



**UNIVERSIDAD  
GERARDO BARRIOS**

**Líderes en Gestión del Conocimiento**



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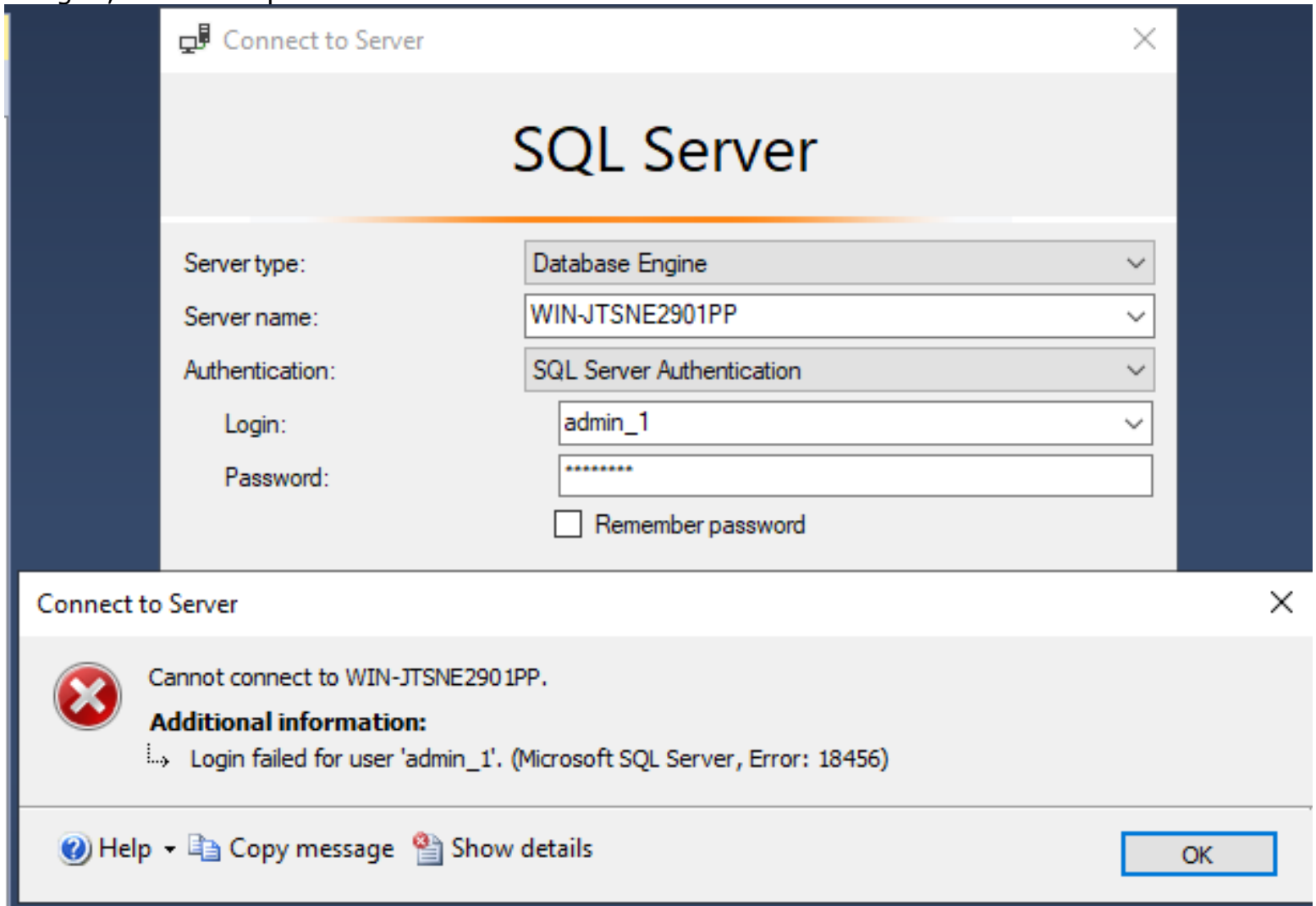
*Soporte Técnico de Bases de  
Datos.*

*Ciclo I 2022*

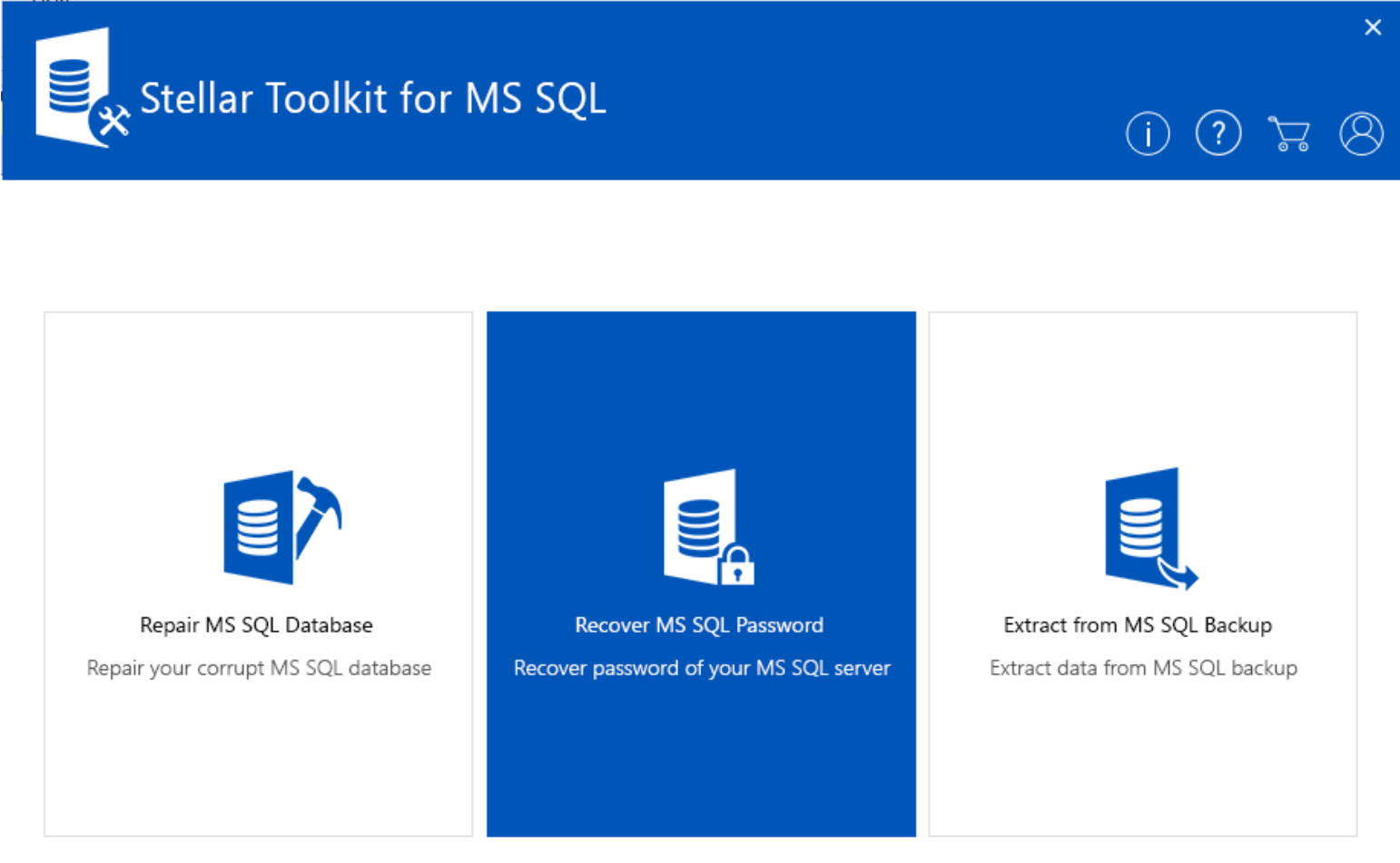


## Recuperación de contraseña para usuario administrador en SQL Server:

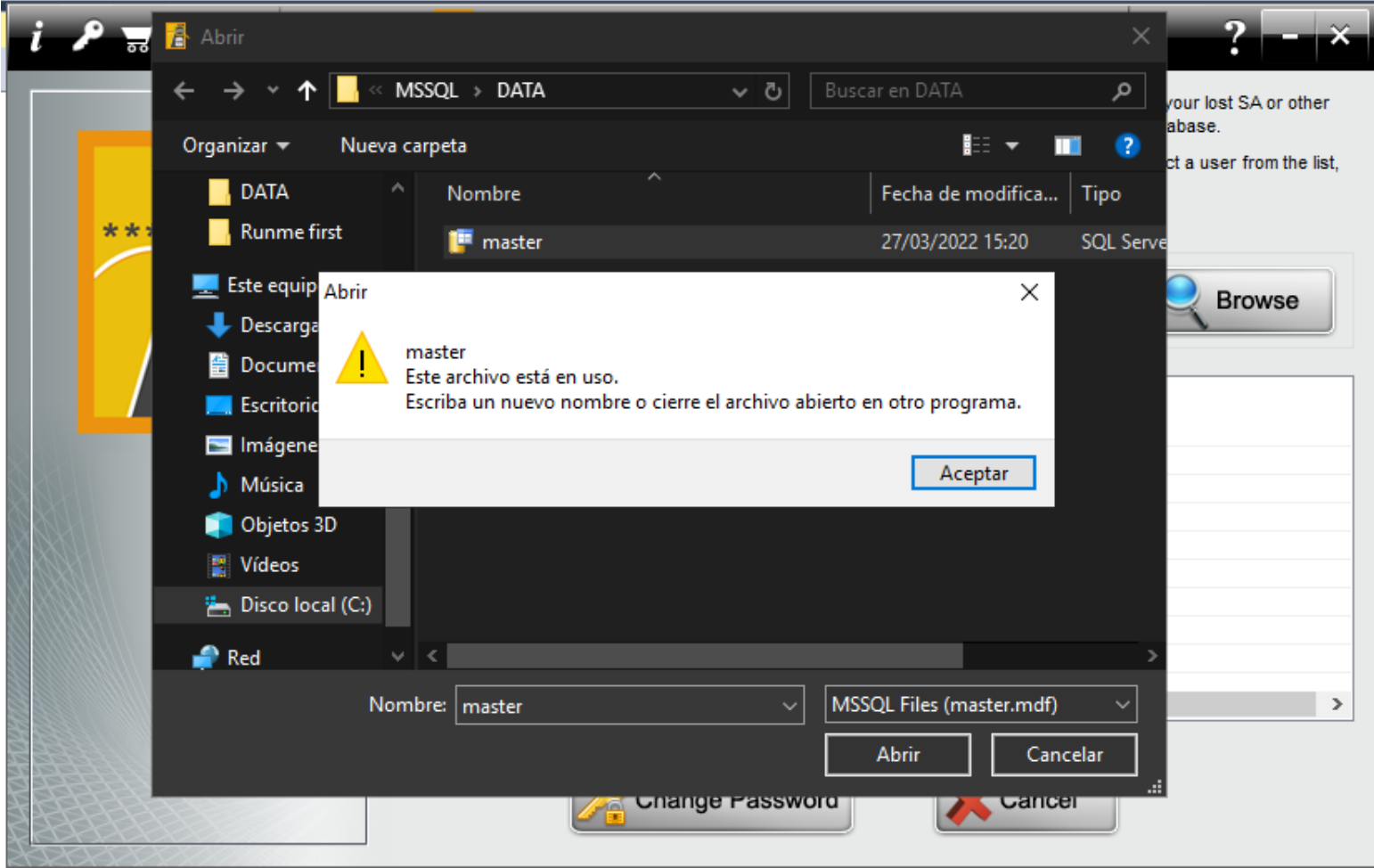
**Contexto:** el usuario administrador de la base de datos; ha sido despedido por no asegurar la integridad de la información al momento de registrar las operaciones en la base de datos, y por no realizar los **backups** correspondientes de manera correcta, de tal modo que la base de datos es inaccesible para el nuevo DBA, que solo cuenta con el nombre de usuario y una contraseña antigua, la cual no permite inicio de sesión tal como se ve:



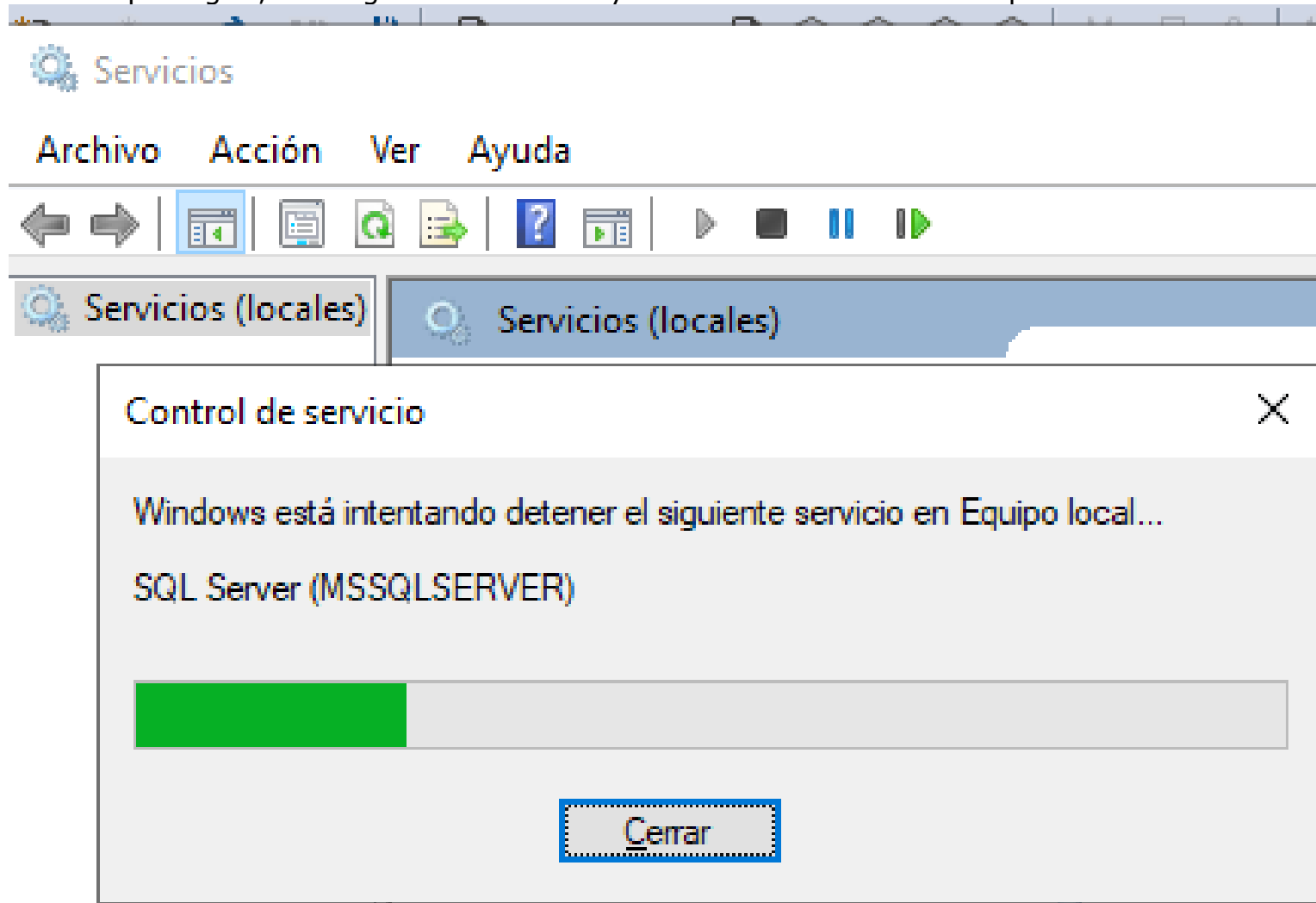
Como primer paso, el usuario DBA, recomienda a los directivos la descarga de la herramienta **Stellar Toolkit for MS SQL** y como primera pantalla muestra la siguiente ventana, selecciona la opción Recover MS SQL Password:



Nos damos cuenta que es necesario detener los servicios.



Antes de proseguir, se dirige a los servicios y los detiene de manera temporal:

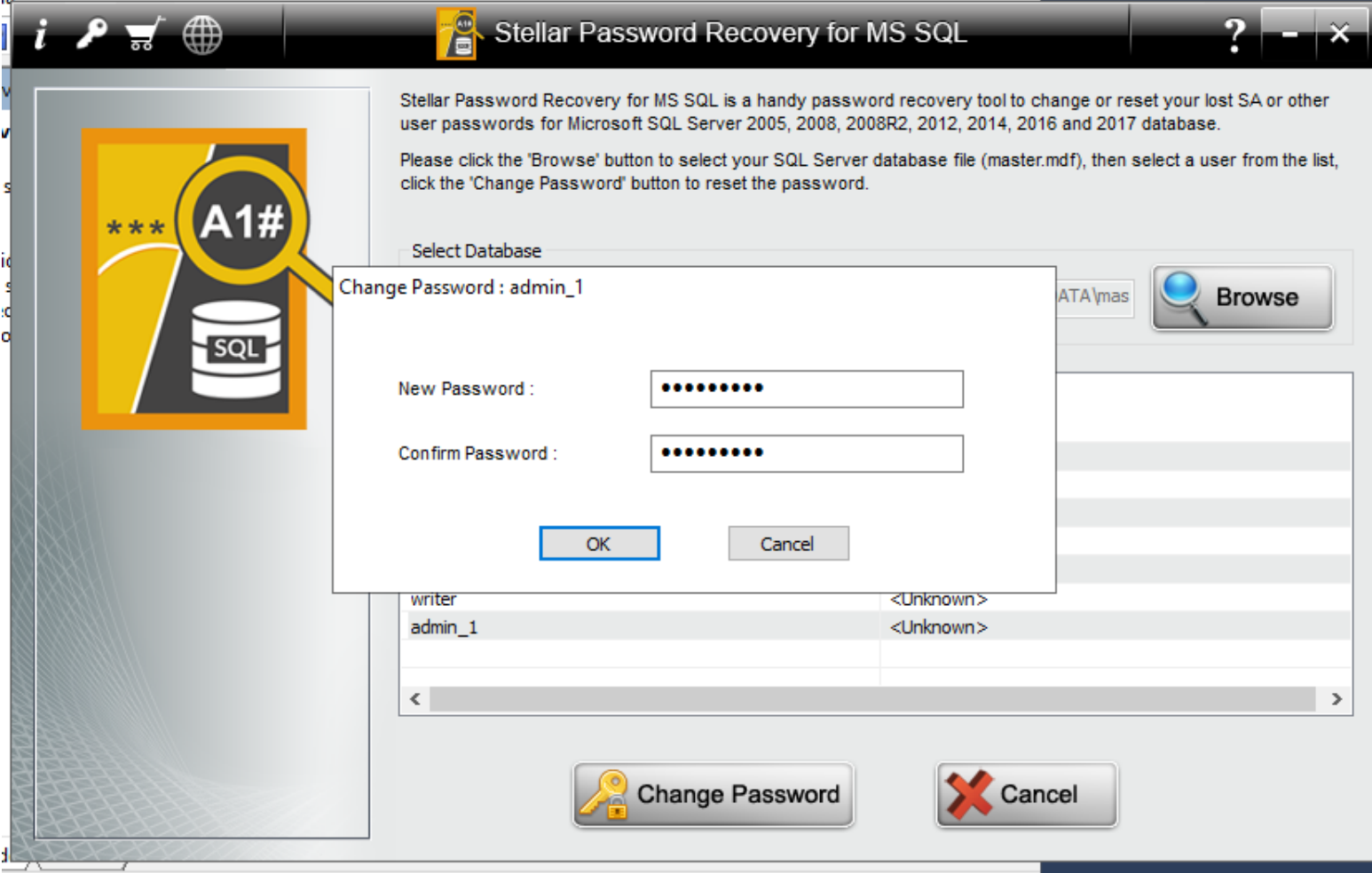


Luego, estando en la herramienta, se debe seleccionar la ruta que contiene nuestra base de datos maestra, la ubicación es la que tiene por defecto, luego de haber seleccionado, presionamos el botón de búsqueda y obtenemos los siguientes resultados: Nosotros necesitamos recuperar contraseña del usuario **admin\_1**, seleccionamos y damos clic en **Change Password**

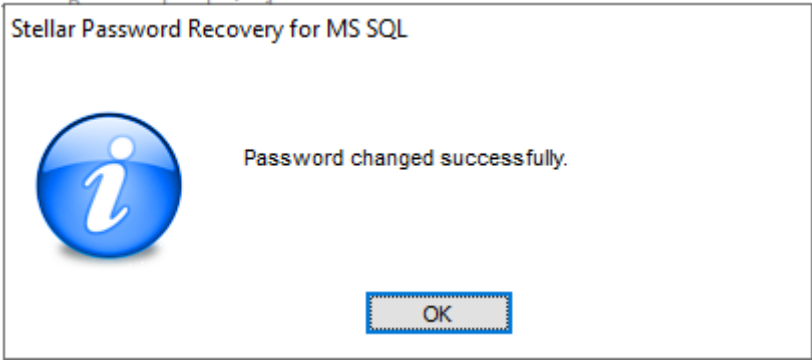




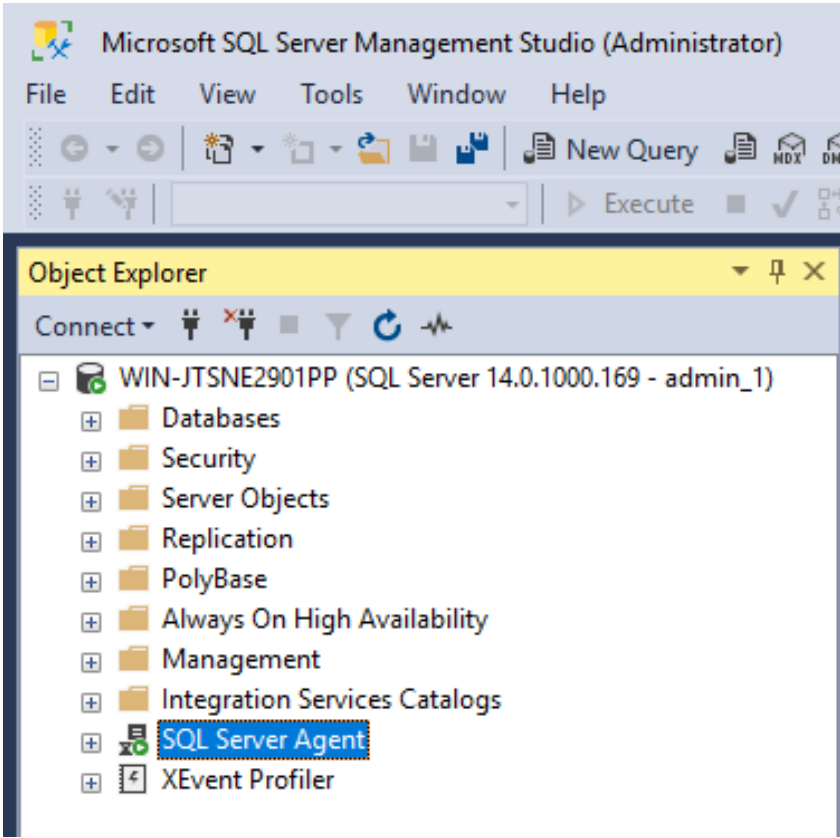
Damos doble clic sobre el usuario y a continuación, digitamos la nueva contraseña: clic en ok



Obtenemos el mensaje que nos confirma que la contraseña ha sido actualizada.



Verificamos el acceso y efectivamente tenemos acceso a nuestro gestor como usuario administrador:

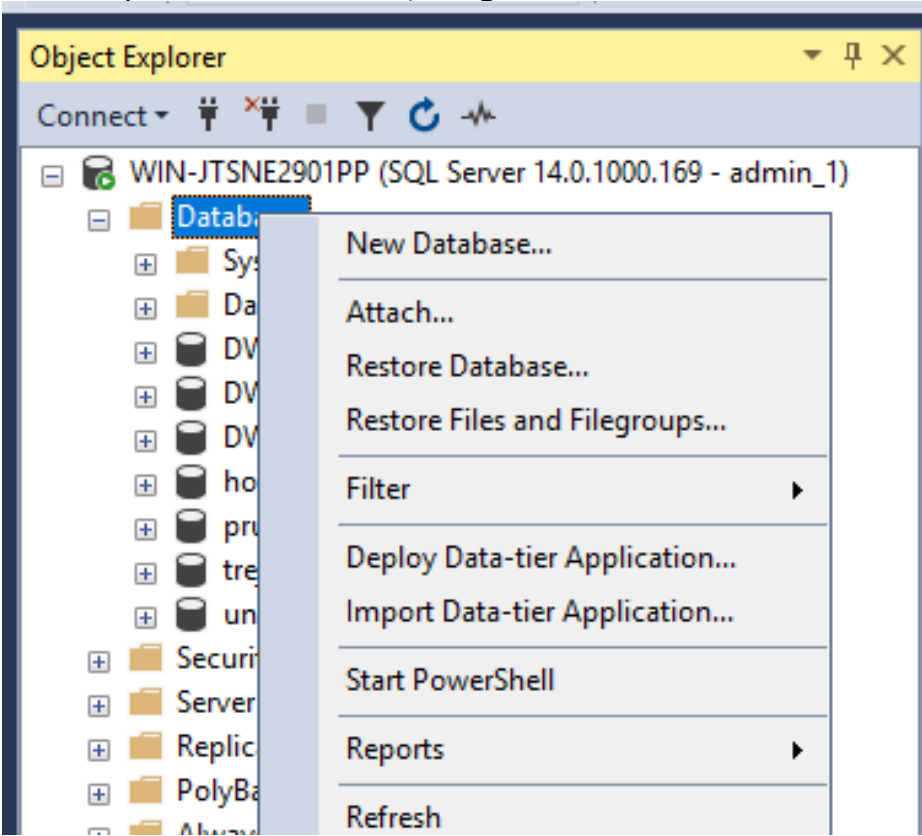


## Recuperación de bases de datos en SQL Server:

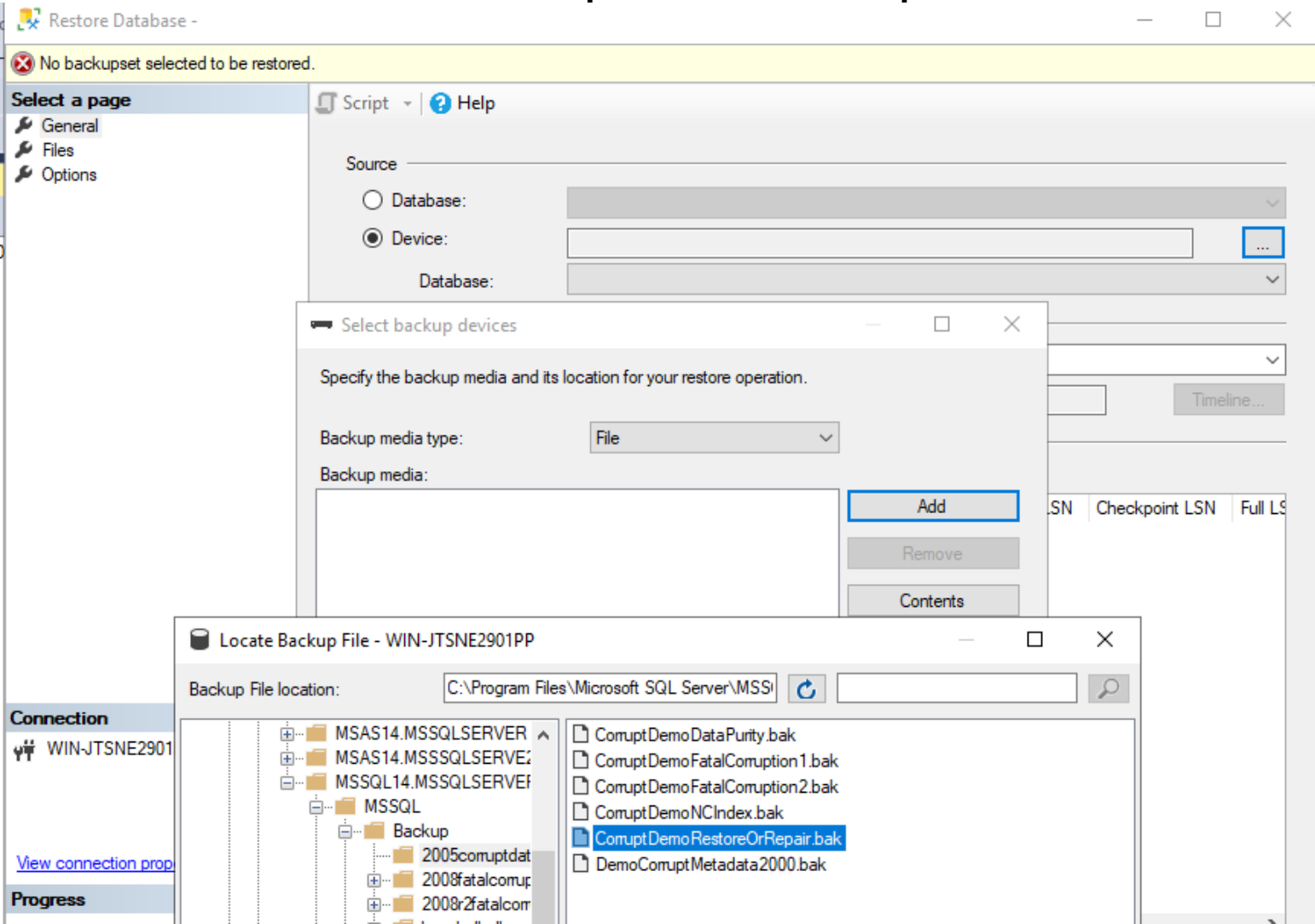
Caso #2, Al nuevo DBA se le encomienda la opción de restaurar una base de datos corrupta:

### Pasos realizados:

Damos clic derecho en la opción **Databases**, luego en restaurar bases de datos:



Buscamos la base de datos llamada **CorruptDemoRestoreOrRepair**:



Verificamos que el archivo se reconozca desde esta pantalla como un archivo .bak válido, dando clic en el botón **Verify Backup Media** y damos clic en **ok**:

Restore Database - DemoRestoreOrRepair

Backup media verified successfully

Select a page

GeneralFilesOptions

ScriptHelp

Source

Database:

Device:

Device:

Device:

Destination

Database:

Restore to:

Restore plan

Backup sets to restore:

Restore	Name	Component	Type	Server	Database	Position	First LSN
<input checked="" type="checkbox"/>		Database	Full	ROADRUNNERPR	DemoRestoreOrRepair	1	68000000013600037

Connection

WIN-JTSNE2901PP [admin\_1]

[View connection properties](#)

Progress

Done

Verify Backup Media

OK

Cancel

Help

Si todo ha salido bien, podremos obtener un mensaje que nos confirma que la base de datos se ha restaurado sin mayores inconvenientes:

ScriptHelp

Source

Database:

Device:

Device:

Device:

Destination

Database:

Restore to:

Restore plan

Backup sets to restore:

Restore	Name	Component	Type	Server	Database	Position	First LSN
<input checked="" type="checkbox"/>		Database	Full	ROADRUNNERPR	DemoRestoreOrRepair	1	68000000013600037

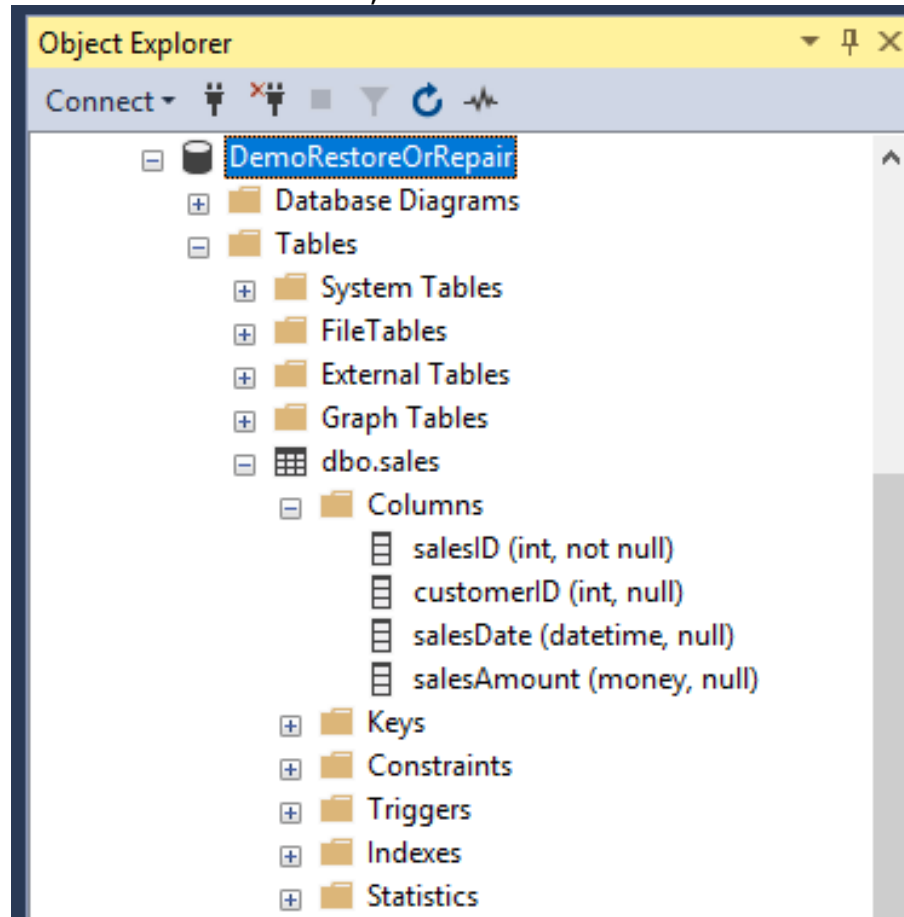
Microsoft SQL Server Management Studio

Database 'DemoRestoreOrRepair' restored successfully.

Aceptar

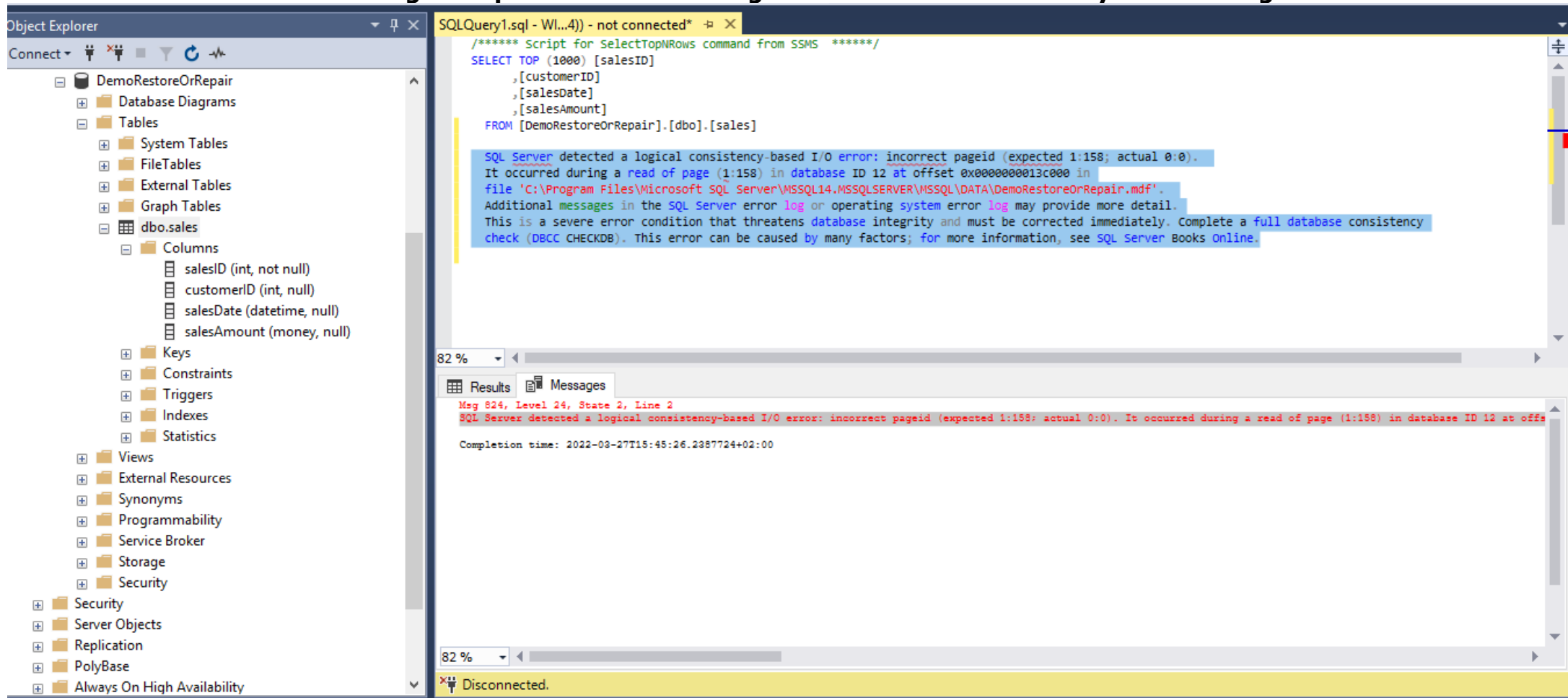
A siempre vista podríamos concluir que el archivo no está dañado por que se recuperó sin ningún error, pero el usuario DBA, decide realizar una comprobación a las tablas de la base de datos recuperada:

Estructura de la base de datos restaurada, consta nada más de una tabla llamada **sales**





Inmediatamente se procede a realizar una consulta a la tabla y se obtiene el siguiente error:  
Este error se debe a que el servidor detectó un error basado en la coherencia lógica, al momento de la lectura de la página (1:158),  
**Esta es una condición de error grave que amenaza la integridad de la base de datos y debe corregirse de inmediato.**



Object Explorer

- Connect
- DemoRestoreOrRepair
  - Database Diagrams
  - Tables
    - System Tables
    - FileTables
    - External Tables
    - Graph Tables
    - dbo.sales
      - Columns
        - salesID (int, not null)
        - customerID (int, null)
        - salesDate (datetime, null)
        - salesAmount (money, null)
      - Keys
      - Constraints
      - Triggers
      - Indexes
      - Statistics
    - Views
    - External Resources
    - Synonyms
    - Programmability
    - Service Broker
    - Storage
    - Security
  - Security
    - Server Objects
    - Replication
    - PolyBase
    - Always On High Availability

SQLQuery1.sql - Wl...4)) - not connected\* - X

```
/****** Script for SelectTopNRows command from SSMS *****/  
SELECT TOP (1000) [salesID]  
    ,[customerID]  
    ,[salesDate]  
    ,[salesAmount]  
FROM [DemoRestoreOrRepair].[dbo].[sales]
```

SQL Server detected a logical consistency-based I/O error: incorrect pageid (expected 1:158; actual 0:0).  
It occurred during a read of page (1:158) in database ID 12 at offset 0x0000000013c000 in  
file 'C:\Program Files\Microsoft SQL Server\MSSQL14.MSSQLSERVER\MSSQL\DATA\DemoRestoreOrRepair.mdf'.  
Additional messages in the SQL Server error log or operating system error log may provide more detail.  
This is a severe error condition that threatens database integrity and must be corrected immediately. Complete a full database consistency  
check (DBCC CHECKDB). This error can be caused by many factors; for more information, see SQL Server Books Online.

82 %

Results Messages

Msg 824, Level 24, State 2, Line 2  
SQL Server detected a logical consistency-based I/O error: incorrect pageid (expected 1:158; actual 0:0). It occurred during a read of page (1:158) in database ID 12 at off  
Completion time: 2022-03-27T15:45:26.2387724+02:00

82 %

Disconnected.

A continuación, se abre el archi corrupto desde la herramienta **Stellar** pero esta vez seleccionamos la opción, **Backup Extractor for MS SQL**, del análisis podemos obtener que el archivo posee una sola tabla llamada **sales** y que tiene una cantidad de registros de **4,755**, y nada más

The screenshot displays the Stellar Backup Extractor for MS SQL application window. The interface includes a menu bar (File, Tools, Help), a toolbar with icons for Open File, Save, Stop, and Exit, and a 'Find Tree Item' search box. The left pane shows a tree view of the database structure, with 'dbo.sales' selected under the 'Tables' folder. The right pane features the Stellar logo and a section titled 'Steps To Recover MS SQL backup file:' with two instructions: '1. Select File:' (click the BAK icon) and '2. Save Recovered File:' (click the save icon). The bottom pane, titled 'Log Report', provides details about the backup file selected for recovery, the detected backup set version (MS SQL Server 2005), and the scanning process completion. It also lists the total number of tables present (1) and the record count for the 'dbo.sales' table (4755 Record(s)). A status bar at the bottom indicates 'Ready' and 'Records : 00004000'.

File Tools Help

Open File Save Stop Exit

File View

Find Tree Item :

☐ Match case ☐ Match whole word Find

☒ Status Bar  
☒ Log Window

C:\Users\Administrador\Desktop\Necesario Datos Corruptos\2005corruptdatabasesbackups\CorruptDemoRestoreOrRepair.bak

Tables  
  + [icon] dbo.sales  
Views  
Synonyms  
Programmability  
  Stored Procedures  
  Functions  
  Rules  
  Defaults  
  + [icon] Data Types  
  Triggers  
  Sequences  
  Assemblies

**Stellar**  
Backup Extractor for MS SQL

Steps To Recover MS SQL backup file:

- 1. Select File:**  
Click button on File Ribbon to select corrupt MS SQL backup file.
- 2. Save Recovered File:**  
Click button on File Ribbon to save recovered database file.

Log Report

Backup file selected for recovery : C:\Users\Administrador\Desktop\Necesario Datos Corruptos\2005corruptdatabasesbackups\CorruptDemoRestoreOrRepair.bak

Detected backup set version : MS SQL Server 2005  
Scanning file...Completed

Reading database structure...Completed  
Scanning process completed on Sunday, March 27, 2022, 03:48:56 PM

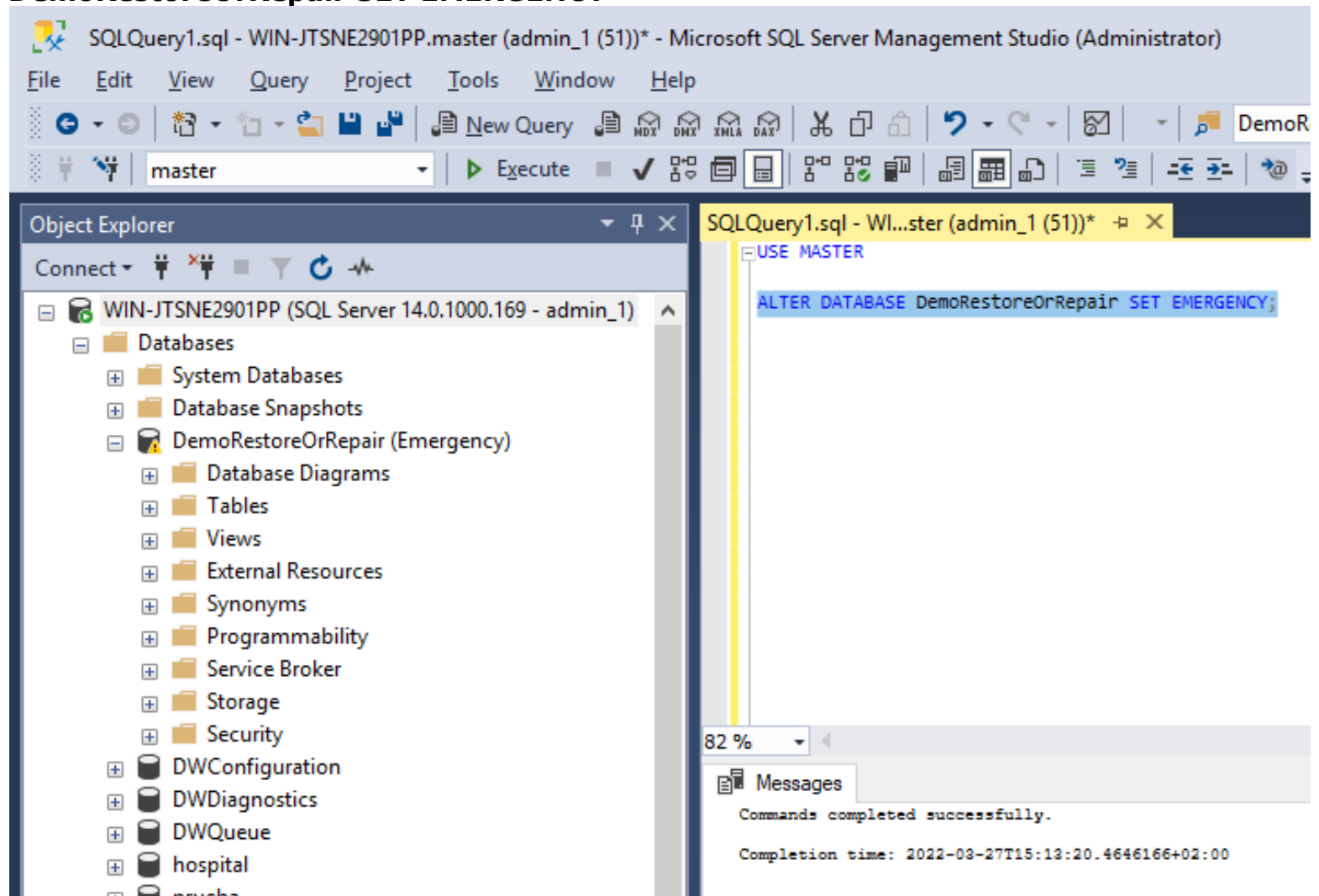
Total Table(s) present : 1

-----  
dbo.sales : 4755 Record(s)  
-----

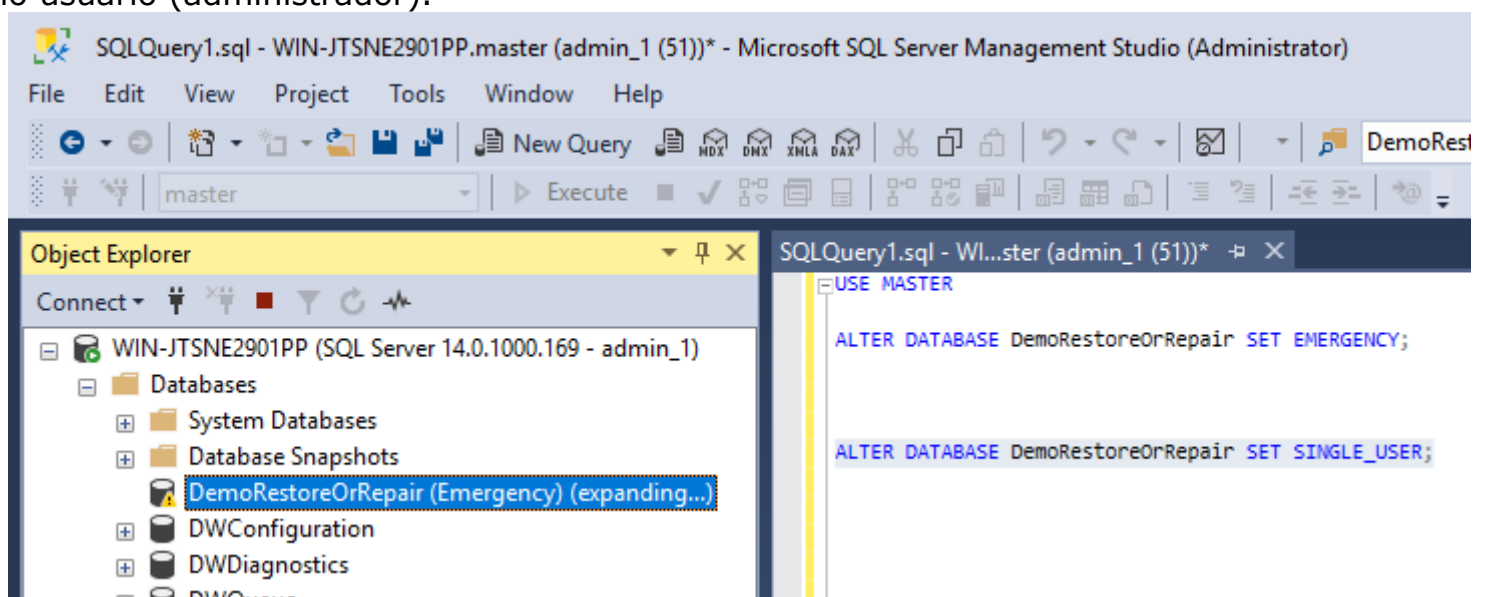
Total Defaults present : 0  
Total Rules present : 0  
Total Triggers present : 0  
Total Synonyms present : 0  
Total Stored Procedures present : 0  
Total User Defined Functions present : 0  
Total Views present : 0  
Total Addextended Properties present : 0  
-----

Ready | Records : 00004000

Procedemos a poner nuestra base en estado de emergencia: **ALTER DATABASE DemoRestoreOrRepair SET EMERGENCY**



Seguidamente, configuramos la base de datos para que solamente pueda ser accedida por un solo usuario (administrador).



Ejecutamos: **DBCC CHECKDB (DemoRestoreOrRepair, REPAIR\_ALLOW\_DATA\_LOSS )WITH NO\_INFOMSGS;** con el objetivo de verificar la base de datos en busca de cualquier error de inconsistencia y aplicar algunas reparaciones especiales para solucionar el problema de corrupción del registro de transacciones.

De tal manera, podemos observar en los mensajes de salida, que múltiples errores han sido reparados: **"The error has been repaired"**, encontrando y reparando múltiples inconsistencias en la única tabla que posee.

The screenshot displays the Microsoft SQL Server Management Studio (SSMS) interface. The title bar indicates the connection is to 'SQLQuery1.sql - WIN-JTSNE2901PP.master (admin\_1 (51))\* - Microsoft SQL Server Management Studio (Administrator)'. The 'Object Explorer' on the left shows the database structure, with 'DemoRestoreOrRepair (Emergency)' highlighted. The 'Query Editor' in the center contains the following SQL script:

```
USE MASTER  
  
ALTER DATABASE DemoRestoreOrRepair SET EMERGENCY;  
  
ALTER DATABASE DemoRestoreOrRepair SET SINGLE_USER;  
  
DBCC CHECKDB (DemoRestoreOrRepair, REPAIR_ALLOW_DATA_LOSS )WITH NO_INFOMSGS;
```

The 'Messages' pane at the bottom shows the execution results, including several error messages and repair status updates. The messages indicate that the database was successfully repaired, with the following key information:

- Msg 8909, Level 16, State 1, Line 7: Table error: Object ID 0, index ID -1, partition ID 0, alloc unit ID 0 (type Unknown), page ID (1:158) contains an incorrect page ID in its page header. The PageId in the pa... The error has been repaired.
- Msg 8949, Level 16, State 1, Line 7: Table error: Object ID 2073058421, index ID 1 will be rebuilt.
- Msg 8928, Level 16, State 1, Line 7: Table error: Object ID 2073058421, index ID 1, partition ID 72057594038386688, alloc unit ID 72057594042384384 (type In-row data): Page (1:158) could not be processed. See other errors... The error has been repaired.
- Msg 8976, Level 16, State 1, Line 7: Table error: Object ID 2073058421, index ID 1, partition ID 72057594038386688, alloc unit ID 72057594042384384 (type In-row data). Page (1:158) was not seen in the scan alth... The error has been repaired.
- Msg 8978, Level 16, State 1, Line 7: Table error: Object ID 2073058421, index ID 1, partition ID 72057594038386688, alloc unit ID 72057594042384384 (type In-row data). Page (1:159) is missing a reference from p... The error has been repaired.

The messages also state: 'CHECKDB found 0 allocation errors and 1 consistency errors not associated with any single object. CHECKDB fixed 0 allocation errors and 1 consistency errors not associated with any single object. Repair: The Clustered index successfully rebuilt for the object "dbo.sales" in database "DemoRestoreOrRepair". Repair: The page (1:158) has been deallocated from object ID 2073058421, index ID 1, partition ID 72057594038386688, alloc unit ID 72057594042384384 (type In-row data).'

The status bar at the bottom indicates 'Query completed with errors.' and shows the completion time as '2022-03-27T15:14:43.8281952+02:00'.

A continuación, como último paso, restablecemos la base de datos a que pueda manejar múltiples usuarios, usamos la base de datos y finalmente consultamos la cantidad de registros de la tabla; como podemos observar, ya no tenemos ningún error al momento de consultar la tabla y la cantidad de registros contados; es la misma que nos devolvió la herramienta **Stellar** cuando hicimos el análisis previo de la BD.

SQLQuery1.sql - WIN-JTSNE2901PP.DemoRestoreOrRepair (admin\_1 (51))\* - Microsoft SQL Server Management Studio (Administrator)

File Edit View Query Project Tools Window Help

◀ ▶ ↺ ↻ 🔍 📄 📁 📂 📅 📆 📇 📈 📉 📊 📋 📌 📍 📎 📏 📐 📑 📒 📓 📔 📕 📖 📗 📙 📚 📛 📜 📝 📞 📟 📠 📡 📢 📣 📤 📥 📦 📧 📨 📩 📪 📫 📬 📭 📮 📯 📰 📱 📲 📳 📴 📵 📶 📷 📸 📹 📺 📻 📼 📽 📾 📿 📠 📡 📢 📣 📤 📥 📦 📧 📨 📩 📪 📫 📬 📭 📮 📯 📰 📱 📲 📳 📴 📵 📶 📷 📸 📹 📺 📻 📼 📽 📾 📿

DemoRestoreOrRepair

Execute

Object Explorer

Connect

WIN-JTSNE2901PP (SQL Server 14.0.1000.169 - admin\_1)

Databases

System Databases

Database Snapshots

DemoRestoreOrRepair

Database Diagrams

Tables

System Tables

FileTables

External Tables

Graph Tables

dbo.sales

Views

External Resources

Synonyms

Programmability

Service Broker

Storage

Security

DWConfiguration

DWDiagnostics

DWQueue

hospital

prueba

trejo

universidad

Security

Server Objects

Replication

PolyBase

SQLQuery1.sql - WI...pair (admin\_1 (51))\*

USE MASTER

ALTER DATABASE DemoRestoreOrRepair SET EMERGENCY;

ALTER DATABASE DemoRestoreOrRepair SET SINGLE\_USER;

DBCC CHECKDB (DemoRestoreOrRepair, REPAIR\_ALLOW\_DATA\_LOSS )WITH NO\_INFOMSGS;

ALTER DATABASE DemoRestoreOrRepair SET MULTI\_USER;

use DemoRestoreOrRepair

select COUNT(\*) from sales

82 %

Results Messages

(No column name)

1 4755

Query executed successfully.

Consultamos la tabla y observamos el registro número 4,755:

SQLQuery1.sql - WIN-JTSNE2901PP.DemoRestoreOrRepair (admin\_1 (51))\* - Microsoft SQL Server Management Studio (Administrator)

File Edit View Query Project Tools Window Help

◀ ▶ ↺ ↻ 🔍 📄 📁 📂 📅 📆 📇 📈 📉 📊 📋 📌 📍 📎 📏 📐 📑 📒 📓 📔 📕 📖 📗 📙 📚 📛 📜 📝 📞 📟 📠 📡 📢 📣 📤 📥 📦 📧 📨 📩 📪 📫 📬 📭 📮 📯 📰 📱 📲 📳 📴 📵 📶 📷 📸 📹 📺 📻 📼 📽 📾 📿

DemoRestoreOrRepair

Execute

Object Explorer

Connect

WIN-JTSNE2901PP (SQL Server 14.0.1000.169 - admin\_1)

Databases

System Databases

Database Snapshots

DemoRestoreOrRepair

Database Diagrams

Tables

System Tables

FileTables

External Tables

Graph Tables

dbo.sales

Views

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DWConfiguration

DWDiagnostics

DWQueue

hospital

prueba

trejo

universidad

Security

Server Objects

Replication

PolyBase

SQLQuery1.sql - WI...pair (admin\_1 (51))\*

USE MASTER

ALTER DATABASE DemoRestoreOrRepair SET EMERGENCY;

ALTER DATABASE DemoRestoreOrRepair SET SINGLE\_USER;

DBCC CHECKDB (DemoRestoreOrRepair, REPAIR\_ALLOW\_DATA\_LOSS )WITH NO\_INFOMSGS;

ALTER DATABASE DemoRestoreOrRepair SET MULTI\_USER;

use DemoRestoreOrRepair

select COUNT(\*) from sales

select \* from sales

82 %

Results Messages

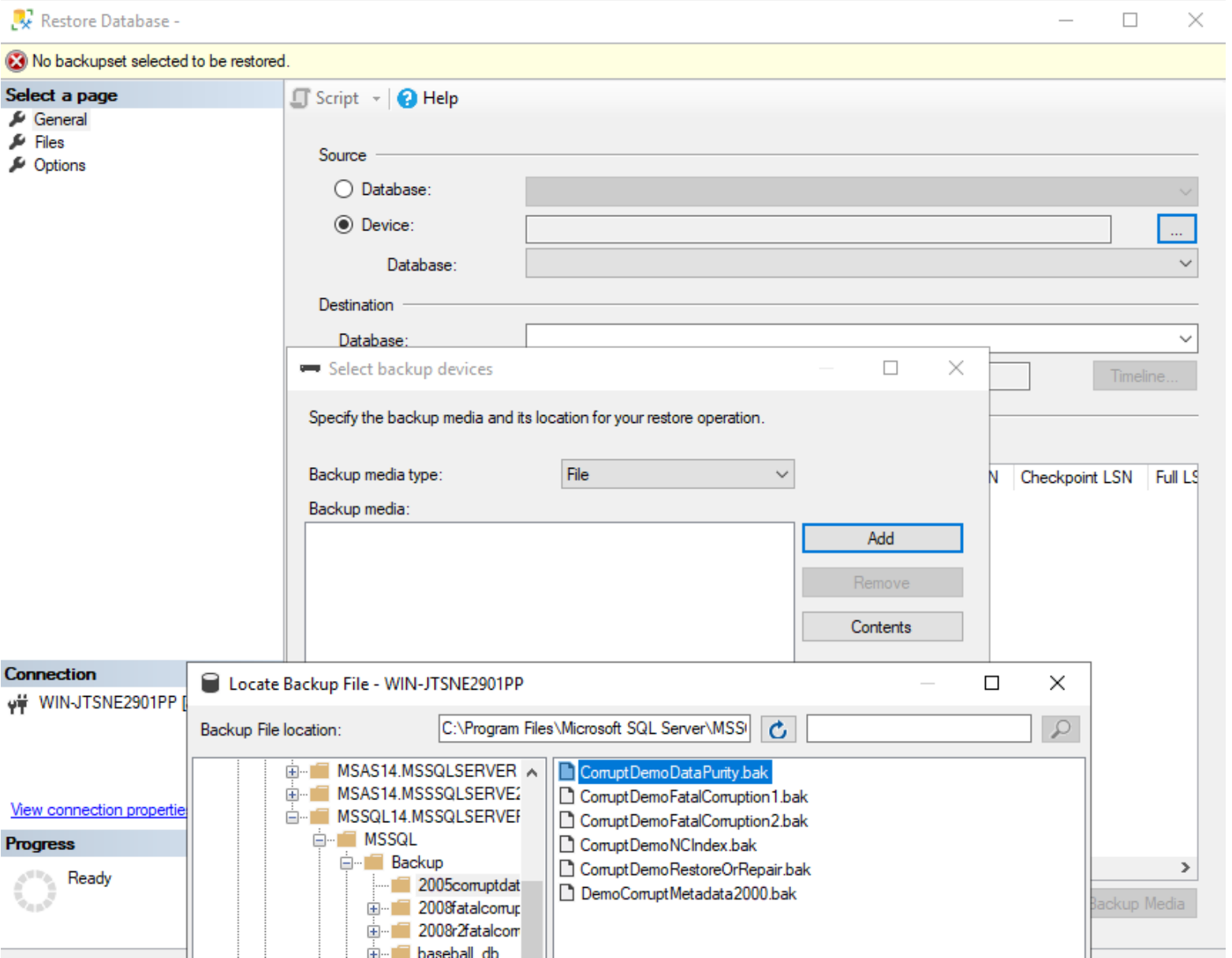
salesID	customerID	salesDate	salesAmount
4746	4991	2008-11-19 12:49:48.390	19,5453
4747	4992	2008-11-19 12:49:48.390	50,7214
4748	4993	2008-11-19 12:49:48.390	7,0794
4749	4994	2008-11-19 12:49:48.390	11,3147
4750	4995	2008-11-19 12:49:48.390	78,7789
4751	4996	2008-11-19 12:49:48.390	86,842
4752	4997	2008-11-19 12:49:48.390	83,9826
4753	4998	2008-11-19 12:49:48.390	76,9545
4754	4999	2008-11-19 12:49:48.390	38,1534
4755	5000	2008-11-19 12:49:48.390	83,7201

Query executed successfully.

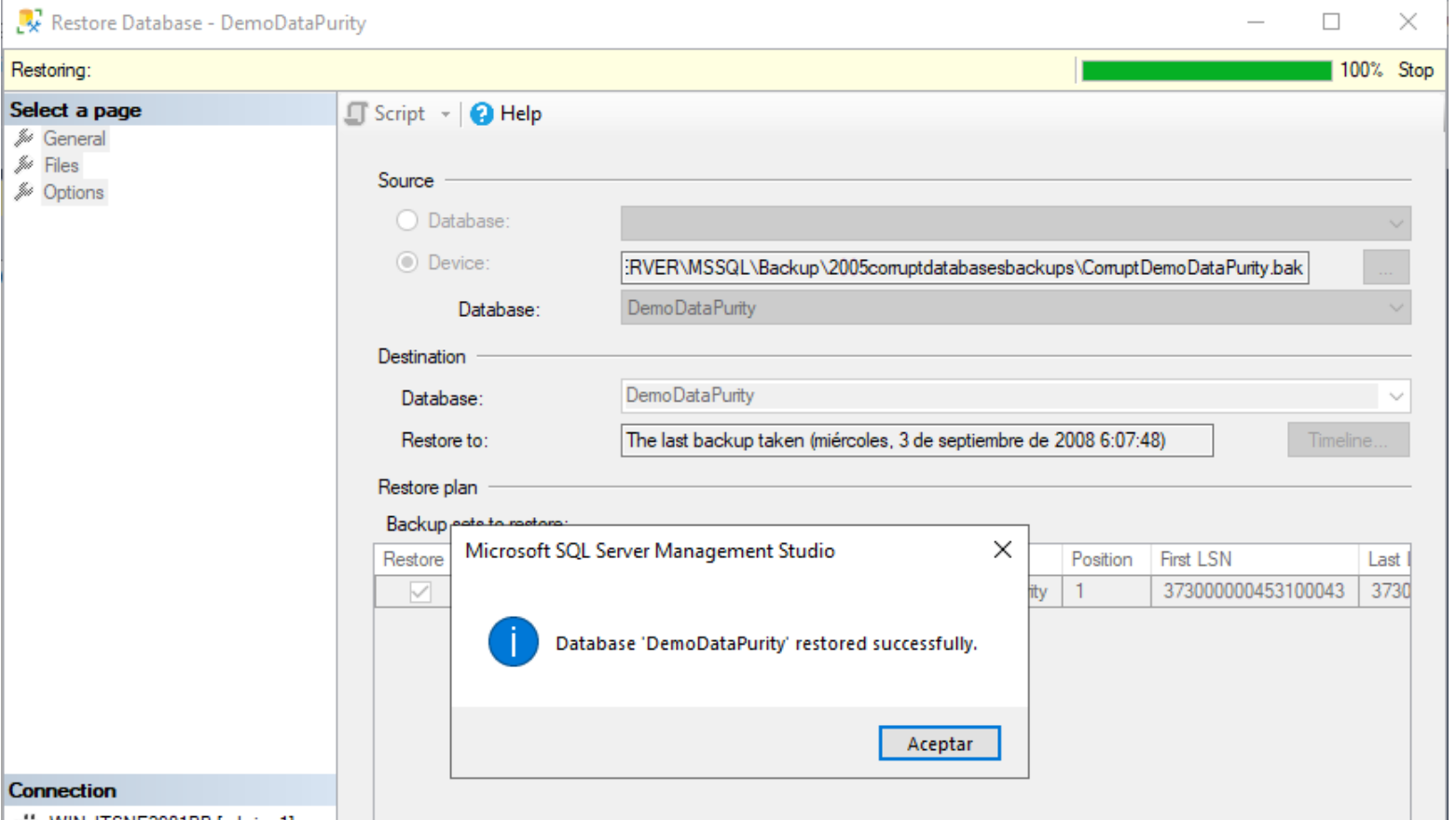
WIN-JTSNE2901PP (14.0 RTM) | admin\_1 (51) | DemoRestoreOrRepair | 00:00:00 | 4,755 rows



Paso #3, analizaremos una segunda base de datos corrupta, llamada **CorrupDemoDataPutty**, realizamos los pasos para cargar este archivo al gestor, seleccionando el archivo desde la ruta donde se almacena:



Igual que la base de datos anterior, se ha cargado sin ningún problema:



Ahora de la base de datos restaurada, podemos visualizar 3 tablas; procedemos a analizar las tablas y en los resultados obtenemos que en la tabla **Employees y Sales** no hay ningún problema, pero en la tabla Products, específicamente en la columna Price tenemos un valor que esta fuera del rango **float**, y nos sugiere que actualicemos el valor de ese registro a uno que si sea aceptable.

SQLQuery7.sql - WIN-JTSNE2901PP.DemoDataPurity (admin\_1 (57)) - Microsoft SQL Server Management Studio (Administrator)

File Edit View **Query** Project Tools Window Help

Quick Launch (Ctrl+Q)

DemoRestoreOrRepair

DemoDataPurity Execute

Object Explorer

Connect

- trejo
- universidad
- DemoDataPurity
  - Database Diagrams
  - Tables
    - System Tables
    - FileTables
    - External Tables
    - Graph Tables
    - dbo.Customers
    - dbo.Employees
    - dbo.Products
    - dbo.Sales
  - Views
  - External Resources
  - Synonyms
  - Programmability
  - Service Broker
  - Storage
  - Security
- Security
- Server Objects
- Replication
- PolyBase
- Always On High Availability
- Management
- Integration Services Catalogs
- SQL Server Agent (Agent XPs disabled)
- XEvent Profiler

SQLQuery7.sql - Wl...rity (admin\_1 (57))\*

```
DBCC CHECKTABLE ('Employees');
DBCC CHECKTABLE ('Products');
DBCC CHECKTABLE ('Sales');
```

99 %

Messages

DBCC results for 'Employees'.  
There are 23 rows in 1 pages for object "Employees".  
DBCC execution completed. If DBCC printed error messages, contact your system administrator.  
Msg 2570, Level 16, State 3, Line 2  
Page (1:24473), slot 91 in object ID 421576540, index ID 1, partition ID 72057594039697408, alloc unit ID 72057594044809216  
(type "In-row data"). Column "Price" value is out of range for data type "float". Update column to a legal value.  
DBCC results for 'Products'.  
There are 503 rows in 4 pages for object "Products".  
CHECKTABLE found 0 allocation errors and 1 consistency errors in table 'Products' (object ID 421576540).  
DBCC execution completed. If DBCC printed error messages, contact your system administrator.  
DBCC results for 'Sales'.  
There are 6715221 rows in 24069 pages for object "Sales".  
DBCC execution completed. If DBCC printed error messages, contact your system administrator.

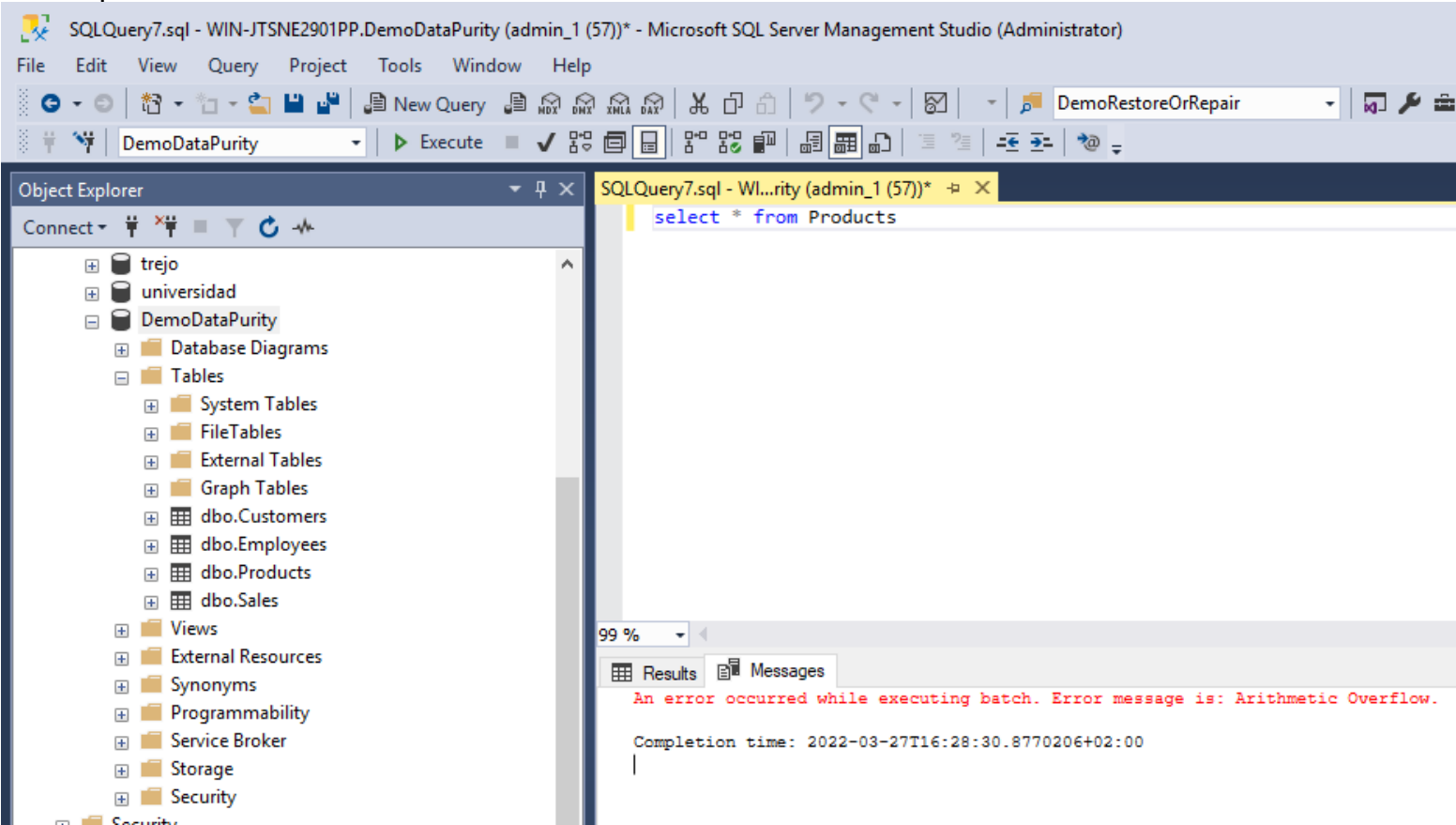
Completion time: 2022-03-27T16:27:57.9657501+02:00

99 %

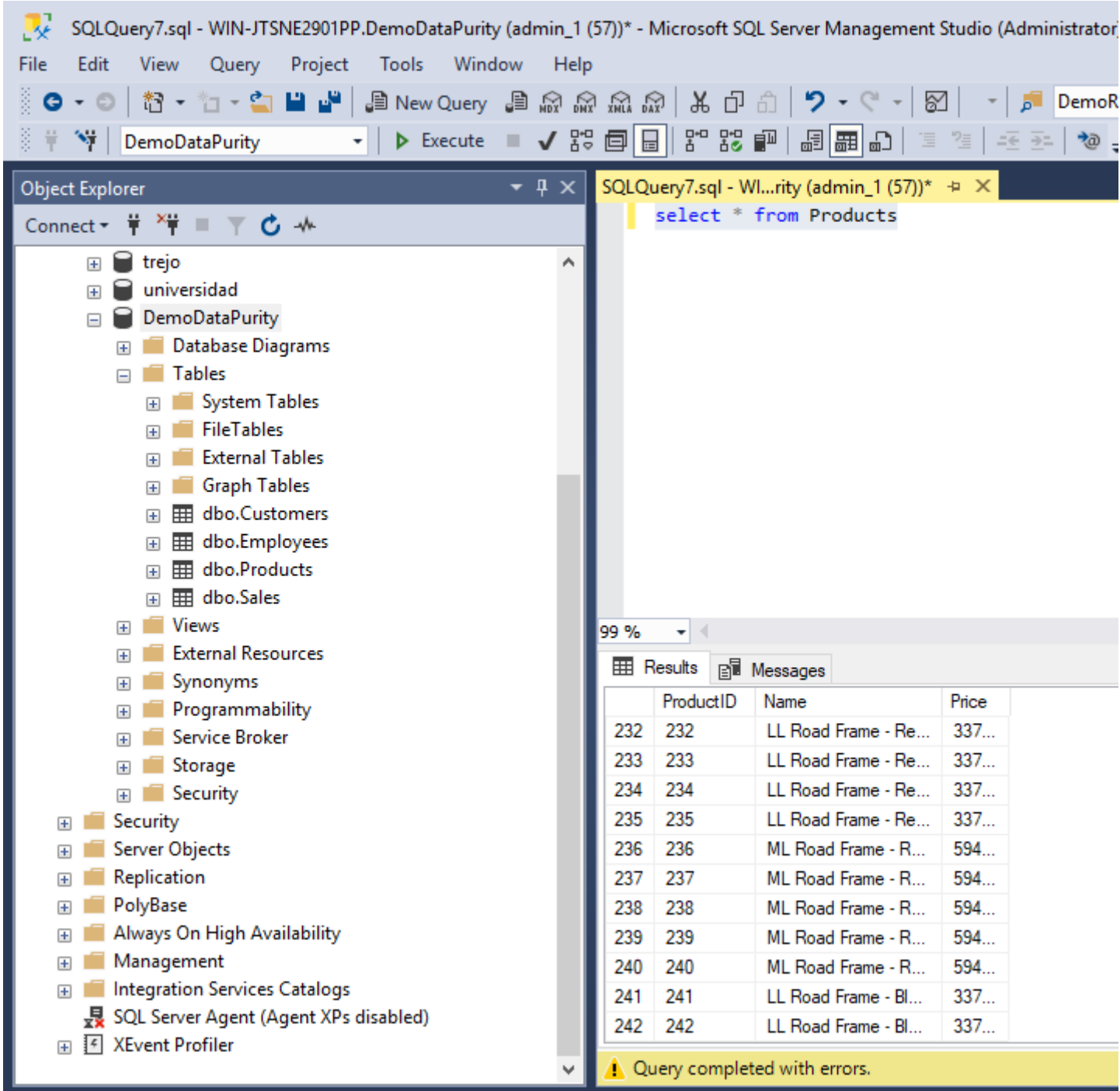
Query completed with errors.

WIN-JTSNE2901PP (14.0 RTM) | admin\_1 (57) | DemoDataPurity | 00:00:05 | 0 rows

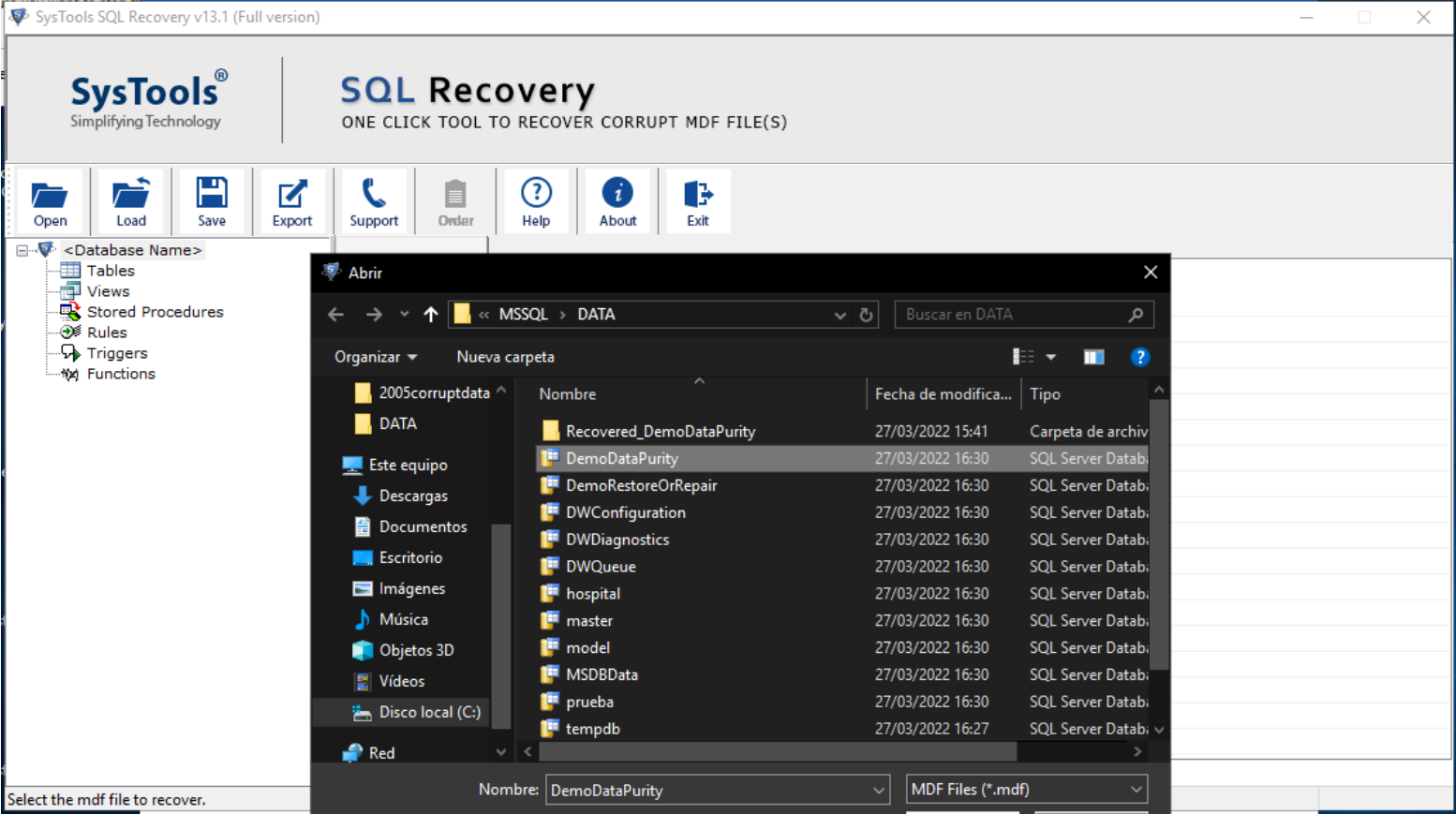
Error que se obtiene al consultar los datos: **Desbordamiento aritmético.**



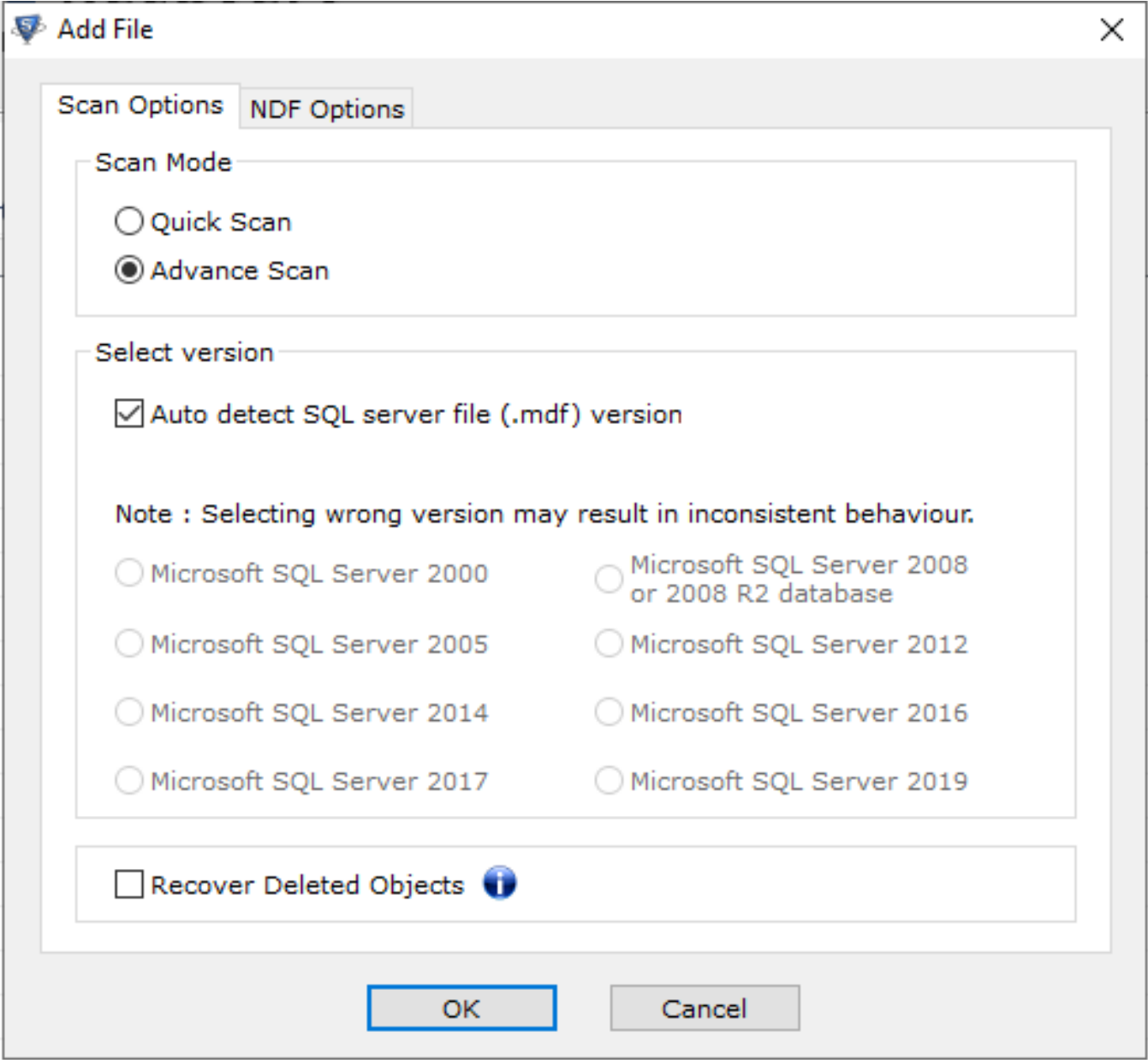
Esta consulta solo nos devuelve 242 resultados antes de mostrarnos el error:



Para resolver este inconveniente, haremos uso de la herramienta **SysTools SQL Recovery**, primero, seleccionamos nuestro origen de datos, vamos a seleccionar el archivo .MDF que se creó al momento de hacer la restauración de la base de datos corrupta, pues este archivo es el que necesitamos reparar:



Haremos un escaneo avanzado del archivo, dejaremos que detecte automáticamente la versión y damos clic en **ok**:



Seleccionamos la tabla Productos y observamos que realmente son más de 500 registros en la tabla, pero que actualmente solo nos muestra hasta la fila 242, recordemos que para llegar hasta este punto debemos detener nuestro servicio de SQL Server y así poder visualizar la información en esta herramienta:

SysTools SQL Recovery v13.1 (Full version)

SysTools®  
Simplifying Technology

SQL Recovery  
ONE CLICK TOOL TO RECOVER CORRUPT MDF FILE(S)

OpenLoadSaveExportSupportOrderHelpAboutExit

DemoDataPurity(SQL Server 2017)

- Tables(4)
  - dbo.Customers
  - dbo.Employees
  - dbo.Products
  - dbo.Sales
- Columns
- Keys
- Indexes
- Views(0)
- Stored Procedures(7)
- Rules(0)
- Triggers(0)
- Functions(1)

ProductID	Name	Price
483	Touring-3000 Blue, 44	742.35000000
484	Touring-3000 Blue, 50	742.35000000
485	Mountain-400-W Silver, 38	769.49000000
486	Mountain-400-W Silver, 40	769.49000000
487	Mountain-400-W Silver, 42	769.49000000
488	Mountain-400-W Silver, 46	769.49000000
489	Mountain-500 Silver, 40	564.99000000
490	Mountain-500 Silver, 42	564.99000000
491	Mountain-500 Silver, 44	564.99000000
492	Mountain-500 Silver, 48	564.99000000
493	Mountain-500 Silver, 52	564.99000000
494	Mountain-500 Black, 40	539.99000000
495	Mountain-500 Black, 42	539.99000000
496	Mountain-500 Black, 44	539.99000000
497	Mountain-500 Black, 48	539.99000000
498	Mountain-500 Black, 52	539.99000000
499	LL Bottom Bracket	53.99000000
500	ML Bottom Bracket	101.24000000

<<<500 on Page 1>>>

Ready

Seguidamente, la herramienta, nos permite guardar la información reparada, nosotros crearemos una nueva base de datos llamada **RecupetacionDemoDataPurity**, asignamos las credenciales a través del usuario admin\_1, marcamos todo lo que se obtuvo del archivo escaneado y finalmente damos clic en **Export**.

SysTools SQL Recovery v13.1 (Full version)

SysTools®  
Simplifying Technology

SQL Recovery  
ONE CLICK TOOL TO RECOVER CORRUPT MDF FILE(S)

OpenLoadSaveExportSupportOrderHelpAboutExit

DemoDataPurity(SQL Server 2017)

- Tables(4)
  - dbo.Customers
  - dbo.Employees
  - dbo.Products
  - dbo.Sales
- Columns
- Keys
- Indexes
- Views(0)
- Stored Procedures(7)
  - sp\_alterdiagram
  - sp\_creatediagram
  - sp\_dropdiagram
  - sp\_helpdiagramdefinition
  - sp\_helpdiagrams
  - sp\_renamediagram
  - sp\_upgraddiagrams
- Rules(0)
- Triggers(0)
- Functions(1)
- fn\_diagramobjects

Export Options

Export To/As

- ☒ SQL Server Database
- ☐ SQL Server Compatible SQL Scripts
- ☐ CSV File Format

Database Authentication

Server Name : WIN-JTSNE2901PPAuthentication : SQL Server Authentication

Login Credentials for SQL Server

User Name : admin\_1Password : .....

Select Destination Database

☒ Create New Database☐ Export To Existing Database

Database Name : RecupetacionDemoDataPurity

Collation Settings

Collation : Latin1\_General\_CI\_AI

Export

☐ With only schema  
(This option will only create schema for the selected tables/views/ procedures)

☒ With Schema & Data  
(This option will export schema as well data for the table)

☐ Export Deleted Objects☐ Export Deleted Records

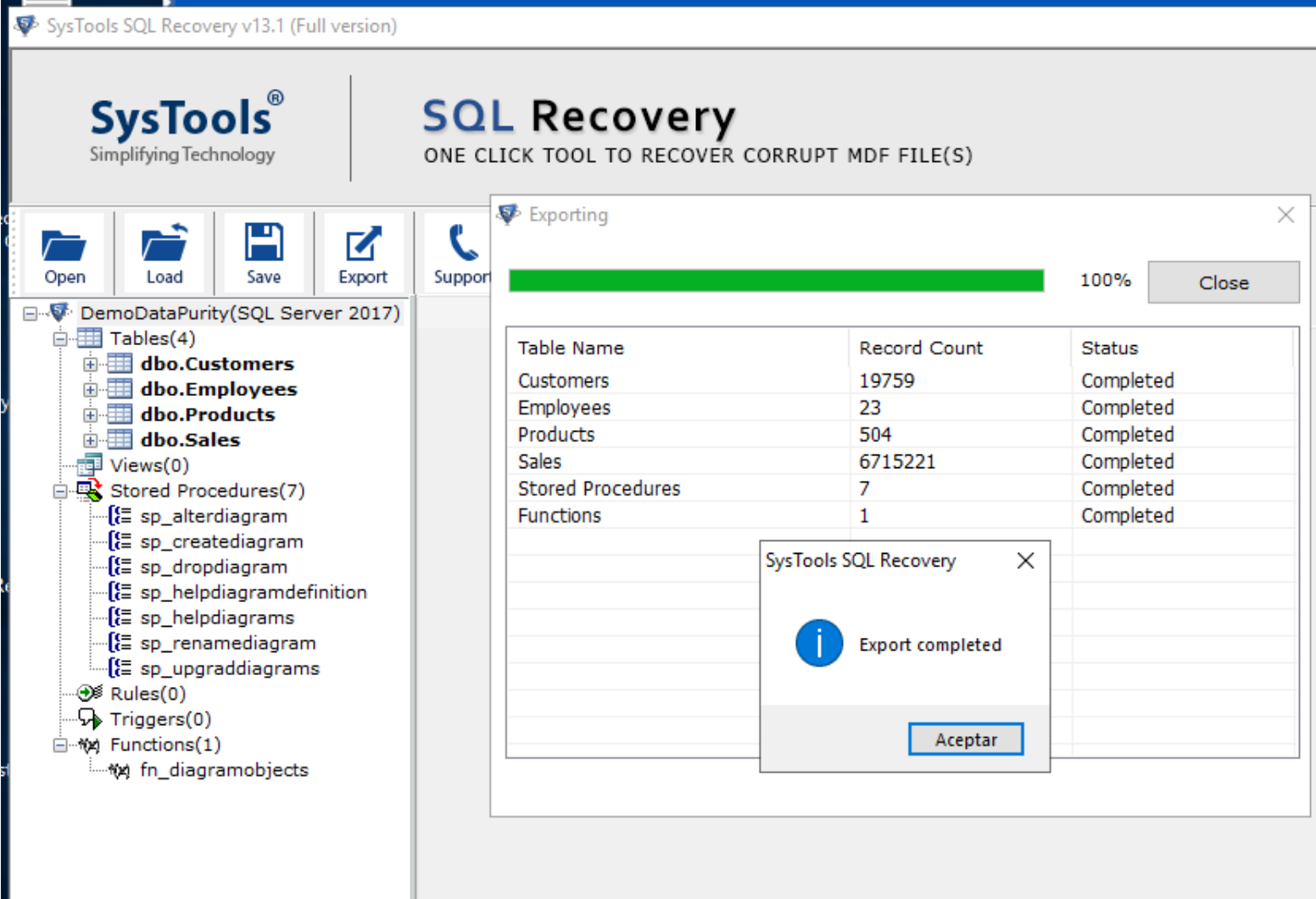
ExportCancel

DemoDataPurity(SQL Server 2017)

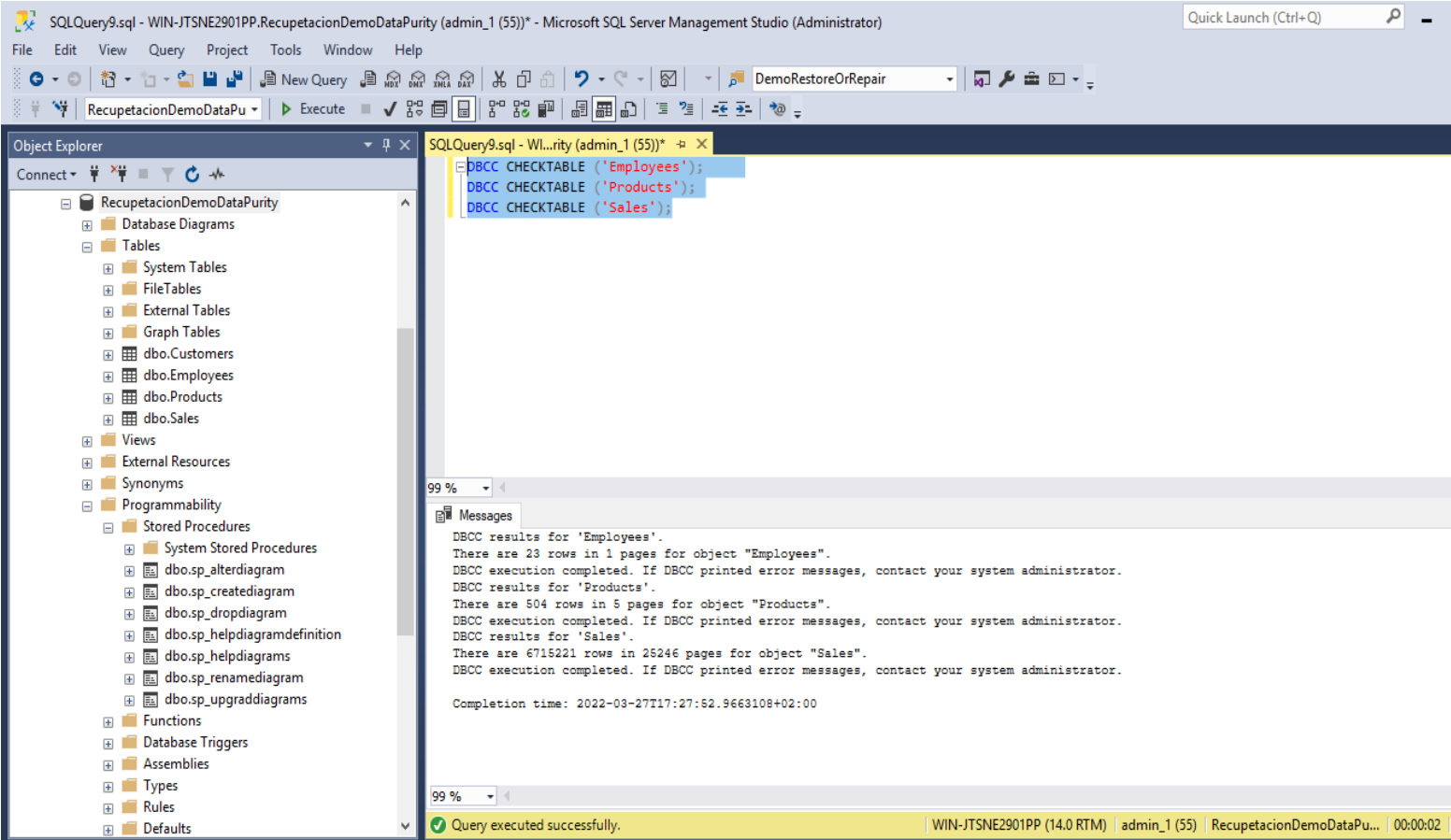
- ☒ TABLES
  - ☒ dbo.Customers
  - ☒ dbo.Employees
  - ☒ dbo.Products
  - ☒ dbo.Sales
- ☒ VIEWS
- ☒ STORED PROCEDURE
  - ☒ sp\_alterdiagram
  - ☒ sp\_creatediagram
  - ☒ sp\_dropdiagram
  - ☒ sp\_helpdiagramdefinition
  - ☒ sp\_helpdiagrams
  - ☒ sp\_renamediagram
  - ☒ sp\_upgraddiagrams



Proceso finalizado, luego de unos minutos, observamos que la información ha sido exportada en su totalidad, las 4 tablas + 7 procedimientos almacenados y una función:



Para asegurarnos que se haya recuperado la información, volvemos a chequear las 3 tablas de la nueva base de datos recuperada y podemos observar que ahora no hay problema alguno con la tabla Products:



Consultamos los registros de la tabla que daba error, y observamos que el valor asignado durante la reparación fue 0:

SQLQuery9.sql - WIN-JTSNE2901PP.RecupetacionDemoDataPurity (admin\_1 (55))\* - Microsoft SQL Server Management Studio (Administrator)

Quick Launch (Ctrl+Q)

File Edit View Query Project Tools Window Help

New Query MDX DMX XMLA DAX

RecupetacionDemoDataPu Execute

Object Explorer

Connect

RecupetacionDemoDataPurity

Database Diagrams

Tables

System Tables

FileTables

External Tables

Graph Tables

dbo.Customers

dbo.Employees

dbo.Products

dbo.Sales

Views

External Resources

Synonyms

Programmability

Stored Procedures

System Stored Procedures

dbo.sp\_alterdiagram

dbo.sp\_creatediagram

dbo.sp\_dropdiagram

dbo.sp\_helpdiagramdefinition

dbo.sp\_helpdiagrams

dbo.sp\_renamediagram

dbo.sp\_upgraddiagrams

Functions

Database Triggers

Assemblies

Types

Rules

Defaults

SQLQuery9.sql - WL...rity (admin\_1 (55))\*

select \* from Products

99 %

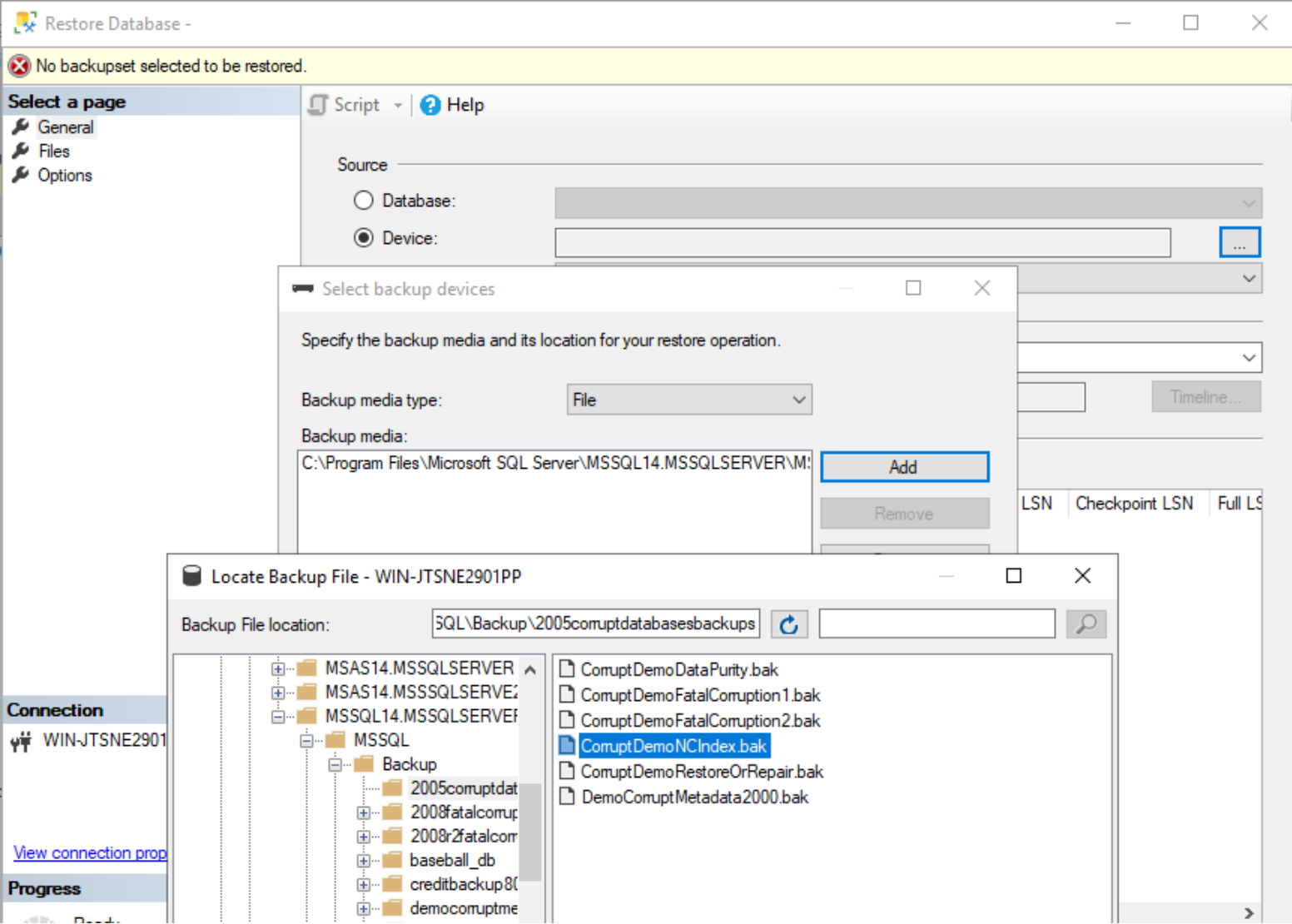
Results Messages

	ProductID	Name	Price
238	238	ML Road Frame - Red, 52	594,83
239	239	ML Road Frame - Red, 58	594,83
240	240	ML Road Frame - Red, 60	594,83
241	241	LL Road Frame - Black, 44	337,22
242	242	LL Road Frame - Black, 48	337,22
243	243	LL Road Frame - Black, 52	0
244	244	HL Mountain Frame - Silver, 42	1364,5
245	245	HL Mountain Frame - Silver, 44	1364,5
246	246	HL Mountain Frame - Silver, 48	1364,5
247	247	HL Mountain Frame - Silver, 46	1364,5
248	248	HL Mountain Frame - Black, 42	1349,6

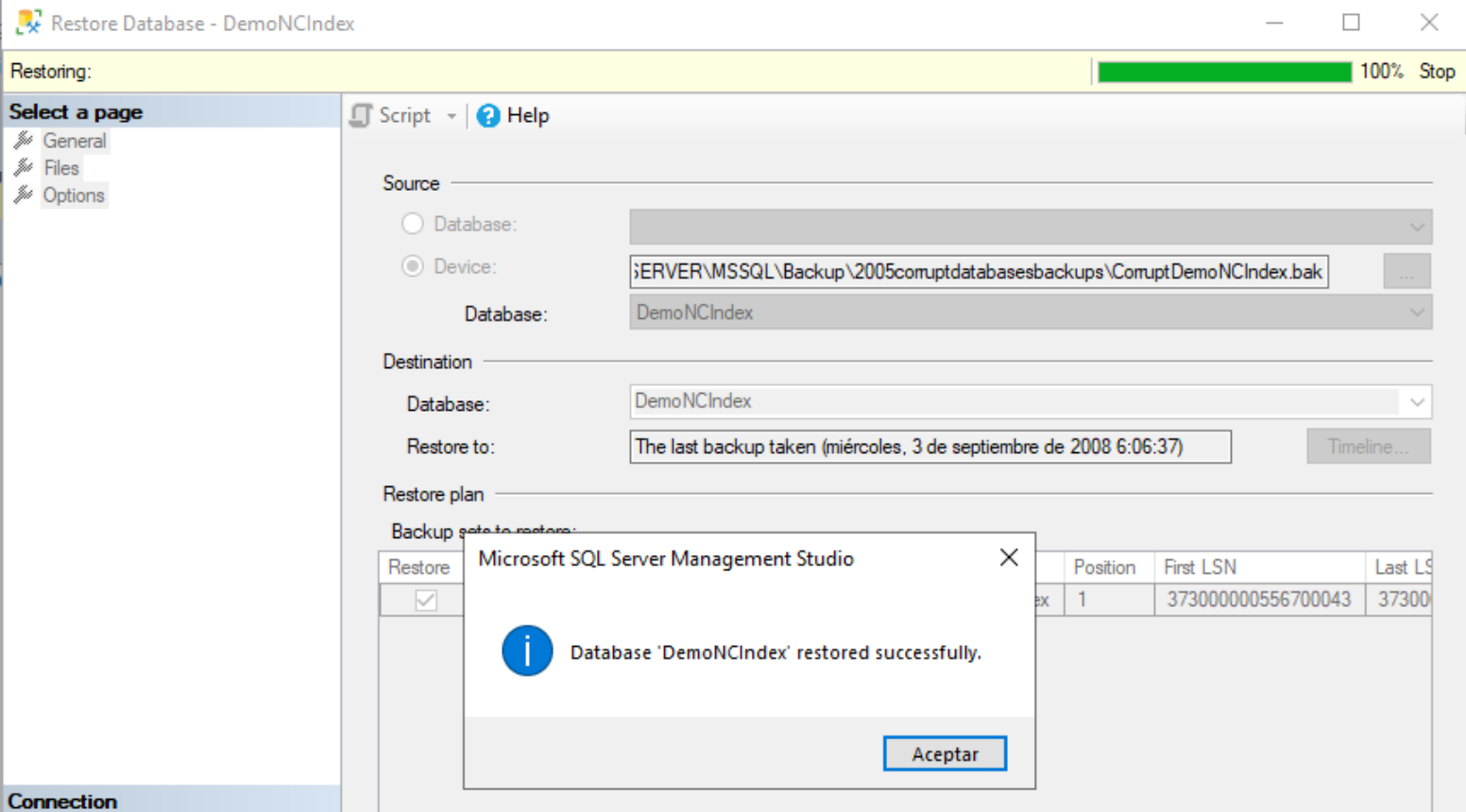
Query executed successfully. WIN-JTSNE2901PP (14.0 RTM) admin\_1 (55) RecupetacionDemoDataPu... 00:00:00 504 rows

Proceso #4; reparación de una base de datos con errores en índices

Restauramos la base de datos llamada **CorruptDemoNCIndex**:



La base de datos se ha restaurado sin errores:



Consultamos la información de los índices con el siguiente comando: DBCC CHECKDB (N'DemoNCIndex') WITH NO\_INFOMSGS, ALL\_ERRORMSG; GO

Obtenemos una cantidad bastante considerable de inconsistencias (26) en los índices la base de datos:

The screenshot displays the Microsoft SQL Server Management Studio (SSMS) interface. The title bar indicates the connection to 'WIN-JTSNE2901PP.DemoNCIndex (admin\_1 (51))'.

**Object Explorer:** The left pane shows the database structure. Under 'Databases', 'DemoNCIndex' is selected. Within 'DemoNCIndex', the 'Indexes' folder is expanded, showing 'CustomerName (Non-Unique, Non-Clustered)' and 'CustomerPK (Clustered)'.

**SQL Query Window:** The central pane shows the following T-SQL command:  

```
DBCC CHECKDB (N'DemoNCIndex')  
WITH NO_INFOMSGS, ALL_ERRORMSG;  
GO
```

**Messages Window:** The bottom pane displays the output of the command. It shows several error messages (Msg 8952, Level 16, State 1, Line 2) indicating index inconsistencies. The messages are as follows:  

- Table error: table 'Customers' (ID 453576654). Index row in index 'CustomerName' (ID 2) does not match any data row. Possible extra or invalid Index row (1:24481:2) with values (LastName = 'Alonso' and CustomerID = 2590) pointing to the data row identified by (CustomerID = 2590).
- Table error: table 'Customers' (ID 453576654). Index row in index 'CustomerName' (ID 2) does not match any data row. Possible extra or invalid Index row (1:24481:50) with values (LastName = 'Alonso' and CustomerID = 12318) pointing to the data row identified by (CustomerID = 12318).
- Table error: table 'Customers' (ID 453576654). Index row in index 'CustomerName' (ID 2) does not match any data row. Possible extra or invalid Index row (1:24481:60) with values (LastName = 'Alonso' and CustomerID = 15390) pointing to the data row identified by (CustomerID = 15390).
- Table error: table 'Customers' (ID 453576654). Index row in index 'CustomerName' (ID 2) does not match any data row. Possible extra or invalid Index row (1:24482:2) with values (LastName = 'Andersen' and CustomerID = 15646) pointing to the data row identified by (CustomerID = 15646).
- Table error: table 'Customers' (ID 453576654). Index row in index 'CustomerName' (ID 2) does not match any data row. Possible extra or invalid Index row (1:24482:16) with values (LastName = 'Andersen' and CustomerID = 18718) pointing to the data row identified by (CustomerID = 18718).
- Table error: table 'Customers' (ID 453576654). Index row in index 'CustomerName' (ID 2) does not match any data row. Possible extra or invalid Index row (1:24482:127) with values (LastName = 'Arthur' and CustomerID = 9758) pointing to the data row identified by (CustomerID = 9758).

The summary of the command execution is:  
CHECKDB found 0 allocation errors and 26 consistency errors in table 'Customers' (object ID 453576654).  
CHECKDB found 0 allocation errors and 26 consistency errors in database 'DemoNCIndex'.  
repair\_rebuild is the minimum repair level for the errors found by DBCC CHECKDB (DemoNCIndex).

The completion time is: 2022-03-27T18:06:27.2550657+02:00.

**Status Bar:** The bottom status bar indicates 'Query completed with errors.' and shows the connection details: 'WIN-JTSNE2901PP (14.0 RTM) | admin\_1 (51) | DemoNCIndex | 00:00:05 | 0 rows'.

Realizamos la misma consulta, pero esta vez para ver los errores de una manera más detallada; agregamos la línea de código **TABLERESULTS**:

SQLQuery20.sql - WIN-JTSNE2901PP.DemoNCIndex (admin\_1 (51))\* - Microsoft SQL Server Management Studio (Administrator)

File Edit View Query Project Tools Window Help

New Query New Query From Existing Files New Query From Existing Files New Query From Existing Files

DemoRestoreOrRepair

Execute

Object Explorer

Connect

WIN-JTSNE2901PP (SQL Server 14.0.1000.169 - admin\_1)

Databases

System Databases

Database Snapshots

DemoNCIndex

Database Diagrams

Tables

System Tables

FileTables

External Tables

Graph Tables

dbo.Customers

Columns

Keys

Constraints

Triggers

Indexes

CustomerName (Non-Unique, Non-Clustered)

CustomerPK (Clustered)

Statistics

dbo.Employees

dbo.Products

dbo.Sales

Views

External Resources

Synonyms

Programmability

Service Broker

Storage

SQLQuery20.sql - W...dex (admin\_1 (51))\*

DBCC CHECKDB (N'DemoNCIndex')  
WITH NO\_INFOMSGS, ALL\_ERRORMSG, TABLERESULTS;  
GO

99 %

Results Messages

	Error	Level	State	Message Text
1	8951	16	1	Table error: table 'Customers' (ID 453576654). Data row does not have a matching index row in the index 'CustomerName' (ID 2). Possible missing or invalid keys for the
2	8955	16	1	Data row (1:45:28) identified by (CustomerID = 29) with index values 'LastName = 'Adams' and CustomerID = 29'.
3	8951	16	1	Table error: table 'Customers' (ID 453576654). Data row does not have a matching index row in the index 'CustomerName' (ID 2). Possible missing or invalid keys for the
4	8955	16	1	Data row (1:180:164) identified by (CustomerID = 2118) with index values 'LastName = 'Adams' and CustomerID = 2118'.
5	8951	16	1	Table error: table 'Customers' (ID 453576654). Data row does not have a matching index row in the index 'CustomerName' (ID 2). Possible missing or invalid keys for the
6	8955	16	1	Data row (1:184:3) identified by (CustomerID = 2678) with index values 'LastName = 'Alonso' and CustomerID = 2678'.
7	8951	16	1	Table error: table 'Customers' (ID 453576654). Data row does not have a matching index row in the index 'CustomerName' (ID 2). Possible missing or invalid keys for the
8	8955	16	1	Data row (1:206:90) identified by (CustomerID = 6698) with index values 'LastName = 'Adams' and CustomerID = 6698'.
9	8951	16	1	Table error: table 'Customers' (ID 453576654). Data row does not have a matching index row in the index 'CustomerName' (ID 2). Possible missing or invalid keys for the
10	8955	16	1	Data row (1:215:19) identified by (CustomerID = 8218) with index values 'LastName = 'Adams' and CustomerID = 8218'.
11	8951	16	1	Table error: table 'Customers' (ID 453576654). Data row does not have a matching index row in the index 'CustomerName' (ID 2). Possible missing or invalid keys for the
12	8955	16	1	Data row (1:224:32) identified by (CustomerID = 9825) with index values 'LastName = 'Arthur' and CustomerID = 9825'.
13	8951	16	1	Table error: table 'Customers' (ID 453576654). Data row does not have a matching index row in the index 'CustomerName' (ID 2). Possible missing or invalid keys for the
14	8955	16	1	Data row (1:232:176) identified by (CustomerID = 11418) with index values 'LastName = 'Adams' and CustomerID = 11418'.
15	8951	16	1	Table error: table 'Customers' (ID 453576654). Data row does not have a matching index row in the index 'CustomerName' (ID 2). Possible missing or invalid keys for the

Query executed successfully. WIN-JTSNE2901PP (14.0 RTM) admin\_1 (51) DemoNCIndex 00:00:05 54 rows



Ejecutamos la instrucción **DBCC** para reparar la base de datos, pero adicional a eso agregamos el parámetro **REPAIR\_REBUILD**, y mostramos los resultados en una tabla, podemos observar que cada error se ha solucionado:

SQLQuery20.sql - WIN-JTSNE2901PP.DemoNCIndex (admin\_1 (51))\* - Microsoft SQL Server Management Studio (Administrator)

File Edit View Query Project Tools Window Help

SQLQuery20.sql - WIN-JTSNE2901PP.DemoNCIndex (admin\_1 (51))\*

Execute

Object Explorer

WIN-JTSNE2901PP (SQL Server 14.0.1000.169 - admin\_1)

Databases

DemoNCIndex

Tables

dbo.Customers

Indexes

CustomerName (Non-Unique, Non-Clustered)

CustomerPK (Clustered)

SQLQuery20.sql - W...dex (admin\_1 (51))\*

DBCC CHECKDB (N'DemoNCIndex', REPAIR\_REBUILD)

WITH NO\_INFOMSGS, ALL\_ERRORMSG, TABLERESULTS;

GO

99 %

Results

Messages

	Error	Level	State	MessageText
1	5248	10	1	Repair: Successfully deleted row in index "dbo.Customers, CustomerName" in database "DemoNCIndex".
2	5248	10	1	Repair: Successfully deleted row in index "dbo.Customers, CustomerName" in database "DemoNCIndex".
3	5248	10	1	Repair: Successfully deleted row in index "dbo.Customers, CustomerName" in database "DemoNCIndex".
4	5248	10	1	Repair: Successfully deleted row in index "dbo.Customers, CustomerName" in database "DemoNCIndex".
5	5248	10	1	Repair: Successfully deleted row in index "dbo.Customers, CustomerName" in database "DemoNCIndex".
6	5248	10	1	Repair: Successfully deleted row in index "dbo.Customers, CustomerName" in database "DemoNCIndex".
7	5248	10	1	Repair: Successfully deleted row in index "dbo.Customers, CustomerName" in database "DemoNCIndex".
8	5248	10	1	Repair: Successfully deleted row in index "dbo.Customers, CustomerName" in database "DemoNCIndex".
9	5248	10	1	Repair: Successfully deleted row in index "dbo.Customers, CustomerName" in database "DemoNCIndex".
10	5248	10	1	Repair: Successfully deleted row in index "dbo.Customers, CustomerName" in database "DemoNCIndex".
11	5248	10	1	Repair: Successfully deleted row in index "dbo.Customers, CustomerName" in database "DemoNCIndex".
12	5248	10	1	Repair: Successfully deleted row in index "dbo.Customers, CustomerName" in database "DemoNCIndex".
13	5248	10	1	Repair: Successfully deleted row in index "dbo.Customers, CustomerName" in database "DemoNCIndex".
14	5248	10	1	Repair: Successfully inserted row in index "dbo.Customers, CustomerName" in database "DemoNCIndex".
15	5248	10	1	Repair: Successfully inserted row in index "dbo.Customers, CustomerName" in database "DemoNCIndex".
16	5248	10	1	Repair: Successfully inserted row in index "dbo.Customers, CustomerName" in database "DemoNCIndex".
17	5248	10	1	Repair: Successfully inserted row in index "dbo.Customers, CustomerName" in database "DemoNCIndex".
18	5248	10	1	Repair: Successfully inserted row in index "dbo.Customers, CustomerName" in database "DemoNCIndex".
19	5248	10	1	Repair: Successfully inserted row in index "dbo.Customers, CustomerName" in database "DemoNCIndex".
20	5248	10	1	Repair: Successfully inserted row in index "dbo.Customers, CustomerName" in database "DemoNCIndex".
21	5248	10	1	Repair: Successfully inserted row in index "dbo.Customers, CustomerName" in database "DemoNCIndex".

Query executed successfully.

WIN-JTSNE2901PP (14.0 RTM) | admin\_1 (51)

Consultamos el listado de índices para la base de datos, y obtenemos como resultado 2, la llave primaria y un segundo que se basa en el apellido del Customer.

SQLQuery20.sql - WIN-JTSNE2901PP.DemoNCIndex (admin\_1 (51))\* - Microsoft SQL Server Management Studio (Administrator)

File Edit View Query Project Tools Window Help

SQLQuery20.sql - W...dex (admin\_1 (51))\*

-- manually and keep the database online. Try an  
-- online rebuild...  
USE DemoNCIndex  
GO  
EXEC sp\_HelpIndex N'Customers';  
GO  
  
ALTER INDEX [CustomerName] ON [Customers] REBUILD

99 %

Results Messages

	index_name	index_description	index_keys
1	CustomerName	nonclustered located on PRIMARY	LastName
2	CustomerPK	clustered, unique, primary key located on PRIMARY	CustomerID

Object Explorer

Connect

WIN-JTSNE2901PP (SQL Server 14.0.1000.169 - admin\_1)

Databases

System Databases

Database Snapshots

DemoNCIndex

Database Diagrams

Tables

System Tables

FileTables

External Tables

Graph Tables

dbo.Customers

Luego de haber reparado los errores, es necesario que reconstruyamos el índice que basa en el apellido del Customer de la siguiente manera:

SQLQuery20.sql - WIN-JTSNE2901PP.DemoNCIndex (admin\_1 (51))\* - Microsoft SQL Server Management Studio (Administrator)

File Edit View Query Project Tools Window Help

SQLQuery20.sql - W...dex (admin\_1 (51))\*

ALTER INDEX CustomerName ON Customers REBUILD  
WITH (ONLINE = ON);  
GO

99 %

Messages

Commands completed successfully.  
  
Completion time: 2022-03-27T18:11:59.6432833+02:00

Object Explorer

Connect

WIN-JTSNE2901PP (SQL Server 14.0.1000.169 - admin\_1)

Databases

System Databases

Database Snapshots

DemoNCIndex

Database Diagrams

Tables

System Tables

FileTables

External Tables

Graph Tables

Seguidamente volvemos a chequear la base de datos y ahora, las 26 inconsistencias del índice han sido reparadas:

SQLQuery20.sql - WIN-JTSNE2901PP.DemoNCIndex (admin\_1 (51))\* - Microsoft SQL Server Management Studio (Administrator)

File Edit View Query Project Tools Window Help

SQLQuery20.sql - W...dex (admin\_1 (51))\*

DBCC CHECKDB (N'DemoNCIndex')  
WITH NO\_INFOMSGS, ALL\_ERRORMSGs;  
GO

99 %

Messages

Commands completed successfully.  
  
Completion time: 2022-03-27T18:12:25.0166962+02:00

Object Explorer

Connect

WIN-JTSNE2901PP (SQL Server 14.0.1000.169 - admin\_1)

Databases

System Databases

Database Snapshots

DemoNCIndex

Database Diagrams

Tables

System Tables

FileTables

External Tables

Graph Tables

Habilitamos la base de datos para conexión multi usuario y seguidamente consultamos el estado de la base de datos, y el STATUS es **ONLINE**:

The screenshot displays the Microsoft SQL Server Enterprise Manager interface. On the left, the 'Object Explorer' pane shows the server hierarchy for 'WIN-JTSNE2901PP (SQL Server 14.0.1000.169 - admin\_1)'. The 'Databases' folder is expanded, listing various databases including 'DemoNCIndex', 'DemoRestoreOrRepair', 'DWConfiguration', 'DWQueue', 'hospital', 'prueba', 'RecupetacionDemoDataPurity', 'trejo', and 'universidad'. The 'DemoNCIndex' database is highlighted. The main window shows a SQL query window with the following code:

```
ALTER DATABASE DemoNCIndex SET MULTI_USER;  
GO  
  
SELECT DATABASEPROPERTYEX (N'DemoNCIndex', N'STATUS') AS N'Status';  
GO
```

The 'Results' pane at the bottom shows the output of the query:

Status
1 ONLINE

A status bar at the bottom indicates 'Query executed successfully.'

De esta manera concluimos la práctica en la cual hicimos uso de herramientas para la recuperación, reparación y escaneo de bases de datos, tanto archivos con extensión .bak como .mdf, además de haber recuperado contraseña para usuario administrador y haber resuelto la corrupción presente en los archivos.