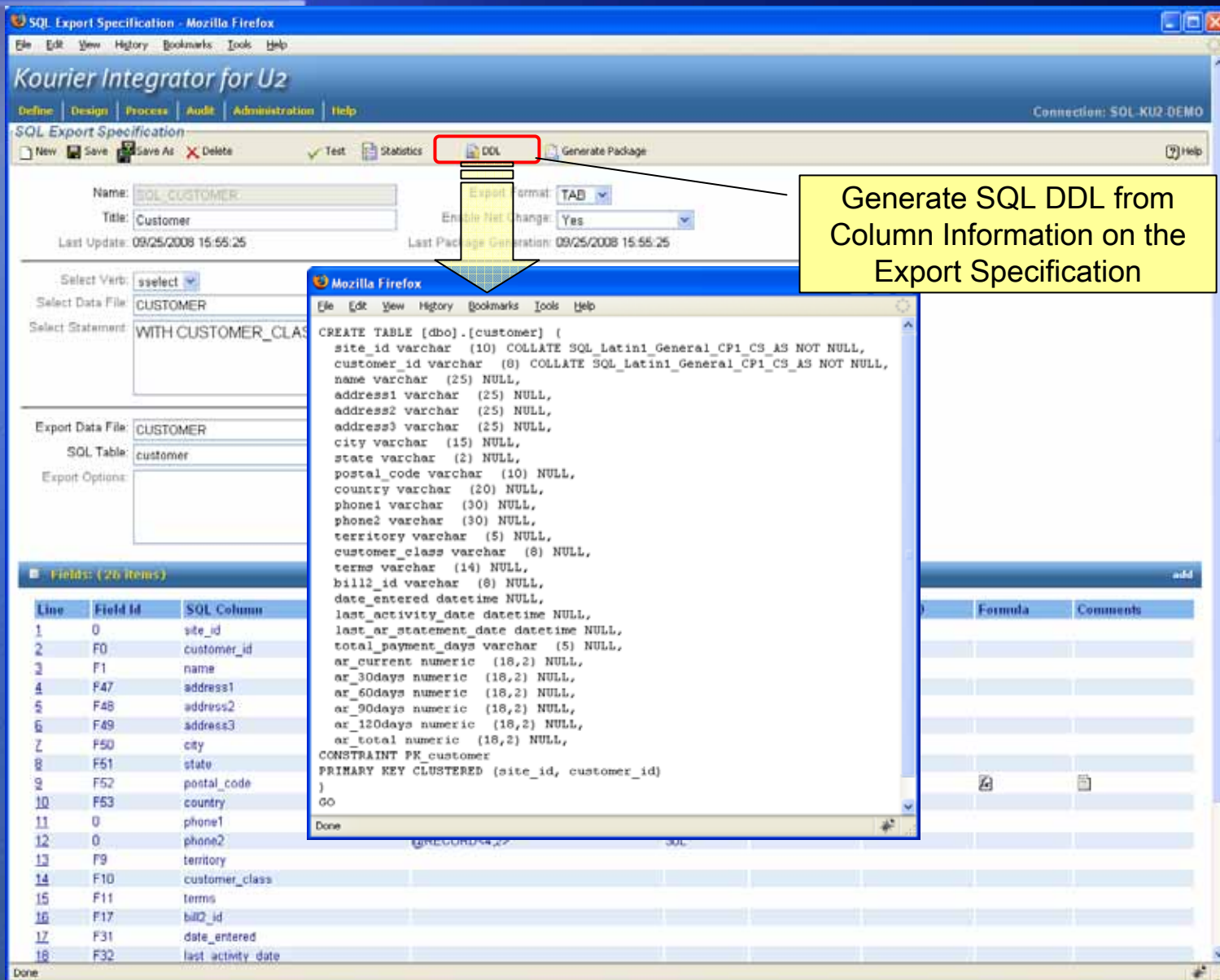
Line	Field Id	SQL Column
1	0	site_id
2	F0	customer_id
3	F1	name
4	F47	address1
5	F48	address2
6	F49	address3
7	F50	city
8	F51	state
9	F52	postal_code
10	F53	country
11	0	phone1
12	0	phone2
13	F9	territory
14	F10	customer_class
15	F11	terms
16	F17	bill2_id
17	F31	date_entered
18	F32	last activity date

Export Statistics Listing

Export Statistics: (13 Items) Integration: (All) Mode: (All) Export: SQL_CUSTOMER

id	Export	Mode	Start	End	Elapsed	Records	Rows	Bytes	File
92	SQL_CUSTOMER	full	09/25/2008 15:45:51	09/25/2008 15:45:52	00:00:01	62	62	10,000	1A_0002615_customer.full
87	SQL_CUSTOMER	full	09/25/2008 15:42:22	09/25/2008 15:42:22	00:00:00	62	62	10,000	1A_0002807_customer.full
29	SQL_CUSTOMER	full	09/25/2008 10:42:28	09/25/2008 10:42:29	00:00:01	62	62	10,000	1A_0002794_customer.full
74	SQL_CUSTOMER	full	09/25/2008 10:38:49	09/25/2008 10:38:50	00:00:01	62	62	10,000	1A_0002786_customer.full
72	SQL_CUSTOMER	full	09/25/2008 09:48:12	09/25/2008 09:48:13	00:00:01	62	62	10,000	1A_0002783_customer.full
65	SQL_CUSTOMER	full	09/25/2008 08:36:09	09/25/2008 08:36:10	00:00:01	62	62	10,000	1A_0002770_customer.full
57	SQL_CUSTOMER	full	09/25/2008 08:14:09	09/25/2008 08:14:09	00:00:00	62	62	10,000	1A_0002759_customer.full
39	SQL_CUSTOMER	full	09/17/2008 08:23:23	09/17/2008 08:23:23	00:00:00	62	62	9,999	1A_0002748_customer.full
27	SQL_CUSTOMER	full	09/17/2008 06:51:22	09/17/2008 06:51:22	00:00:00	62	62	9,999	1A_0002737_customer.full
15	SQL_CUSTOMER	net	09/03/2008 09:20:33	09/03/2008 09:20:34	00:00:01	1	1	453	1A_0002729_customer.net
13	SQL_CUSTOMER	full	09/03/2008 09:07:45	09/03/2008 09:07:46	00:00:01	62	62	9,999	1A_0002726_customer.full
11	SQL_CUSTOMER	full	09/02/2008 15:46:28	09/02/2008 15:46:28	00:00:00	62	62	9,999	1A_0002723_customer.full
6	SQL_CUSTOMER	full	09/02/2008 14:48:18	09/02/2008 14:48:18	00:00:00	62	62	9,999	1A_0002717_customer.full

Design: Generate SQL DDL



The screenshot shows the 'SQL Export Specification' window in Mozilla Firefox. The 'DDL' button is highlighted with a red box. A yellow callout box points to this button with the text: 'Generate SQL DDL from Column Information on the Export Specification'. Below the main window, a smaller window displays the generated SQL DDL for a table named 'customer'.

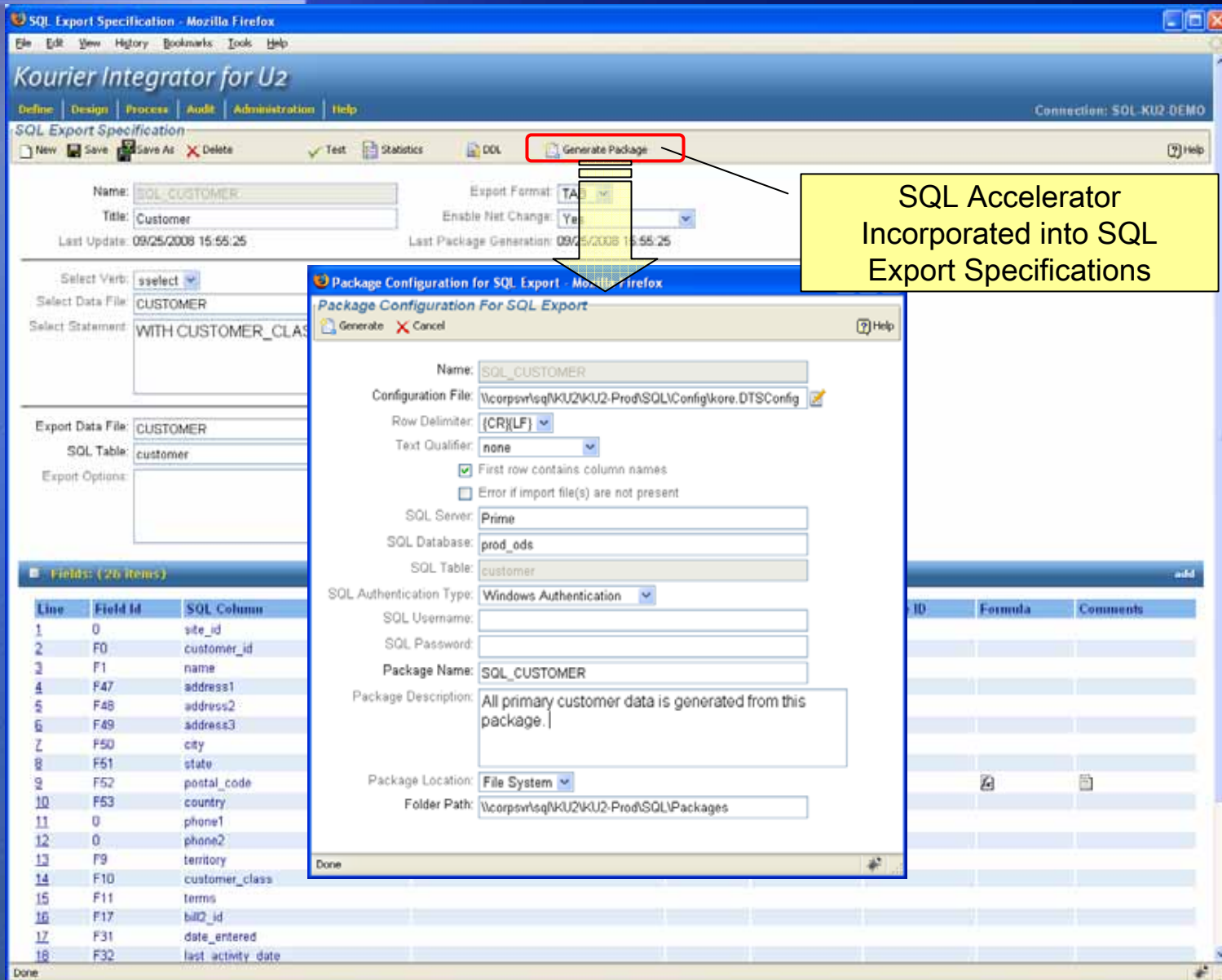
Export Specification Fields:

Line	Field Id	SQL Column
1	0	site_id
2	F0	customer_id
3	F1	name
4	F47	address1
5	F48	address2
6	F49	address3
7	F50	city
8	F51	state
9	F52	postal_code
10	F53	country
11	0	phone1
12	0	phone2
13	F9	territory
14	F10	customer_class
15	F11	terms
16	F17	bill2_id
17	F31	date_entered
18	F32	last activity date

Generated SQL DDL:

```
CREATE TABLE [dbo].[customer] (
  site_id varchar (10) COLLATE SQL_Latin1_General_CP1_CS_AS NOT NULL,
  customer_id varchar (8) COLLATE SQL_Latin1_General_CP1_CS_AS NOT NULL,
  name varchar (25) NULL,
  address1 varchar (25) NULL,
  address2 varchar (25) NULL,
  address3 varchar (25) NULL,
  city varchar (15) NULL,
  state varchar (2) NULL,
  postal_code varchar (10) NULL,
  country varchar (20) NULL,
  phone1 varchar (30) NULL,
  phone2 varchar (30) NULL,
  territory varchar (5) NULL,
  customer_class varchar (8) NULL,
  terms varchar (14) NULL,
  bill2_id varchar (8) NULL,
  date_entered datetime NULL,
  last_activity_date datetime NULL,
  last_ar_statement_date datetime NULL,
  total_payment_days varchar (5) NULL,
  ar_current numeric (18,2) NULL,
  ar_30days numeric (18,2) NULL,
  ar_60days numeric (18,2) NULL,
  ar_90days numeric (18,2) NULL,
  ar_120days numeric (18,2) NULL,
  ar_total numeric (18,2) NULL,
  CONSTRAINT PK_customer
  PRIMARY KEY CLUSTERED (site_id, customer_id)
)
GO
```

Design: Generate SSIS Package



The screenshot shows the 'SQL Export Specification' application window. The 'Generate Package' button is highlighted with a red box. A yellow callout box points to this button with the text: "SQL Accelerator Incorporated into SQL Export Specifications".

The 'Package Configuration for SQL Export' dialog box is open, showing the following configuration details:

- Name: SQL_CUSTOMER
- Configuration File: \corp\svr\sql\KU2\KU2-Prod\SQL\Config\kore.DTSConfig
- Row Delimiter: {CR}{LF}
- Text Qualifier: none
- First row contains column names
- Error if import file(s) are not present
- SQL Server: Prime
- SQL Database: prod_ods
- SQL Table: customer
- SQL Authentication Type: Windows Authentication
- SQL Username: (empty)
- SQL Password: (empty)
- Package Name: SQL_CUSTOMER
- Package Description: All primary customer data is generated from this package.
- Package Location: File System
- Folder Path: \corp\svr\sql\KU2\KU2-Prod\SQL\Packages

The main application window also displays a list of fields for the 'customer' table:

Line	Field Id	SQL Column
1	0	site_id
2	F0	customer_id
3	F1	name
4	F47	address1
5	F48	address2
6	F49	address3
7	F50	city
8	F51	state
9	F52	postal_code
10	F53	country
11	0	phone1
12	0	phone2
13	F9	territory
14	F10	customer_class
15	F11	terms
16	F17	bill2_id
17	F31	date_entered
18	F32	last activity date

Process: Service

Service - Mozilla Firefox

File Edit View History Bookmarks Tools Help

Kourier Integrator for U2

Define Design Process Audit Administration Help Connection: SOL-KU2-DEMO

Service

New Save Save As Delete Run History DDL Help

Service:

Description:

Last Run Start: 09/25/2008 15:45:51

Last Run End: 09/25/2008 15:45:53

Elapsed Time: 00:00:02

Source Queue:

Source Append Address:

Command:

Target Queue:

Target Append Address:

Save Undeliverable Messages

Done

Group Multiple Export Specifications into One or More Services

Create Unique File Names Using Substitution Processor

Process: Schedule

Schedule - Mozilla Firefox

File Edit View History Bookmarks Tools Help

Kourier Integrator for U2

Define Design Process Audit Administration Help

Connection: SOL-KU2-DEMO

Schedule

New Save Delete Run History Start Stop Help

Description:

Integration: SQL

Status: Stopped

Last Run Start: 09/25/2008 15:45:47 Last Run End: 09/25/2008 15:46:01

Elapsed Time: 00:00:14

Accounts Services Schedules

KU2-DEMO KU2-DEMO2 KU2-TEST

Select All Deselect All

Accounts Services Schedules

SQL_ALL SQL_ARLI SQL_AR_INVOICE

SQL_CUSTOMER SQL_CUSTOMER_CLASS SQL_PARTS

SQL_PART_CLASS SQL_SALESREPS SQL_TERRITORY

Select All Deselect All

Accounts Services Schedules

Schedules: (2 items) add

Line	Interval	Start Time	End Time	Frequency	Day Of Month	Run Once At	Export Mode
1	Weekdays	06:00	20:00	00:03			Net Change
2	Sunday					08:15	Full Refresh

Done

Multiple Tabs Shown Separately for Clarity

Include one or more accounts within Schedule

Select one or more Services to Schedule

Define one or more Schedules for running Services

Event Notification and Configuration - Mozilla Firefox

File Edit View History Bookmarks Tools Help

Kourier Integrator for U2

Define Design Process Audit Administration Help Connection: SOL-KU2-DEMO

Event Notification And Configuration

Save Help

Log File:
 Email:
 Console:
 Event Log Size:

Complete Control of Event Log Information Detail (Verbose, Debug, Trace, Information, Warning, & Error)

Properties: (4 items) add

Line	Schedule/Service	Source	Event	Type	Log	Email
1		KMK.SCHEDULE	KMK-089		Y	EVT-002
2		KMK.EXPORT		ERR	Y	EVT-001
3			KMK-526		Y	EVT-003
4			KMK-527		Y	EVT-003

Define Logging and E-mail Notification for Each Service, Source, and Event

Done

Audit: Event Log

Event Log Listing - Mozilla Firefox

Kourier Integrator for U2

Define | Design | Process | Audit | Administration | Help

Connection: SQL-KU2-DEMO

Event Log Listing

Event Logs: (21 items)

ID	Date	Time	Type	Service	Run	Source	Event	Message
64692	Sep 30, 2008	11:12:36	INFO	SQL_CUSTOMER	2251	KMK.SERVICE	KMK-09	Processed service successfully. Service: SQL_CUSTOMER
64691	Sep 30, 2008	11:12:36	INFO	SQL_CUSTOMER	2251	KMK.DEQMSG	KMK-11	Message ID '1732' was delivered to FILE-type queue SQL_OUTBOX. Headers: [(export: SQL_CUSTOMER_SALESREP), (sql_table: customer_salesrep), (net_change: No), (export_mode: full), (Kourier-FileRef: D:\DBMS\LIVE\KU2-DEMO\KT_IOTEMP\KT_IOTEMP\EXP00004054.TMP), (MessageId:), (MessageSize: 2049), (ExportRecords: 62), (ExportRows: 110), (RunTimeStatID: 110), (Service-ID: SQL_CUSTOMER), (SEQUENCE: 2629), (URL: //D:/TEMP/KU2/KU2-DEMO/SQL\INBOX\1A_0002629_customer_salesrep.full)]
64690	Sep 30, 2008	11:12:36	TRACE	SQL_CUSTOMER	2251	KMK.TRACE		Executing: DOS /C MOVE "D:\DBMS\LIVE\KU2-DEMO\KT_IOTEMP\KT_IOTEMP\EXP00004054.TMP" "D:\TEMP\KU2\KU2-DEMO\SQL\INBOX\1A_0002629_customer_salesrep.full"
64689	Sep 30, 2008	11:12:36	TRACE	SQL_CUSTOMER	2251	KMK.TRACE		Executing: DOS /C dir /b D:\TEMP\KU2\KU2-DEMO\SQL\INBOX\1A_0002629_customer_salesrep.full
64688	Sep 30, 2008	11:12:36	TRACE	SQL_CUSTOMER	2251	KMK.TRACE		Executing: DOS /C COPY D:\DBMS\LIVE\KU2-DEMO\KT_IOTEMP\KT_IOTEMP\EXP00004054.TMP D:\DBMS\LIVE\KU2-DEMO\KT_MESSAGE\MESSEGE1718
								Copying file referenced by message
								Saving message 1718
							KMK-31	Message ID '1731' was delivered to FILE-type queue SQL_OUTBOX. Headers: [(export: SQL_CUSTOMER), (sql_table: customer), (net_change: No), (export_mode: full), (Kourier-FileRef: D:\DBMS\LIVE\KU2-DEMO\KT_IOTEMP\KT_IOTEMP\EXP00004053.TMP), (MessageId:), (MessageSize: 10000), (ExportRecords: 62), (ExportRows: 109), (Service-ID: SQL_CUSTOMER), (SEQUENCE: 2628), (URL: //D:/TEMP/KU2/KU2-DEMO/SQL\INBOX\1A_0002628_customer.full)]
64694	Sep 30, 2008	11:12:36	TRACE	SQL_CUSTOMER	2251	KMK.TRACE		Executing: DOS /C MOVE "D:\DBMS\LIVE\KU2-DEMO\KT_IOTEMP\KT_IOTEMP\EXP00004053.TMP" "D:\TEMP\KU2\KU2-DEMO\SQL\INBOX\1A_0002628_customer.full"
64693	Sep 30, 2008	11:12:36	TRACE	SQL_CUSTOMER	2251	KMK.TRACE		Executing: DOS /C dir /b D:\TEMP\KU2\KU2-DEMO\SQL\INBOX\1A_0002628_customer.full
64692	Sep 30, 2008	11:12:36	TRACE	SQL_CUSTOMER	2251	KMK.TRACE		Executing: DOS /C COPY D:\DBMS\LIVE\KU2-DEMO\KT_IOTEMP\KT_IOTEMP\EXP00004053.TMP D:\DBMS\LIVE\KU2-DEMO\KT_MESSAGE\MESSEGE1717
64691	Sep 30, 2008	11:12:36	TRACE	SQL_CUSTOMER	2251	KMK.TRACE		Copying file referenced by message
64690	Sep 30, 2008	11:12:36	TRACE	SQL_CUSTOMER	2251	KMK.TRACE		Saving message 1717
64679	Sep 30, 2008	11:12:36	INFO	SQL_CUSTOMER	2251	KMK.EXPORT	KMK-15	2 exports processed.

Done

Event Log Provides Detailed Information for Auditing and Issue Resolution

Audit: Export Statistics

Export Statistics Listing - Mozilla Firefox

Kourier Integrator for Uz

Define | Design | Process | Audit | Administration | Help

Export Statistics Listing

Export Statistics: (82 Items)

Use Export Statistics to Monitor and Evaluate Performance

Id	Export	Mode	Start	End	Elapsed	Records	Rows	Bytes	File
98	SQL_TERRITORY	full	09/25/2008 15:45:59	09/25/2008 15:46:00	00:00:01	10	10	270	1A_0002825_territory.full
97	SQL_SALESREP	full	09/25/2008 15:45:58	09/25/2008 15:45:58	00:00:00	13	13	407	1A_0002824_salesrep.full
96	SQL_PART_CLASS	full	09/25/2008 15:45:57	09/25/2008 15:45:57	00:00:00	13	13	272	1A_0002822_part_class.full
95	SQL_PARTS	full	09/25/2008 15:45:56	09/25/2008 15:45:56	00:00:01	184	184	9,512	1A_0002820_part.full
94	SQL_CUSTOMER_CLASS	full	09/25/2008 15:45:54	09/25/2008 15:45:54	00:00:00	13	13	269	1A_0002818_customer_class.full
93	SQL_CUSTOMER_SALESREP	full	09/25/2008 15:45:52	09/25/2008 15:45:52	00:00:00	62	110	2,159	1A_0002816_customer_salesrep.full
92	SQL_CUSTOMER	full	09/25/2008 15:45:51	09/25/2008 15:45:52	00:00:01	62	62	10,000	1A_0002815_customer.full
91	SQL_ARINVOICE_SALESREP	full	09/25/2008 15:45:49	09/25/2008 15:45:50	00:00:01	25	50	1,048	1A_0002813_ar_invoice_salesrep.full
90	SQL_ARINVOICE	full	09/25/2008 15:45:49	09/25/2008 15:45:49	00:00:00	26	26	5,266	1A_0002812_ar_invoice.full
89	SQL_ARLI	full	09/25/2008 15:45:47	09/25/2008 15:45:48	00:00:01	29	29	2,467	1A_0002810_ar_invoice_line.full
88	SQL_CUSTOMER_SALESREP	full	09/25/2008 15:42:23	09/25/2008 15:42:23	00:00:00	62	110	2,159	1A_0002808_customer_salesrep.full
87	SQL_CUSTOMER	full	09/25/2008 15:42:22	09/25/2008 15:42:22	00:00:00	62	62	10,000	1A_0002807_customer.full
85	SQL_TERRITORY	full	09/25/2008 10:42:37	09/25/2008 10:42:37	00:00:00	10	10	270	1A_0002805_territory.full
84	SQL_SALESREP	full	09/25/2008 10:42:35	09/25/2008 10:42:36	00:00:01	13	13	407	1A_0002803_salesrep.full
83	SQL_PART_CLASS	full	09/25/2008 10:42:34	09/25/2008 10:42:34	00:00:00	13	13	272	1A_0002801_part_class.full
82	SQL_PARTS	full	09/25/2008 10:42:32	09/25/2008 10:42:33	00:00:01	184	184	9,512	1A_0002799_part.full
81	SQL_CUSTOMER_CLASS	full	09/25/2008 10:42:31	09/25/2008 10:42:31	00:00:00	13	13	269	1A_0002797_customer_class.full
80	SQL_CUSTOMER_SALESREP	full	09/25/2008 10:42:29	09/25/2008 10:42:29	00:00:00	62	110	2,159	1A_0002795_customer_salesrep.full
79	SQL_CUSTOMER	full	09/25/2008 10:42:28	09/25/2008 10:42:29	00:00:01	62	62	10,000	1A_0002794_customer.full
78	SQL_ARINVOICE_SALESREP	full	09/25/2008 10:42:26	09/25/2008 10:42:27	00:00:01	25	50	1,048	1A_0002792_ar_invoice_salesrep.full
77	SQL_ARINVOICE	full	09/25/2008 10:42:26	09/25/2008 10:42:26	00:00:00	26	26	5,266	1A_0002791_ar_invoice.full
76	SQL_ARLI	full	09/25/2008 10:42:24	09/25/2008 10:42:25	00:00:01	29	29	2,467	1A_0002789_ar_invoice_line.full
75	SQL_CUSTOMER_SALESREP	full	09/25/2008 10:38:50	09/25/2008 10:38:50	00:00:00	62	110	2,159	1A_0002787_customer_salesrep.full
74	SQL_CUSTOMER	full	09/25/2008 10:38:49	09/25/2008 10:38:50	00:00:01	62	62	10,000	1A_0002786_customer.full
73	SQL_CUSTOMER_SALESREP	full	09/25/2008 09:48:13	09/25/2008 09:48:13	00:00:00	62	110	2,159	1A_0002784_customer_salesrep.full

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View Export Statistics for each Export including Run Mode, Elapsed Run Time, Number of Records and Rows Exported, and more

For More Information on MultiValue to SQL Integration Contact Kore Technologies

- Go To Kourier Integrator's Web Site
http://www.koretech.com/kore_integrator.asp
- Call 866-763-KORE (5673)
- E-Mail info@koretech.com
- Browse Kore's Web Site
<http://www.koretech.com>

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