



Enable your Applications to
run with IDS!

Shawn Moe
IBM

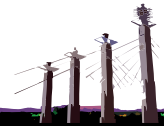
B03
Monday, April 28, 2008 • 1:00 p.m. – 2:00 p.m.

2008 IIUG Informix Conference



Agenda

- Why enable your application for IDS?
- What help is available?
 - New IDS support
 - IBM's Migration Toolkit
 - Mapping database constructs to IDS
- Case Study
 - Enabling your SQL Server application for IDS
- Demo
- Wrap up and Questions



Why enable your application for IDS?

- New customers for your application!
 - Another DB may get your application in the door!
- Additional hardware/OS support
 - Linux and Unix options available for formerly Windows-only SQL Server applications
 - IDS z/OS and new Macintosh platform support may open up new groups of users for your application
- Your application functionality can take advantage of new IDS features
 - Replication/Mach 11
 - Data Blades, etc.



What's involved in Application Enablement?

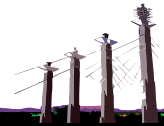
- 1) Assess source DB – size, complexity
- 2) Educate & Train
- 3) Setup new environment – dev, admin, test, production
- 4) Obtain source structure
- 5) Port source structure
- 6) Deploy objects to target
- 7) Migrate data
- 8) Verify target
- 9) Tune performance
- 10) Modify applications
- 11) Test and Validate entire application



MTK can help with the items in blue

What Help is available?

- New IDS support for vendor specific syntax
- IBM's Migration Toolkit
- IBM's new database connectivity improves application portability between IDS and DB2
 - New Java Common Client, .NET and other connectivity drivers
 - New DRDA support in IDS
- IBM Data Studio



What's new in IDS to help application enablement?

- Some IDS 11.10 enhancements to improve application portability:
 - SPL Looping constructs
 - SPL GOTO and LABEL statements
 - 22 new built-in functions
 - ADD_MONTHS(), CEIL(), FLOOR(), LAST_DAY(), ROUND(), TO_CHAR(), TO_NUMBER(), RTRIM(), LTRIM(), and more ...
 - New LAST COMMITTED isolation level
 - Multiple INSERT, DELETE, UPDATE, and SELECT triggers on a table and multiple INSTEAD OF triggers for the view



New Built-in functions:

ADD_MONTHS()

ASCII()

BITAND()

BITANDNOT()

BITNOT()

BITOR()

BITXOR()

CEIL()

FLOOR()

FORMAT_UNITS()

LAST_DAY()

LTRIM()

MONTHS_BETWEEN ()

NEXT_DAY ()

NULLIF()

POWER()

ROUND()

RTRIM()

SYSDATE()

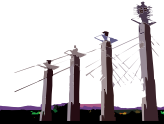
TO_CHAR()

TO_NUMBER()

TRUNC()

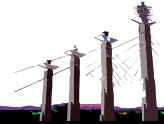
What's new in IDS to help application enablement?

- IDS Cheetah 2 is adding support for:
 - Dynamic cursor support in SPL
 - EXECUTE IMMEDIATE
 - OPEN, FETCH, CLOSE statements
 - And more...
- SPL restrictions have inhibited enablements for too long – NO MORE!



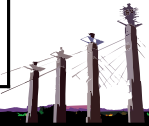
IBM's Migration Toolkit (MTK)

- Developed to help convert structures and data residing in other RDBMS to work with IBM databases
 - reducing the cost of enablement
- Free download from the web
<http://www.ibm.com/software/data/db2/migration/mtk>
- Free email support via mtk@us.ibm.com
- Easy to use
- Addresses the issues of 'Real World' migrations
- Linked to IBM's development teams

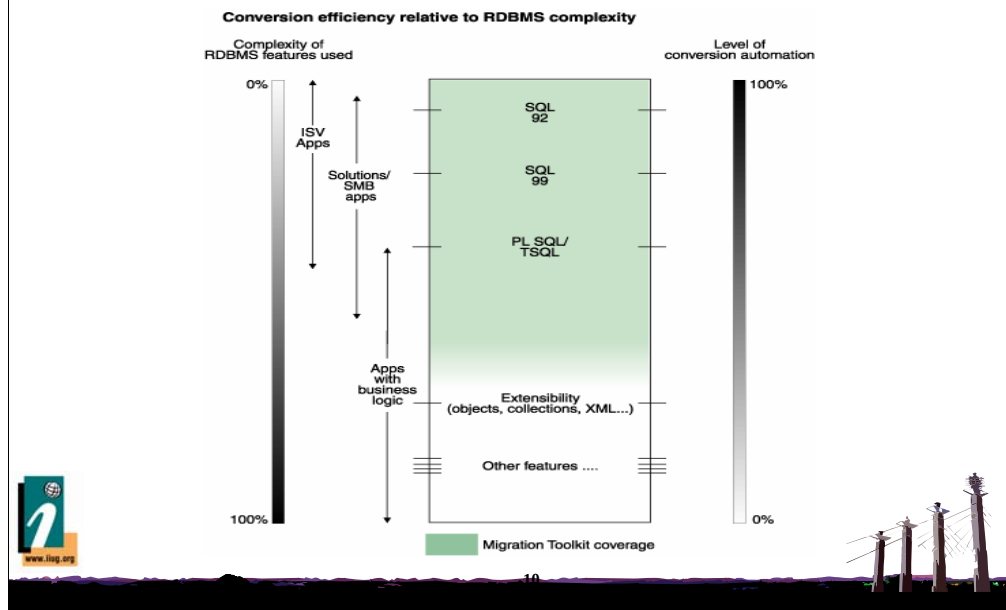


Migration Toolkit Capabilities

	Sybase ASE	SQL Server	Oracle	Sybase ASA	MySQL
DB2 UDB (LUW)	X	X	X	X	X
DB2 iSeries	X	X	X		X
DB2 z/OS	X		X		
IDS		X	X	X	X

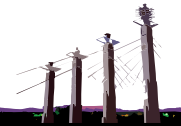
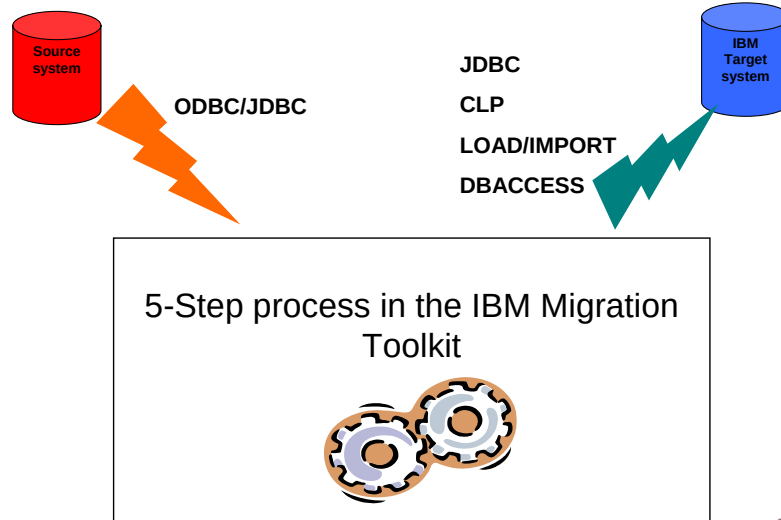


Level of Conversion Automation Using MTK

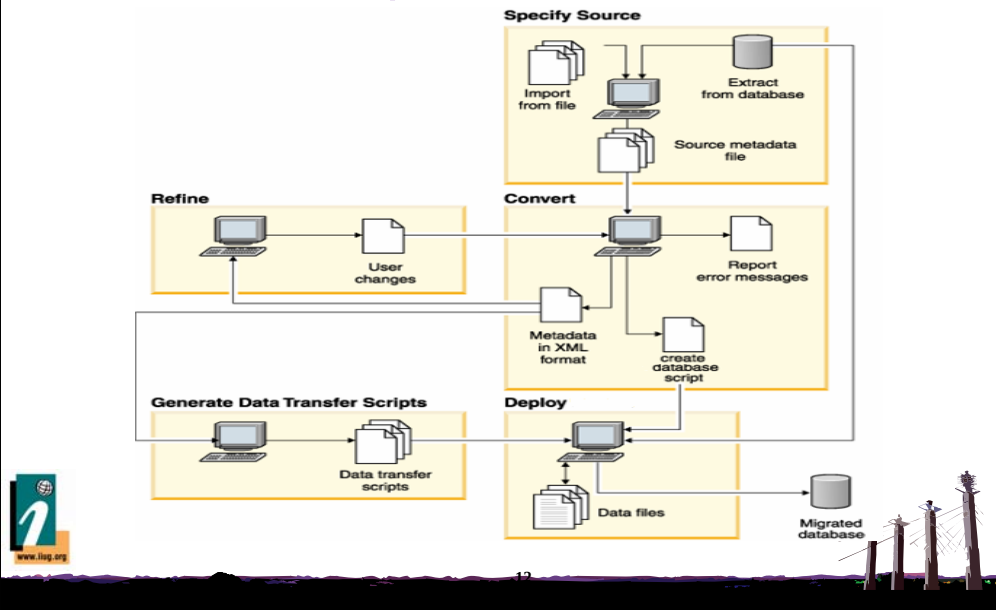


MTK is not Magic Toolkit. Some manual intervention may be needed. But the tool is highly effective in the green areas

Converting to IBM Data Servers

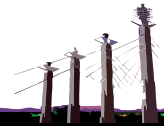


MTK's 5-Step Conversion Process



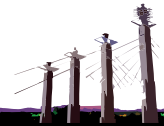
What does MTK convert?

- DDL (create table, create index, create view, alter table...)
- SQL/DML Statements (insert, update, delete...)
- Triggers
- Procedures
- Functions



What does MTK not convert?

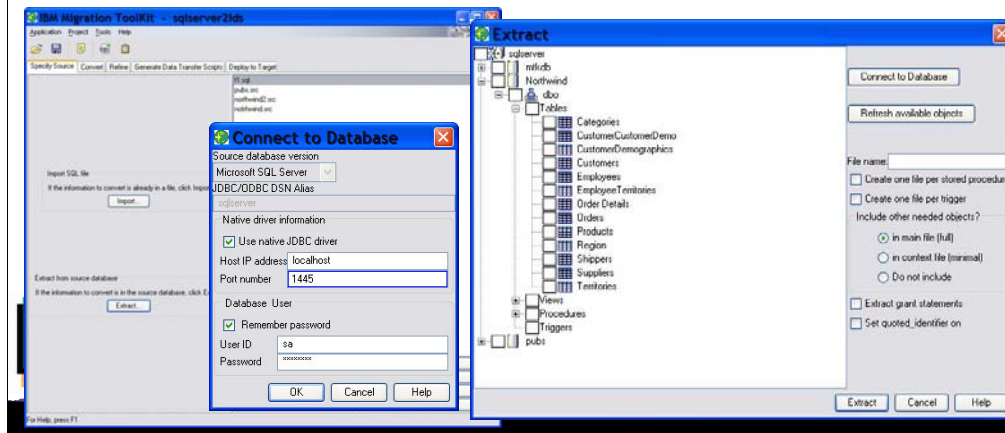
- Applications
 - but it can help convert SQL statements using the MTK SQL Translator
- HA/Replication setup
- OLAP specific features
- Catalog/system tables
- Statements specific to system administration



IBM Migration Toolkit

TAB 1 - SPECIFY SOURCE

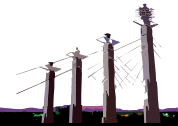
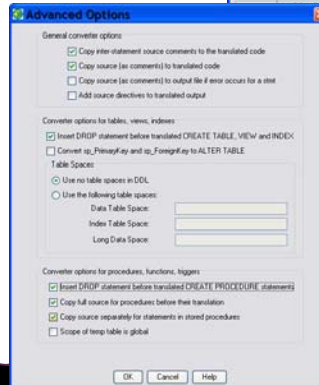
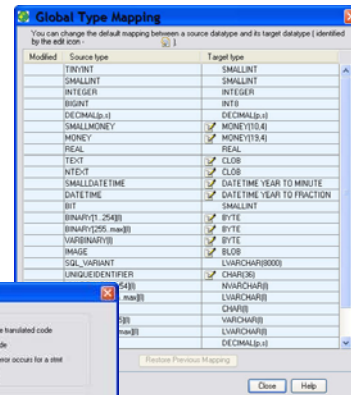
- Imported from an existing Database or
- Extracted through a direct connection with the source database
 - If extraction is done, you can select a subset of the source database for migration



IBM Migration Toolkit

TAB 2 - CONVERT

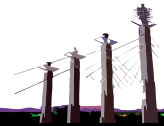
- Source metadata is converted to the equivalent SQL language. The following files result from the conversion:
 - SQL scripts (*.ids)
 - Error messages (*.rpt)
 - XML metadata (*.mtd)
- Contains machine-readable XML that is used by MTK to describe source, target, and mapping information



IBM Migration Toolkit

TAB 3 - REFINE

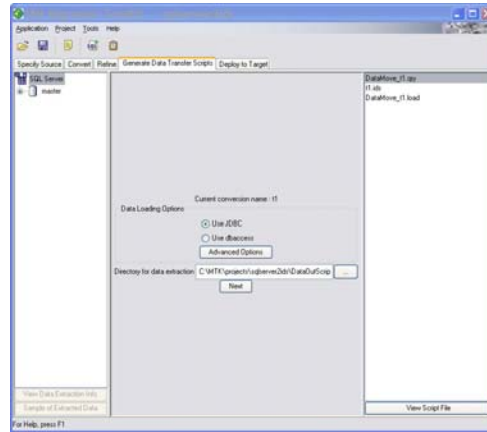
- Analyze and make changes to eliminate errors that occurred during conversion
 - The following information can be changed to correct conversion messages/errors:
 - Source SQL stored procedures and triggers
 - Some IDS object names, such as table names and column names
 - Changes are applied by returning to the Convert step
 - If additional changes are made, you need to rerun the converter to reflect these changes in the metadata
 - There is no limit to the number of times the Refine and Convert steps can be used to achieve the desired results



IBM Migration Toolkit

TAB 4 - GENERATE DATA TRANSFER SCRIPTS

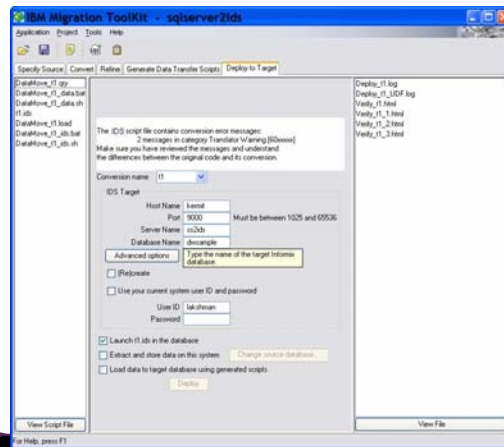
- Data movement scripts are prepared for loading data to the target IDS database
- A batch file is prepared to be deployed in the next step if the user wishes to load data at that time



IBM Migration Toolkit

TAB 5 - DEPLOY TO IDS

- Connects to the IDS database
- The scripts prepared in the earlier steps are deployed to create the IDS database and create the metadata
- The source data is extracted and loaded if those options for the source data are selected
- All Java and SQL MTK internal UDFs are created automatically

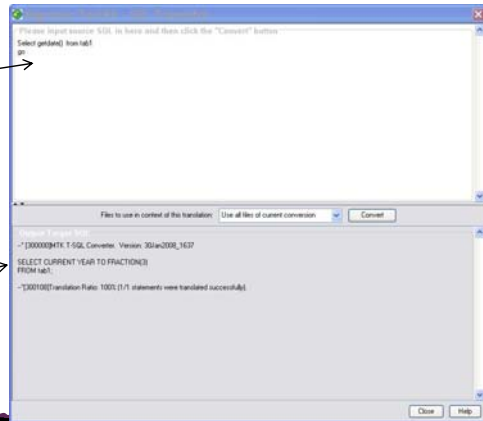


IBM MTK – SQL Translator

- Immediate ('on-the-fly') translation of source SQL statements to IDS SQL statements
 - Enables 'experimentation' with source statements to obtain a desired output or Validate a particular approach or statement

Paste your SQL statement

Compatible IDS statement returned



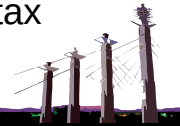
Mapping other database constructs to IDS

- MTK product documentation contains detailed support matrixes
 - showing source DBMS constructs and how they are/should be converted for IDS
- Conversion Help is available for conversions from
 - Oracle
 - MySQL
 - SQL Server



Mapping other database constructs to IDS

- Conversions available for most:
 - Data types
 - Expressions
 - Conditions
 - Constraints
 - DDL statements
 - DML statements
 - Stored Procedure Language specific syntax

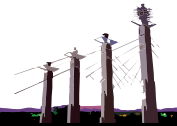


Case Study

Enabling your SQL Server application for IDS

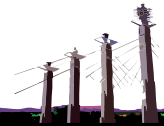


Demo



Wrap Up

- MTK has been expanded to support IDS as a target
 - Supported sources now include Oracle, SQL Server and MySQL
- MTK is not the “Magic Toolkit”
 - But it can certainly help you to add IDS as a database option for your application!
 - Additional support and fixes being worked



Questions?



Session B03

Enable your Applications to run with IDS!

Shawn Moe

IBM

smoe@us.ibm.com

mtk@us.ibm.com

