SUPPORT

PLANNING AND EXECUTING A SUCCESSFUL SQL SERVER DATABASE MIGRATION

Presented By: Carlos Colón | November 12, 2016



Presentation Topics

- ► Typical SQL Server Migration Plan
- ► Key Deliverables
- Database Migration Steps
- Brief Overview of SQL Server Migration Assistant Tool (SSMA)
- Common Problems in Database Migrations



What is NOT Covered

- Detailed SSMA Tutorial
- ► DBMS Specific Migration Information
- ► How to Build Target SQL Server System

Goals



By the end of the presentation you will:

- Understand at a high level how to migrate a database to SQL Server
- Know how to avoid surprises by better planning
- ► Leverage SSMA as both a planning and a migration tool

Presenter Info





- 20 years of experience in database development, administration, and project management
- B.S. in Management of Information Systems – USF
- Dobler Consulting lead of DBA Managed Services practice



SQL Server Migration Challenges

► All database migration projects are unique

- Differences in DBMS, configurations, SQL code, front-end applications, third-party tools, etc.
- ► Not all database system components can be migrated
 - ► In most cases, logins cannot be migrated
 - ► Third-party applications may not be compatible with SQL Server
 - Embedded and dynamic SQL code has to be migrated manually
 - Applications may require new drivers/connectors
- Scope of database migration project can be quite large
 - Migration effort can include thousands of database objects and lines of code
 - ► Not enough time to perform full regression/performance testing



Steps for Overcoming Challenges

- Thoroughly analyze existing database system
 - Identify all components that must exist in target SQL Server environment
- Develop an approach for each component that will require manual migration
 - Consider grouping components by categories that will implement the same approach (i.e. replace current transactional replication and failover solutions with AlwaysOn).
 - Evaluate risks and contingency options
- Include adequate time for migration testing
 - Plan to execute your database migration as many times as possible in your test environment
 - Develop test approach to minimize risks
 - ► Practice makes perfect!



Typical SQL Server Migration Plan

- I. Analysis
- II. Planning
- III. Build
- IV. Migrate, Test, Fix, Repeat
- V. Deployment
- VI. Support



Analysis Deliverables

- System Architecture Diagrams
 - ► Map all components of AS-IS and TO-BE systems
- System Configurations
 - ► Operating System, DBMS, Applications and Third Party tool versions
 - For database, look for Collation, ANSI defaults, Quoted Identifier settings
- ► Hardware Specifications
 - Identify server and storage requirements for target system
 - Unless you are migrating to an existing SQL Server, you will need to order new hardware early in the project



Planning Deliverables

- Environment Plan
 - Outline of environments to be used in migration project
 - ► States what components from AS-IS and TO-BE systems will be included
 - Document who will use the environment and when

- Project Schedule
 - ► Leverage SSMA Migration Reports for estimating effort



Planning Deliverables

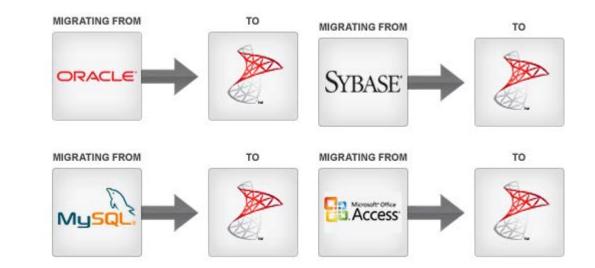
- Change/Source Code Version Management Plan
 - Change happens, and you better be ready for it
 - Develop a strategy to incorporate changes to source system without disrupting migration schedule
 - Create new source code repository for migrated database objects
- Production Contingency/Back out Plan
 - Get management buy-in early in the project
 - ► Agree on checkpoints and who makes GO/NO-GO decisions
 - ► Agree on criteria to implement contingency plan



Intro to SSMA Tool

=

- SQL Server Migration Assistant Overview
 - Provides detailed migration assessment report with effort estimates
 - Automates schema and data migration
 - ► Available for five DBMS: Oracle, Sybase, MySQL, Access, and DB2
 - Capable of migrating source DBMS to SQL Server 2005 or higher and to SQL Azure







3 SQL Server Migratio	n Ass	istant for MySql		<u> </u>	×
<u>File Edit ⊻iew</u>					
😂 📓 📃 Conne	52	⊊reate Report	🔯 Create Report 🖓 Convert Schema 🖷 Migrate Data 🏐		
tySql Metadata Explore	6	Convert Schema Ctrl+R			
	8%	Migrate Data			
		Stop			
		<u>G</u> lobal Settings <u>P</u> roject Settings			
		Default Project Settings			
QL Server Metadata Ex	plorer	f.			



Default Project Settings					×
	Migration Target Version :	SQL Server 2014 SQL Server 2014 SQL Server 2012 SQL Server 2005 SQL Server 2008 SQL Azure			
Plea	ise select a migration project typ	e in the 'Migration Targe	t Version' drop do	wn box.	
		[ОК	Apply	Cancel



fault Project Setting				
	Migra	tion Target Version : SQL Server 2014 🗸 🗸		
Iode: Default	- 🔡 ĝi 🖾			
Conversion	V Misc			
Migration	@@ERR	OR global variable	Convert and mark with warning	
Collecting Data	Dynamic	SQL	Convert and mark with warning	
	Equality c	heck conversion	Simple conversion	
	Insert an e	explicit value into a timestamp column	Exclude column	
	Proxy tabl	e conversion	Mark with error	
	RAISERF	OR base message number	30001	
	Store tem	porary objects defined in procedures	Yes	
	System ob	ojects	Convert and mark with warning	
	Unresolve	d identifiers	Convert and mark with warning	
	 String ex 	pressions		
	Concaten	ation of NULL	Keep current syntax	
	Conversio	n of Empty Strings	Keep current syntax	
	Conversio	n of LIKE operator	Simple conversion	
	CONVER	T and CAST binary string conversion	Convert and mark with warning	
	CONVER	T or CAST empty strings to numeric types	Simple conversion	
	Format str	ings	Create new string	
Conservation	System 1	functions		
<u>G</u> eneral	CHARINE	DEX function	Keep current syntax	
Synchronization		NGTH function	Keep current syntax	
<u>synchronization</u>			10 I al	
GUI	Misc			
<u>T</u> ype Mapping				



	Migration Target Version : SQL Server 2014 🗸	
lode: Default	- 🔡 ĝi 🖾	
Conversion	✓ Misc	
Migration	@@ERROR global variable	Convert and mark with warning
···· Collecting Data	Dynamic SQL	Convert and mark with warning
	Equality check conversion	Simple conversion
	Insert an explicit value into a timestamp column	Exclude column
	Proxy table conversion	Mark with error
	RAISERROR base message number	30001
	Store temporary objects defined in procedures	Yes
	System objects	Convert and mark with warning
	Unresolved identifiers	Convert and mark with warning
	 String expressions 	
	Concatenation of NULL	Keep current syntax
	Conversion of Empty Strings	Keep current syntax
	Conversion of LIKE operator	Simple conversion
	CONVERT and CAST binary string conversion	Cast to fixed length
	CONVERT or CAST empty strings to numeric types	Simple conversion
	Format strings	Create new string
General	✓ System functions	
General	CHARINDEX function	Keep current syntax
Synchronization	DATALENGTH function	Keep current syntax
2,		M i al
GUI	Conversion of LIKE operator Specifies whether to convert LIKE operands to match Sybase ASI	E behavior. If the option is "Cast to fixed length" and LIKE pattern is "%" with leading spaces, th
<u>T</u> ype Mapping	left hand operand will be cast to the char or nchar data type.	



efault Project Setting	gs	
	Migration Target Version : SQL Server 2014	
Mode: Default	 	
Conversion	V Dates Correction	
···· Migration	Replace unsupported dates	Do nothing
Collecting Data	 Migration Engine 	
	Migration Engine	Client Side Data Migration Engine
	✓ Misc	
	Batch size	10000
	Check constraints	False
	Data migration timeout	15
	Extended data migration options	Hide
	Fire triggers	False
	Keep identity	True
	Keep nulls	True
	On Error	Proceed to next batch
	Round fractional part of numbers	No
	Sybase Unicode Endian	Little-endian
	Table lock	True
	Use cursors	False
Connert	✓ Parallel Data Migration	
<u>G</u> eneral	Parallel data migration mode	Auto
<u>Synchronization</u>		
G <u>U</u> I	Migration Engine Migration Engine used during data migration	
<u>T</u> ype Mapping		
		OK Apply Cancel



Default Project Settings		×
	Migration Target Version : SQL Server 2014 🛛 🗸	
Reset to Default		
	✓ Misc	
	Attempts	2
	 Synchronization for SQL Server 	
	Refresh local object on local and remote object change	Write to Database
	Refresh local object on local object change	Write to Database Refresh from Database
	Refresh local object on remote object change Refresh when local object metadata is missing	Refresh from Database
	Herear when beer object metadata is missing	Hones Home Database
Synchronization		
,		
General		
Synchronization		
G <u>U</u> I	Misc	
<u>T</u> ype Mapping		
		OK Apply Cancel



Default Project Setting	S		×
	Migration Target Version : SQL Server 20	14 ~	
	SourceType	Target Type	^ Add
	image	image	Edit
	int integer	int int	Remove
Time	longsysname	nvarchar[255]	
Type Mapping	money national char	money	
	national char national char varying	nchar nvarchar	
	national char varying[*4000]	nvarchar[*]	Deprecated
	national char varying[4001*] national char[*4000]	nvarchar(max) nchar[*]	datatype
	national char[4001*]	nvarchar(max)	
<u>G</u> eneral	national character national character varying	nchar	Reset to Default
<u>Synchronization</u>	national character varying[*4000]	nvarchar[*]	
GUI	national character varying[4001*]	nvarchar(max)	
<u>T</u> ype Mapping	national character[*4000]	nchar[*]	
			OK Apply Cancel



Verify Drivers

😸 SSMA	for Oracle Setup		_		×
4	Required Component(s) Oracle client software not fi				
or dow Click o	s unable to find Oracle client sof nload it from Oracle web site. n the Download button to naviga n the Next button to install later.	ate to Oracle websi			
				Downle	oad
		Back	Next	Cano	el



Verify Drivers

🚯 MySQL-to-SQL Demo #1[SQL Server 2014] - SQL Server Migration Assistant for My	Sql	- 0 ×
<u>F</u> ile <u>E</u> dit <u>V</u> iew <u>T</u> ools <u>H</u> elp		
📄 📂 🛃 👤 Connect to MySql 빛 Connect to SQL Server 闘 Create Report 🎧 C	lonvert Schema 🖉 🍟 Migrate Data 🛛 🔳	
MySql Metadata Explorer		
🔩 Go Up 🔇 Go Back 👻 🔵 Go Forward 👻 🔢		
	Connect to MySql X	
	Specify parameters for new connections to the source.	
	Provider: MySQL ODBC 5.1 Driver (v5.1.13) ; 32 Bit; trusted V	
Please consider using driver version 5.1.6 or higher.		
The selected provider is incompatible with the installed version of SSMA for My	SQL. This warning may be a result of running SSMA as 64-bit application while having only 32-bit connectivity components installed or	vice versa. You can run 32-bit SSMA
	tion if you have 64-bit connectivity components, shortcut to both 32-bit and 64-bit SSMA can be found under the Programs menu.	
SQL Server Metadata Explorer	Server port: 3306 V SSL Configure	
🔩 Go Up 🔇 Go Back 👻 🔵 Go Forward 👻 🔢	User name: SqlMigration ~	
	Password:	
	Connect Cancel	
Done.		



Verify Drivers

Pie Edit Vew Tock Help Pie Edit Vew Tock Help	n Access-to-SQL Demo #1[SQL Server 2014] * - SQL Server Migration Assistant for Acc	cess – 🗇 🗙
Access Metadata Explore Code Contraction SQL Server Metadata Explore S	<u>F</u> ile <u>E</u> dit <u>V</u> iew <u>T</u> ools <u>H</u> elp	
*. Go Lb © Go Forward - • • • • © Control States • • • • • • • • • • • • • • • • • • •	🛓 🧻 📂 🛃 🔁 Add Databases 🔌 Find Databases 👤 Connect to SQL Server 🎧	Convert, Load, and Migrate 🛛 🔝 Create Report 🛛 🎧 Convert Schema 🖉 🖥 Migrate Data 🖉 🔳
Access Object Collector error: Database X Access Object Collector error: Database X RESULT: Va0040154 (REODE 5_CLASSNOTRED). This error may be a result of running SNA as 64-bit application while having only 32-bit connectivity components installed or vice versa. You can run 32-bit SNA application if you have 32-bit connectivity components or 64-bit SNA application if you have 64-bit SNA application if you have 32-bit connectivity components or 64-bit SNA application if you have 64-bit connectivity components, shortcut to both 32-bit and 64-bit SNA can be found under the Programs menu. You can also consider updating your connectivity components from http://yo.microeft.com/klink/linkHeilpFSOL.	Image: Construction of the second	
Access Object Collector error: Database Retrieving the COM class factory for component with CLSID (CD7791B9-43FD-42C5-AE42-8DD2811F0419) failed due to the following error: 80040154 Class not registered (Exception from HRESULT: 0x80040154 (REGDB_E_CLASSNOTREG)). This error may be a result of running SSMA as 64-bit application while having only 32-bit connectivity components installed or vice versa. You can run 32-bit SSMA application if you have 32-bit connectivity components or 64-bit SSMA application if you have 64-bit connectivity components, shortcut to both 32-bit and 64-bit SSMA can be found under the Programs menu. You can also consider updating your connectivity components from http://go.microsoft.com/fwlink/?LinkId=197502.	🐜 Go Up 🔇 Go Back 🔻 💭 Go Forward 👻 📰	
Retrieving the COM class factory for component with CLSID {CD7791B9-43FD-42C5-AE42-8DD2811F0419} failed due to the following error: 80040154 Class not registered (Exception from HRESULT: 0x80040154 (REGDB_E_CLASSNOTREG)). This error may be a result of running SSMA as 64-bit application while having only 32-bit connectivity components installed or vice versa. You can run 32-bit SSMA application if you have 32-bit connectivity components or 64-bit SSMA application if you have 64-bit connectivity components, shortcut to both 32-bit and 64-bit SSMA can be found under the Programs menu. You can also consider updating your connectivity components from http://go.microsoft.com/fwlink/?LinkId=197502.	Output	×
Cutput	Retrieving the COM class factory for component with CLSID { HRESULT: 0x80040154 (REGDE <u>CLASSNOTREG</u>)). This error may be a can run 32-bit SSMA application if you have 32-bit connectivity be found under the Programs menu. You can also consider updating An error occurred while loading database content.	result of running SSMA as 64-bit application while having only 32-bit connectivity components installed or vice versa. You components or 64-bit SSMA application if you have 64-bit connectivity components, shortcut to both 32-bit and 64-bit SSMA can



SSMA as a **Planning Tool**

- SSMA features a Database Migration Assessment Report
 - The report lists all database objects that will require manual effort for conversion
 - Indicates the reason objects cannot be migrated automatically
 - Provides rough estimates on manual effort
- Perform a test conversion to uncover additional issues
 - SSMA may not catch all possible migration issues
 - Errors may appear when loading migrated objects to SQL Server (i.e. improper use of quoted identifiers, computed columns, etc.)
 - ► Do a test conversion to get a full picture of migration assessment



SSMA Migration Assessment Report

😚 MySQL-to-SQL Demo #1[SQL Server 2014] * - SQL Server Migration Assistant for MySql [Running in 32-bit mode]	– 0 ×
File Edit View Tools Help	
📄 😂 🔚 🖳 Reconnect to MySql 👤 Connect to SQL Server 📓 Create Report 👘 Convert Schema 🖓 Migrate Data 👘	
MySql Metadata Explorer	
🔩 Go Up 🔇 Go Back 👻 🐑 Go Forward 👻 📓	
Cocalhost:3306/root Databases (1/6) Difference_schema Difference_schema Difference_schema Difference_schema	
Udfs Convert Schema Ctrl+R	
Refresh from Database	
SQL Server Metadata Explore	
tu Go Up S Go Back → S S S S S S S S S S S S S S S S S S	
Advanced Object Selection	
Output	x
Connection to MySQL established successfully.	~
Connection string: Driver={MySQL ODBC 5.1 Driver};Server=localhost;Port=3306;User=root;Option=3	
	~
C Output	
Done.	



đ

Microsoft

 \times

SSMA Migration Assessment Report

iii SQL Server Migration Assistant for MySql: Assessment Report

Microsoft*SQL Server* Migration Assistant 6.0

					A						
🗆 🔒 sakila 🔨 🔨	Databases > <mark>sa</mark>	kila									
🕀 🚞 Functions											
🕀 🤙 Procedures								Objects by cate	annian		
🗆 词 Tables		Con	version st	atistics					gories		
iii actor iii address		Statement type	Total	Converted	Not converted			Object type	Total	With errors	
category		Statement type	Total	Converted	Ivor converted						
ity		ALL	559	90.33% 😫	54	~		databases	1	1	
country											
🕀 🌆 customer		argument	13	100%	0			functions	3	0	
🗆 🔣 film								procedures	3	3	
🖯 🧰 Triggers		auto-increment-column	13	100%	0			procedures		3	
● 🥑 del_film		auto-increment-option	13	100%	0			tables	16	8	
ins_film ₹upd_film		uoto intrement option									
film_actor		block-statement	1	100%	0			triggers	6	0	
ilm_category								views	7	3	
ilm_text		column-declaration	91	98.9% 😫	1			views	· · · ·	3	
inventory		constraint-foreign-key-	22	63.63% 😫	8						
III language		clause	22	05.0570	•						
🗉 🌉 payment		constraint-primary-key-	17	94.11% 😢	1						
🗉 🧱 rental		clause									
store		constraint-unique-clause	2	100%	0						
E Views		create-relation-table-	17	94.11% 😫		~					
		statement	17	94.11%							
	Mariant	- hu Mennin - h (Tatal			ing times Od hada)					
😢 Errors (23) 🚹 Warnings (8) 🕕 Info	(58) Navigate	e by Warnings 🗸	lotal	estimated ma	anual conver	sion time: 24 hr(s)					
🗉 💈 M2SS0016: SQL Server Migratio	on Assistant for Mrs	S al Error massage: Unr	a a bradid	lantifiar(4) Ea	timeted men	al conversion time: 2 h	(1)				
	-		esolved id	lenuner(4) Es	umated mant	ai conversion une. 2 m	(5)				\sim
😺 rewards_report(4), Estimated m	ianual conversion tin	ne: 2 nr(s)									
🗉 😫 M2SS0035: SQL Server Migration	on Assistant for My	Sql Error message: SSN	IA for M	ySQL does r	iot support F	ULLTEXT indexes(1)	Estimated n	nanual conversion time: 1 hr(s)			\sim
C: \Users\Carlos\Documents\SSMAProjects\MySQL-to-	EQI Domo #1kopertires	art 2016 02 27704 22 021	maininday, h	tool							_
C: Juser's Juanos (Documents (SSMAPTOJECTS (MI)SQL-to-	-SQL Demo #14ebort/let	JUIT_2010_02_27104_23_03V	nammuex.n	Ium						Close	е



SSMA Migration Assessment Report

Microsoft SQL Server' Migration Assistant 6.0 Microsoft SQL Server' Migration Assistant 6.0 Microsoft SQL Server' Migration Assistant 6.0 Microsoft SQL Server Migration Assistant for MySql Error message Unresolved identifier() Estimated manual conversion time: 24 tr(s) Microsoft SQL Server Migration Assistant for MySql Error message: SMA for MySQL does not support FULITEXT indexes(1) Estimated manual conversion time: 24 tr(s) Microsoft SQL Server Migration Assistant for MySql Error message: SMA for MySQL does not support FULITEXT indexes(1) Estimated manual conversion time: 24 tr(s) Microsoft SQL Server Migration Assistant for MySql Error message: SMA for MySQL does not support FULITEXT indexes(1) Estimated manual conversion time: 24 tr(s) Microsoft SQL Server Migration Assistant for MySql Error message: SMA for MySQL does not support FULITEXT indexes(1) Estimated manual conversion time: 24 tr(s) Microsoft SQL Server Migration Assistant for MySql Error message: SMA for MySQL does not support FULITEXT indexes(1) Estimated manual conversion time: 24 tr(s) Microsoft SQL Server Migration Assistant for MySql Error message: SMA for MySQL does not support FULITEXT indexes(1) Estimated manual conversion time: 24 tr(s) Microsoft SQL Server Migration Assistant for MySql Error message: SMA for MySQL does not support FULITEXT indexes(1) Estimated manual conversion time: 24 tr(s) Microsoft SQL Server Migration Assistant for MySql Error message: SMA for MySQL does not support FULITEXT indexes(1) Estimated manual conversion time: 24 tr(s) Microsoft SQL Server Migration Assistant for MySql Error message: SMA for MySQL does not support FULITEXT indexes(1) Estimated manual conversion time: 24 tr(s) Microsoft SQL Server Migration Assistant for MySql Error message: SMA for MySQL does not support FULITEXT indexes(1) Estimated manual conversion time: 24 tr(s) Microsoft SQL Server Migration Assistant for MySql Error message: SMA for MySQL does not support FULITEXT indexes(1) Estimated manual conversion time: 24 tr(s) M	😚 SQL Server Migration Assistant for MySq	l: Assess	sment Rep	ort						– 0 ×
Althouses > sakig > Tables > film Billion Conjunction Billion Conjunction Billion Conjunction Billion Control		* Mig	gratio	n Ass	sistant 6.0					Microsoft
Statistics: Source in Statistics:	🔜 film_in_stock	~	Databa	ses > <u>sal</u>	<u>kila > Tables > film</u>					
Source Source Source Source Source Source Source Table Table Table Table Table Table Time_file Source		Ð	± Statist	ics:						
CONSTRAINT FM_film_film_id FRIMARY MEY (film_id), CONSTRAINT film_film_id FRIMARY MEY (film_id), CONSTRAINT film_film_id FRIMARY MEY (film_id), CONSTRAINT film_film_id FRIMARY MEY (film_id), CONSTRAINT film_film_film_id FRIMARY MEY (film_id), CONSTRAINT film_film_film_id FRIMARY MEY (film_id), CONSTRAINT film_film_film_film_film_film_film_film_		S	ource		** **	Raw Source	Target	ta ta % %)	8	
<pre>interspace inters</pre>							_			
ich ich ich ich ich ich ich ich ich ich ich ich ich ich ich ich ich ich ich ich ich ich ich i	~					^			ilm_film_id PRIMARY KEY (film_id),	~
Construction Consedimenter Construction Consediment Construction C				TABLE	`film`					
<pre>Sector(initial) Sector(initial) Sector(in</pre>				(
<pre>6 'description' text, 7 'delease_year' year(i) DEFAULT NUL, 8 'language_id' tinyint(3) UNSIGNED NOT NULL, 9 'reital_language_id' tinyint(3) UNSIGNED NOT NULL, 10 'rental_trate' decimal(4, 2) NOT NULL DEFAULT 'NUL, 11 'rental_rate' decimal(4, 2) NOT NULL DEFAULT 'NUL, 12 'reiglacement_cost' decimal(5, 2) NOT NULL DEFAULT 'NUL, 13 'replacement_cost' decimal(5, 2) NOT NULL DEFAULT 'NUL, 14 'replacement_cost' decimal(5, 2) NOT NULL DEFAULT 'NUL, 15 'G', 16 'FO', 17 'FO-13', 18 'replacement_cost' decimal(5, 2) NOT NULL DEFAULT 'NUL, 19 'Vews 10 'rental 10 'rental_rate' decimal(6, 2) NOT NULL DEFAULT 'NUL, 11 'rental_rate' decimal(5, 2) NOT NULL DEFAULT 'NUL, 12 'replacement_cost' decimal(5, 2) NOT NULL DEFAULT 'NUL, 13 'replacement_cost' decimal(5, 2) NOT NULL DEFAULT 'NUL, 14 'replacement_cost' decimal(5, 2) NOT NULL DEFAULT 'NUL, 15 'G', 16 'FO', 17 'FO-13', 18 'Default 'Reinings(6) () Info(56) Navigate by Warnings V Total estimated manual conversion time: 24 hr(s) 19 'Navigate by Warnings V Total estimated manual conversion time: 2 hr(s) 10 'NESSON016: SQL Server Migration Assistant for MySqL Error message: SSMA for MySQL does not support FULLTEXT indexes(1) Estimated manual conversion time: 2 hr(s) 10 'NESSON035: SQL Server Migration Assistant for MySqL 20 are stage SSMA for MySQL does not support FULLTEXT indexes(1) Estimated manual conversion time: 2 hr(s) 10 'NESSON035: SQL Server Migration Assistant for MySqL 20 are stage SSMA for MySQL does not support FULLTEXT indexes(1) Estimated manual conversion time: 2 hr(s) 10 'NESSON35: SQL Server Migration Assistant for MySqL 20 are stage SSMA for MySQL does not support FULLTEXT indexes(1) Estimated manual conversion time: 2 hr(s) 11 'NESSON35: SQL Server Migration Assistant for MySqL 20 are stage SSMA for MySQL does not support FULLTEXT indexes(1) Estimated manual conversi</pre>			-		-	NOT NULL AUTO_INCREMENT,		* M2SS0037: UN (UPDATE CASCADE SET NULLISET DEFAULT	action was cha
<pre></pre>			-					000100003.7500 513-0		
Ins_film Ins Ins_film Ins_film Ins_film Ins_film Ins Ins_film Ins Ins_film Ins Ins_film Ins			6							age_1d) REFERE
Interspace in the provide and interview in the provide and interview in the provide and interview in the provided in the			7					UN UPDATE NU	ACTION */	
Image: Construction of the second of the			-		-					
Tencal_duration = Unified () 000 berault '14.99', 'rental_rate' decimal(4; 2) NOT NULL DEFAULT '14.99', 'length' smallint(5) UNSIGNED DEFAULT NULL, 'replacement_cost' decimal(5; 2) NOT NULL DEFAULT '19.99', 'replacement_cost' decimal(5; 2) NOT NULL DEFAULT '19.99', 'replacement_cost' decimal(5; 2) NOT NULL DEFAULT '19.99', 'restal 'replacement_cost' decimal(5; 2) NOT NULL DEFAULT 'replacement', 'restal 'replacement'replacement', 'restal 'replacement'			-							TV (anininal)
film_text inventory insquage inventory inaguage ignuage										EI (original_1
Inventory Il anguage	ilm_text				-				SCADE,	
Interformed and the second and th	inventory .							· ·		
 B a pointent B a rental B a views B a views Click error to show Code Code Code) NOT NULL DEFAULT '19.99',	7			
 is staff is staff<					-		44	* M25S0149: The	ssma;rowid column has been added	
 Store Views Info (58) Navigate by Warnings Views Total estimated manual conversion time: 24 hr(s) M2SS0016: SQL Server Migration Assistant for MySql Error message: Unresolved identifier(4) Estimated manual conversion time: 2 hr(s) M2SS0016: SQL Server Migration Assistant for MySql Error message: Unresolved identifier(4) Estimated manual conversion time: 2 hr(s) M2SS0035: SQL Server Migration Assistant for MySql Error message: SSMA for MySQL does not support FULLTEXT indexes(1) Estimated manual conversion time: 2 hr(s) 	-						45	*/		
 Wiews Warnings (8) Info (58) Navigate by Warnings Total estimated manual conversion time: 24 hr(s) M2SS0016: SQL Server Migration Assistant for MySql Error message: Unresolved identifier(4) Estimated manual conversion time: 2 hr(s) M2SS0035: SQL Server Migration Assistant for MySql Error message: SSMA for MySQL does not support FULLTEXT indexes(1) Estimated manual conversion time: 2 hr(s) M2SS0035: SQL Server Migration Assistant for MySql Error message: SSMA for MySQL does not support FULLTEXT indexes(1) Estimated manual conversion time: 2 hr(s) 										
 Warnings (8) i Info (58) Navigate by Warnings Total estimated manual conversion time: 24 hr(s) M2SS0016: SQL Server Migration Assistant for MySql Error message: Unresolved identifier(4) Estimated manual conversion time: 2 hr(s) M2SS0035: SQL Server Migration Assistant for MySql Error message: SSMA for MySQL does not support FULLTEXT indexes(1) Estimated manual conversion time: 2 hr(s) M2SS0035: SQL Server Migration Assistant for MySql Error message: SSMA for MySQL does not support FULLTEXT indexes(1) Estimated manual conversion time: 2 hr(s) 						~		ssh rowid uniqu	ueidentifier DEFAULT newid() NOT NUI	T ONIÕDE
 M2SS0016: SQL Server Migration Assistant for MySql Error message: Unresolved identifier(4) Estimated manual conversion time: 2 hr(s) M2SS0035: SQL Server Migration Assistant for MySql Error message: SSMA for MySQL does not support FULLTEXT indexes(1) Estimated manual conversion time: 2 hr(s) M2SS0035: SQL Server Migration Assistant for MySql Error message: SSMA for MySQL does not support FULLTEXT indexes(1) Estimated manual conversion time: 2 hr(s) 		~	<		181	>	<			>
 M2SS0016: SQL Server Migration Assistant for MySql Error message: Unresolved identifier(4) Estimated manual conversion time: 2 hr(s) M2SS0035: SQL Server Migration Assistant for MySql Error message: SSMA for MySQL does not support FULLTEXT indexes(1) Estimated manual conversion time: 2 hr(s) 						▼				
rewards_report(4), Estimated manual conversion time: 2 hr(s) M2SS0035: SQL Server Migration Assistant for MySql Error message: SSMA for MySQL does not support FULLTEXT indexes(1) Estimated manual conversion time: 2 hr(s)	😢 Errors (23) 🚹 Warnings (8) 🕕	Info(5	58)	Navigate	e by Warnings 🗸 🛛 Total es	imated manual conversion time: 24	4 hr(s)			
M2SS0035: SQL Server Migration Assistant for MySql Error message: SSMA for MySQL does not support FULLTEXT indexes(1) Estimated manual col.	🗉 😫 M2SS0016: SQL Server Mi	igration	Assistan	it for My	Sql Error message: Unresolved iden	tifier(4) Estimated manual conversion	n time: 2	hr(s)	Click error to s	now 🔨
M2SS0035: SQL Server Migration Assistant for MySql Error message: SSMA for MySQL does not support FULLTEXT indexes(1) Estimated manual col.	rewards report(4) Estimate	ted man	ual conv	ersion tin	ne: 2 hr(s)					
C:\lisers\Carlos\Documents\SSMAProjects\MuSQL.to.SQL.Demo.#1\renort\renort_2016_02_27T04_23_03\mainindey.html						QL does not support FULLTEXT is	ndexes(1	l) Estimated manual co	code	~
	C:\Users\Carlos\Documents\SSMAProiects\MvS	QL-to-SO)L Demo #1	1\report\rec	oort 2016 02 27T04 23 03\mainindex.html					Close



How to Access Saved Report

→ × ↑ 📙 C:\Us	sers\Carlos\Documents\SSMAProject	stwysee-to-see being # thepointing	pont_2010_02_27104_2	3_03 ~	ට Searc	ch report_2016_0	/
ganize 🔻 🛛 New fold	er						- 💷 🌔
This PC	Name	Date modified	Туре	Size			
Desktop	messages	2/27/2016 4:23 AM	File folder				
	e catIndex	2/27/2016 4:23 AM	HTML File	3 KB			
Documents	e expander	2/27/2016 4:23 AM	HTML File	4 KB			
Downloads	e image	2/27/2016 4:23 AM	HTML File	4 KB			
👌 Music	e mainindex	2/27/2016 4:23 AM	HTML File	16 KB			
Pictures	e messages	2/27/2016 4:23 AM	HTML File	20 KB			
Videos	e navigation	2/27/2016 4:23 AM	HTML File	1 KB			
OS (C:)	e propindex			2 KB			
SERVER2008 (E:)	🖈 report	Open with E		150 KB			
SERVER2000 (EI)	e srcButtons			5 KB			
Network	e srcIndex	2/27/2016 4:23 AM	HTML File	4 KB			
Homegroup	e statButtons	2/27/2016 4:23 AM	HTML File	3 KB			
♥ Homegroup	📄 top	2/27/2016 4:23 AM	XML Document	1 KB			
File n	ame:					Excel Files	、 、



How to Access Saved Report

	∃ 5 • d	-								report - E	xcel								? 🛧	
	LE HOME	INSERT	PAGE LAY	OUT F	ORMULAS	DATA	REVIEW	VIEW											Carlos	Colon 🔻
[L Cut	Arial		• 10 •	A A	= =	» ?	F Wrap T	ext	General	Ŧ	≠				×	∑ AutoS	ium * Az		
S	te .	. в І	<u>u</u> - 1	- 8	- <u>A</u> -	= = =	(≣ 3 ≣	🖶 Merge	& Center 🔻	\$ - %	• €.0 .00 • 0.0 • 00		nal Formata		Insert Del	ete Format	-		& Find &	
Ŧ	؇ Format Pa	unter			_					+ /0		Formattin	ig∗ Table∗	Styles -	* *	· · ·	Clear	/ Filter	r ≖ Select ≖	
	Clipboard	Es l	Fo	nt	E.		Alignm	ient	Es.	Num	ber 5	1	Styles		Ce	lls		Editing		
1	5 *	\times	fx																	
	, 		0																	
Ļ	<u>A</u>	В	С	D	E	F	G	H		J	K	L	M	N	0	P	Q	R	S	Т
	Generated by S			6.0.0																
	Report Date: 2/2		J3 AM																	
	Server Name: Io	calhost																		
+		N								1 1 1							1-616	4-1-4		C
	Object Name sakila	Number o M	anual Ca 24	90.33%	argument 100%				at column- % 98.90%			constraint 100%								0.009
ŀ	Functions	3	24	90.33%	100%		N/A	% 100 N/A	% 96.907 N/A				94.11% N/A	100%		04.21% 100%		N/A		0.00
╞	Procedures	3	5	76.71%	100%		N/A	100			0.00%		0.00%	75.00%	0.00%	100%		N/A	100%	
╞	Tables	16	10.5	95.41%		100%		% N/A	% 0.00% 100%			100%	100%	100%	100%	100%				0.00
		10	10.5	95.41%		100%		% N/A		6 03.03%	100%		100%	100%			100%			0.00
-	category	6	0	100%			N/A	N/A	N/A		100%		100%	100%		100%		100%		N/A N/A
2	Triggers Views	7	8.5	55.81%		N/A N/A	N/A	N/A	N/A				N/A	57.14%		57.14%		N/A		N/A N/A
+	views	1	0.0	00.01%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	57.1470	N/A	57.1470	IN/A	IN/A	N/A	N/A
	Note: The manu	al conversion	time is th	o octimato	d time to p	onually on	malata the	detebacc	conversion	And uning 9	20MA									
ľ	vote. The manu	al conversion	ume is un	e estimate	a time to n	lanually col	mpiete the	e database	conversion	alter using a	SSIVIA.									
+																				
1																				
									_		-	_		_						
+								_												
2																				
3																				
i																				
;										7		7		1						
7														-						
	⊢ A	ssessment S	ummary	Detaile	d Assessm	ent Ob	jects by C	ategories	Error M	essages	Warning M	lessages	Informati	ional Mess	ages	(+)	: •			



How to Access Saved Report

🕅 🕂 🏷 🕆 🗳 👻 🗧 👘 report - Excel			? 🗹 – 🗆 🗙
FILE HOME INSERT PAGE LAYOUT FORMULAS DATA REVIEW VIEW			Carlos Colon 👻 🔍
$ \begin{array}{c c} & & & \\ & & & & \\ & & & \\ & & & & \\ $		► AutoSu Fill ▼	Z Y III
Paste \checkmark Format Painter B $I \sqcup \checkmark$ $\square \checkmark$ $\triangle \checkmark$ $\blacksquare \equiv \equiv \equiv \Subset \blacksquare$ Merge & Center \checkmark $\$ \checkmark \%$, $\circlearrowright $ Condition Formatting	al Formatas Cell Insert g • Table • Styles • •	Delete Format	Sort & Find & Filter * Select *
Clipboard 🖬 Font 🗔 Alignment 🗔 Number 🗔	Styles	Cells	Editing
A1 \checkmark f_x Error Messages and Objects			~
Α	В	С	D E F 🔺
1 Error Messages and Objects	Amount Manual Conv	ersion Time (in hours)	
2 M2SS0016: SQL Server Migration Assistant for MySql Error message: Unresolved identifier	4	2	
3 rewards_report	4	2	
4 M2SS0035: SQL Server Migration Assistant for MySql Error message: SSMA for MySQL does not support FULLTEXT indexes		Dovala	n on n roo o h
5 film_text	1	Develo	p approach
M2SS0036: SQL Server Migration Assistant for MySql Error message: ON UPDATE action was changed to NO ACTION to avoid			
6 circular references of cascaded foreign keys.	2	for e	each error
7 staff 8 store			
8 store M2SS0037: SQL Server Migration Assistant for MySgl Error message: ON UPDATE action was changed to NO ACTION to avoid		1	
9 multiple paths in cascaded foreign keys.	6	6	
10 customer	1	1	
10 costoner	2	2	
12 film	1	1	
13 payment	2	2	
4 M2SS0061: SQL Server Migration Assistant for MySgl Error message: SSMA for MySQL does not support SPATIAL indexes	1	- 1	
15 address	1	1	
M2SS0188: SQL Server Migration Assistant for MySql Error message: SSMA for MySQL does not support creation of temporary			
16 tables in stored procedures, functions, and triggers	1	1	
17 rewards_report	1	1	
18 M2SS0195: SQL Server Migration Assistant for MySql Error message: DDL Statements are not valid in this context	1	0	
19 rewards_report	1	0	
20 M2SS0201: SQL Server Migration Assistant for MySql Error message: MySQL standard function is not supported	6	3	
21 nicer_but_slower_film_list	1	0.5	
22 film_not_in_stock	1	0.5	
23 film_list	1	0.5	
24 actor_info	1	0.5	
Assessment Summary Detailed Assessment Objects by Categories Error Messages Warning Messages	Informational Messages		
Assessment Summary Detailed Assessment Objects by Categories Error messages Walling Messages	mormational wessages		
READY			• • • • 100%



Develop Migration Scripts

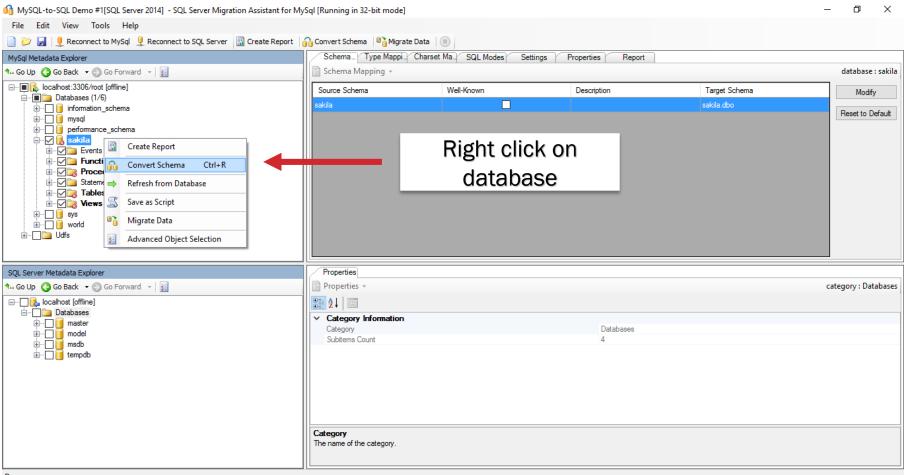
Develop scripts to execute schema migration

- Complete manual object migration in SQL Server
- ► Generate full set of scripts after SQL code is complete

► Recommended scripts:

- ► Create database scripts
- Create tables, views, functions, stored procedures
- ► Create triggers
- Create clustered indexes, primary key constraints
- Create non-clustered indexes
- Create foreign key constraints
- Create logins, roles, permissions
- Post migration scripts (i.e. computed columns)





Done.

32

SSMA Schema Migration

👘 MySQL-to-SQL Demo #1[SQL Server 2014] * - SQL Server Migration Assistant for MySql [Running in 32-bit mode]

<u>File Edit View Tools Help</u>

1vSol Metadata Explorer	Table SQL Type Mappi Data Settings Charset Ma. SQL Modes Properties Report
• Go Up (Go Back 👻 🌑 Go Forward 👻 🔡	
Image: Construction of the second	<pre>12 'rating' enum('G','PG','PG-13','R','NC-17') DEFAULT 'G', 13 'special features' set('Trailers','Commentaries','Deleted Scenes','Behind the Scenes') DEFAULT NULL 14 'last_update' timestamp NOT NULL DEFAULT CURRENT_TIMESTAMP ON UPDATE CURRENT_TIMESTAMP, 15 PRIMARY KEY ('film_id'), 16 KEY 'idx_title' ('title'), 17 KEY 'idx_fk_language_id' ('language_id'), 18 KEY 'idx_fk_language_id' ('original_language_id'), 19 CONSTRAINT 'fk_film_language' FOREIGN KEY ('language_id') REFERENCES 'language' ('language_id') ON 20 CONSTRAINT 'fk_film_language_original' FOREIGN KEY ('original_language_id') REFERENCES 'language' ('language') 21) ENGINE=InnoDB AUTO_INCREMENT=1001 DEFAULT CHARSET=utf8 22 </pre>
SQL Server Metadata Explorer	Table SQL Data
🛿 Go Up 🔇 Go Back 🔻 🏐 Go Forward 👻 🔢	🚺 SQL + 📐 📲 🗔 💭 🖳 💭 table : f
□ ■ Databases (1/5) ⊕ ■ master ⊕ model ⊕	<pre>116 /* 117 * SSMA error messages: 118 * M2SS0037: ON UPDATE CASCADE SET NULL SET DEFAULT action was changed to NO ACTION to avoid multipl 119 */ 120 121 122 ALTER TABLE [dbo].[film] 123 ADD CONSTRAINT [film\$fk_film_language] 124 </pre>
utput	
	Check error list
💫 Output 🚺 Error List	

ligration





MySQL-to-SQL Demo #1[SQL Server 2014] * - SQL Server Migration Assistant for MySql [Running in 32-bit mode]

📄 📂 房 🕴 Reconnect to MySql 🖳 Reconnect to SQL Server 🔚 Create Report 🛛 🎧 Convert Schema 🖉 Migrate Data 🖉

<u>File Edit View Tools H</u>elp

MvSol Metadata Explorer					able	SQL Type Mappi	Data Setting	s Charset Ma. S	QL Modes Properti	es Report	
🔩 Go Up 🔇 Go Back 👻 💮 G	o For	rward 👻 👔									table : film
0 0	egory ntry tome ndexe Trigg _acto _cate _text	r es (4/4) ers (3/3) or egory	~		12 'r 13 's 14 '1 15 PF 16 KE 17 KE 18 KE 19 CC	rating' enum('G', special_features' last_update' time RIMARY KEY ('film EY 'idx_title' (' EY 'idx_fk_langua EY 'idx_fk_origin ONSTRAINT 'fk_fil	<pre>set('Trailers', stamp NOT NULL D _id'), title'), ge_id' (`language_ al language_id' m language_ FORE m language_origi</pre>	'Commentaries', DEFAULT CURRENT ('original_lang IGN KEY ('lang nal' FOREIGN KH	'Deleted Scen TIMESTAMP ON guage_id`), mage_id`) REFE CY (`original_	UPDATE CURRENT RENCES `langua	e Scenes') DEFAULT NULL _TIMESTAMP, ge` (`language_id`) ON REFERENCES `language` (>
SQL Server Metadata Explorer				Та	able	SQL Data					
🐀 Go Up (Go Back 👻 🌍 G	Go Up 🔇 Go Back 🔹 💿 Go Forward 🕞 🔛				. + 🏊 🕈	1 🗆 🖗 🖷 🖳					table : film
localhost [offline] Detabases (1/5) de-[] master model medb de-[] mastb sakla de-[] sakla de-[] tempdb		<u>Create Report</u> Co <u>n</u> vert Schema Synchronize with Database		1 1 1 1 1 1 1 1	118 * 119 */ 120 121 122 ALTE	SSMA error messa M2SS0037: ON UPE ER TABLE [dbo].[f D CONSTRAINT [fil	ATE CASCADE SET		JT action was	changed to NO	ACTION to avoid multipl
Output	2	S <u>a</u> ve as Script									×
i 🖉 📑	2	Advanced Object Selection									
Qutput 💫 Error List						Ар	oly chang SQL Ser	ges to ver			~
Done.											
	-										





😚 Synchronize with the Database						×
🖃 🗄 😑 Hide Equal Objects 📑						
Database	A	ction Local Metadata	a			
[Not Found]		듣 🖃 间 sal	kila			
□ [Not Found]		e 🗆 🗀	Schemas			
[Not Found]		⇔ ∎	📓 dbo			
[Not Found]			🚞 Datatypes			
		(Functions			
		+ ±				
[Not Found]			Sequences			
		+ +				
		+ +	🛅 Views			
						=
				ОК	Cance	1
41 Object(s) Changed Locally 22 Object(s) Changed in Database 0 Object(s) N	ot Changed 0 Obj	ect(s) Changed in Database	and Locally		:



👘 MySQL-to-SQL Demo #1[SQL Server 2014] * - SQL Server Migration Assistant for MySql [Running in 32-bit mode]

- 0 ×

<u>F</u>ile <u>E</u>dit <u>V</u>iew <u>T</u>ools <u>H</u>elp

📄 😂 🛃 | 👤 Reconnect to MySql 👤 Reconnect to SQL Server 📓 Create Report 🛛 🎧 Convert Schema 🖉 Migrate Data 🗐

MySql Metadata Explorer	Table SQL Type Mappi Data Settings Charset Ma SQL Modes Properties Report	
🔩 Go Up 🔇 Go Back 👻 🕘 Go Forward 👻 🔡	🚺 SQL ▼ 🏊 → 📲 🛄 💭 斗 🔍	table : film
Image: Control of Contro of Contro of Contro of Control of Control of Control of Control o	<pre>1 CREATE TABLE `film` (2 `film_id` smallint(5) unsigned NOT NULL AUTO_INCREMENT, 3 `title` varchar(255) NOT NULL, 4 `description` text, 5 `release_year` year(4) DEFAULT NULL, 6 `language_id` tinyint(3) unsigned NOT NULL, 7 `original_language_id` tinyint(3) unsigned DEFAULT NULL, 8 `rental_duration` tinyint(3) unsigned NOT NULL DEFAULT '3', 9 `rental_rate` decimal(4,2) NOT NULL DEFAULT '4.99', 10 `length` smallint(5) unsigned DEFAULT NULL, </pre>	^ ~ >
SQL Server Metadata Explorer	Table SQL Data	
🔩 Go Up 🔇 Go Back 👻 🌍 Go Forward 👻 🔢	🚺 SQL ▼ 🏊 → 📲 🛄 💭 斗 🥋	table : film
□ ■ ↓ localhost □ □ □ Databases (1/5) ⊕ □ ↓ model ⊕ □ ↓ model ⊕ □ ↓ msdb □ □ ↓ sakila ⊕ □ ↓ Schemas (1/1) ⊕ □ ↓ tempdb	<pre>1 IF EXISTS (SELECT * FROM sys.objects so JOIN sys.schemas sc ON so.schema_id = sc.sch 2 BEGIN 3 4 DECLARE @drop_statement nvarchar(500) 5 6 DECLARE drop_cursor CURSOR FOR 7 SELECT 'alter table '+quotename(schema_name(ob.schema_id))+ 7 (.'+quotename(object_name(ob.object_id))+ ' drop constraint ' + quotename(fk.na 9 FROM sys.objects ob INNER JOIN sys.foreign_keys fk ON fk.parent_object_id = ob. 10 <</pre>	ame)
Error List		x
Output Serror List	Check error list	
Done.		



Data Migration Options

- ► Easiest option is to use SSMA to perform data migration
 - ► Test performance to determine best drivers to use
- For some DBMS source systems, SSMA offers Client-Side or Server-Side migration
 - Client-Side migration typically offers more driver options, data migration occurs on computer running SSMA
 - Client-Side migration not recommended if running SSMA remotely
 - Server-Side migration runs data migration on target database server, but typically is more restrictive on driver options
 - ► Test data migration the same way you would run it on Production!



SSMA Data Migration

😚 MySQL-to-SQL Demo #1[SQL Server 2014] - SQL Server Migration Assistant for MySql [Running in 32-bit mode]	– 0 ×
File Edit View Tools Help	
📄 📂 🛃 👤 Reconnect to MySql 빛 Reconnect to SQL Server 📓 Create Report 🎧 Convert Schema 👫 Migrate Data 🛛 🎟	
MySql Metadata Explorer	
🐄 Go Up 🔇 Go Back 👻 🐑 Go Forward 👻 🛐	
Image: Second	
B → C K sakila B → C I sys Create Report	
terrent in world terrent in the second	
Refresh from Database	
Save as Script	
생길 Migrate Data	
Advanced Object Selection	
SQL Server Metadata Explorer	
🐜 Go Up 🕥 Go Back 👻 🐑 Go Forward 👻 🔢	
· · · · · · · · · · · · · · · · · · ·	
Done.	



SSMA Data Migration

Data	Migration Report			eck error list		— 🗆	
Status	From	То	Total Rows	Migrated Rows	Success Rate	Duration (DD:HH:MM:SS:MS)	
٩	sakila.actor	sakila.dbo.actor	200	200	100.00 %	00:00:00:02:852	
Δ	sakila.address	sakila.dbo.address	603	0	0.00 %	00:00:09:521	
٩	sakila.category	sakila.dbo.category	16	16	100.00 %	00:00:02:755	
٩	sakila.city	sakila.dbo.city	600	600	100.00 %	00:00:00:02:872	
٩	sakila.country	sakila.dbo.country	109	109	100.00 %	00:00:02:752	
٩	sakila.customer	sakila.dbo.customer	599	599	100.00 %	00:00:00:02:773	
۹	sakila.film	sakila.dbo.film	1000	1000	100.00 %	00:00:00:03:337	
۹	sakila.film_actor	sakila.dbo.film_actor	5462	5462	100.00 %	00:00:00:03:388	
٩	sakila.film_category	sakila.dbo.film_category	1000	1000	100.00 %	00:00:00:03:188	
۹	sakila.film_text	sakila.dbo.film_text	1000	1000	100.00 %	00:00:00:02:945	
۹	sakila.inventory	sakila.dbo.inventory	4581	4581	100.00 %	00:00:00:01:111	
٩	sakila.language	sakila.dbo.language	6	6	100.00 %	00:00:00:393	
٩	sakila.payment	sakila.dbo.payment	16049	16049	100.00 %	00:00:00:03:097	
٢	sakila.rental	sakila.dbo.rental	16044	16044	100.00 %	00:00:00:03:504	

etails

Close

Save Report



SSMA Data Migration

👘 MySQL-to-SQL Demo #1[SQL Server 2014] * - SQL Server Migration Assistant for MySql [Running in 32-bit mode]

σ×

<u>File Edit View T</u>ools <u>H</u>elp

📄 😂 🛃 🖳 Reconnect to MySql 👤 Reconnect to SQL Server 📓 Create Report 🔐 Convert Schema 🖉 Migrate Data 👘

MySql Metadata Explorer		able SQL Type Mapp	i. Data Settings	Charset Ma. SQL Modes	Properties Report		
🔩 Go Up 🔇 Go Back 👻 🐑 Go Forward 👻 🔢	Tab	le -				table :	: address
⊡ ∑ Tables (16/16)	^	Column Name	Data Type	Default	Identity	Nullable	^
B ✓ III actor B ✓ III address	? ►	ADDRESS_ID	SMALLINT(5) UNSIGNED				
teregory		ADDRESS	VARCHAR(50)				
		ADDRESS2	VARCHAR(50)	NULL		\checkmark	
		DISTRICT	VARCHAR(20)				
🕀 🖓 🧱 film	9	CITY_ID	SMALLINT(5) UNSIGNED				
		POSTAL_CODE	VARCHAR(10)	NULL		\checkmark	
ilm_category ilm_√ III_text	~	PHONE	VARCHAR(20)				~
SQL Server Metadata Explorer ↑… Go Up ③ Go Back							
Error List	d L						>
😢 1 Errors 🔝 0 Warnings 💷 0 Information							
ID Message			Description				
DataMigration Error. From : sakila address			Migration of Spatial D with SQL Server 200	Data requires SQL Server compone 08 (and above) or use server side da	nt (Microsoft.SqlServer.Types). P ata migration mode.	lease perform this task on a mach	nine
Done.	Che	ck error list					

SPINNAKER SUPPORT Testing Converted Database Objects

- Develop a test approach focused on minimizing risk
 - ► Full regression testing may be impractical on large systems
 - Recommended approach is to unit test each database object
 - Run each object on source and target system and compare output
 - For objects where output does not match, perform additional testing and fix as needed
 - Consider production parallel testing if possible

Schedule UAT and Performance testing on target Production hardware

- Baseline performance of source system for critical functions and compare timings to target system
- Before final deployment, perform user acceptance on target Production hardware



Test Database Migration Cycles

- Schedule time to run database migration steps multiple time
 - At a minimum, run through the database migration steps when setting up the test, QA test, and UAT environments
 - Additional test migrations can be scheduled when refreshing test environments and when doing code drops
 - Executing the migration steps multiple times provides more opportunities to uncover issues and to fine tune the process



Final Deployment

- Schedule a change moratorium prior to the final deployment
 - ► Allows for migration scripts to be in a stable state prior to deployment
 - Schedule one final test migration with the finalized scripts
 - Any emergency fixes to source system can be applied to target system after final deployment
 - All enhancements and non-critical fixes should be worked on new system
- Develop deployment plan
 - ► Include contact information and hours when people need to be available
 - Migration steps can take a long time, so schedule checkpoint meetings where people can get status information
 - Consider having a dedicated person to coordinate communications



Contingency Plans

- ► Have a detailed plan ready to enable source system
 - ► Preserve the state of source system to ensure back out plan is successful
 - ► Do not make changes on SQL Server that will make back out plan harder
 - Determine in advance the criteria for back out and who is responsible for making the decision
 - Plan your final deployment with a back out plan in mind (do not make changes that will make backing out more difficult)
- Plan for an extended post-production support
 - ► Some issues may arise days after the final deployment
 - ► Plan to set aside time for support team to address any emergency fixes



Decommission Source System

- ► Before decommissioning source system consider:
 - Script all database objects and archive in source code repository
 - Create backups and determine retention plan
 - Consider having a system available where source system can be restored if needed