

Oracle to SQL Server 2005 Migration

Methodology and Practice

Presented By:
Barry Young



Agenda



- Introduction

- Migration: Oracle to SQL Server
 - Methodology: Overview of the Process
 - Database Migration Practice:
 - SQL Server Migration Assistant (SSMA) Tool
 - Additional Migration Features
 - Non-Automated Migration Tasks

- Questions

Introduction

Proactive Performance Solutions



- IT consulting firm based in Delaware
 - Founded in 1993

- Focus on:
 - Infrastructure & Managed Services
 - Application Development & Integration
 - .NET Development
 - Web Part Development
 - Database Services
 - SQL Server Consulting
 - Upgrades and Migrations
 - Tuning and Sizing
 - Portal Solutions

Migration Methodology



1. Assess the Migration Project

- Specify the Scope of the Migration Project
- Determine Infrastructure and Operational Considerations
- Assess Automation Impact with SSMA (Migration Analyzer)

2. Planning

- Infrastructure and Operational Requirements
- Client and Middleware Requirements
- Server Requirements with Migration Assistant Automation
- Timing, Staffing and Cost Estimates

3. Migrate Schema, Data & Business Logic

- Infrastructure and Operational Migration
- Schema and Data: SSMA Schema Migrator & Data Migrator

4. Test the Converted Database

- Infrastructure and Operations Test Plan
- SSMA Migration Tester

5. Migrate the Application

- Convert the Application(s)/Clients

6. Test, Integrate and Deploy

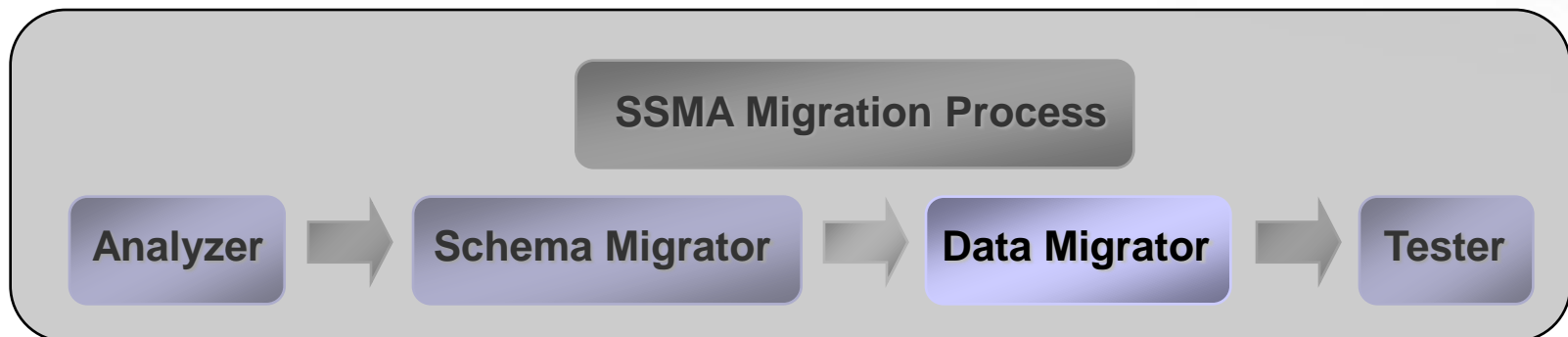
- Integration and Application Test Plan
- Performance Optimization

Practice

SSMA Data Migrator



- Migrates Data from Oracle to SQL Server
- Data can be migrated one table at a time or all at once
- Use *SQL Server Integration Services* if necessary for:
 - Large Data Volumes
 - Complex Transformations

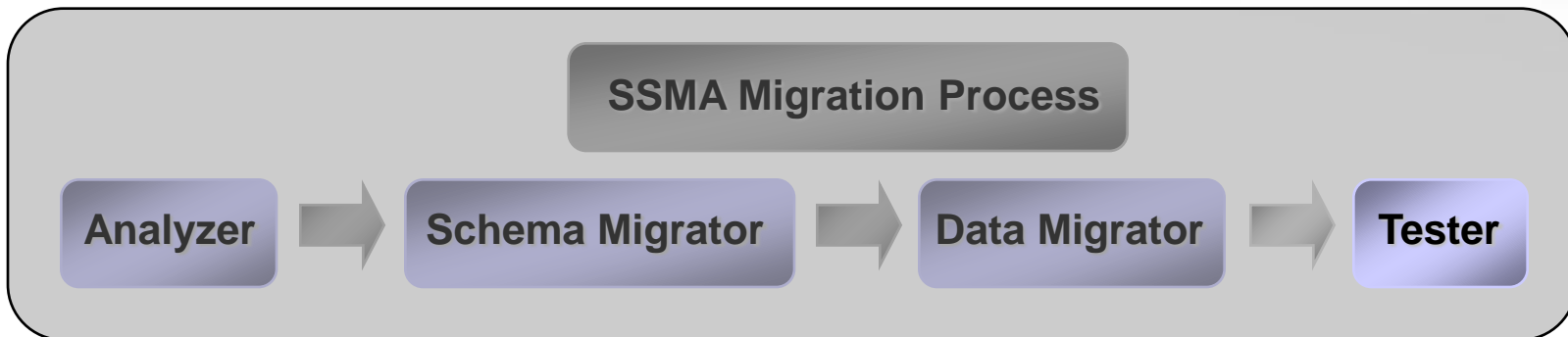


Practice

Using the Migration Tester



- Choose stored procedures, functions to test
- Prepare test case
 - Build superset of the tables that may be effected as a result of running the routines
 - Configure the test data using regular expressions or pre-defined data domains
- Execute test case
 - Configure the input arguments to the routines
 - Configure how many times to run the test



SSMA

Requirements and Version Support



- Oracle Database Supported
 - Oracle 8, Oracle 8i, Oracle 9i, Oracle 10g

- SQL Server Supported
 - SQL Server 2000 in v1.0
 - SQL Server 2005 in V2.0

- System Requirement
 - Windows 2000/XP
 - 1 GB RAM, 20 MB Disk Space (plus workspace)
 - Requires Java 2 run-time v1.4.2-6

SQL Server 2005

Features for Oracle Migration



- **Snapshot Isolation:** Equivalent to Oracle's multi-version concurrency control
- **User Defined Types:** Allows you to model many of the native Oracle types in SQL Server
- **Native XML support (XMLType)**
- **Multiple Active Result Set (MARS)**
- **JDBC Driver (free download)**

Technical DB Features



- Features not converted:
 - Despite incompatibilities, most features have similar equivalents on MS SQL Server (esp. 2005)
 - Even if there is no direct corresponding feature, the necessary capabilities can usually be implemented
 - Functional or Operational requirements achieved through different means
 - May require some procedural adjustments or development
 - Specify requirements narrowly and precisely
 - May not be identical, but can still fulfill the purpose for which it is really needed

Manual Tasks

Evaluating Incompatible Features



Example: Transportable Tablespaces*

	Per Table Replication Facilities		Per Database Replication Facilities				
	MS-Replication	Integration Services (Tables)	Log-Shipping	Integration Services (DB)	Backup & Restore	FlashSnap & Attach	SQL Server Snapshot
Implementation Effort	Very Bad	Bad	Very Good	Good	Good	OK	OK
Testing & Debugging	Bad	OK	Good	OK	Very Good	Good	OK
Management Overhead	Very Bad	Bad	Good	Good	Good	Good	Good
Change Effort	Bad	Bad	OK	Good	Good	Good	Good
Metadata Changes	OK	Bad	Good	Good	Good	Good	Good
Foreign Keys	OK	OK	Bad	Bad	Bad	Bad	Bad
Error Checking	OK	Bad	Good	OK	Bad	OK	Bad
Error Reporting	OK	OK	Good	OK	Bad	Bad	Bad
Error Recoverability	Bad	?	OK	?	Good	OK	OK
Reliability	OK	?	Good	?	Good	OK	OK
Performance	Bad	OK	Bad	OK	Good	Very Good	OK
Production Downtime	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good
Reporting Downtime	Bad	Bad	OK	?	OK	Good	?
Addl. Space Needed	OK	OK	OK	?	Very Bad	Very Good	Very Bad
Overall	Bad*	Bad to OK	Good	OK to Good	OK to Good	Good*	OK

*Note: Very situation-specific. Your mileage may vary

Wrap Up



- Evaluations
- Q&A Panel
- Lunch

Thank You!