



**GOBIERNO DE
MÉXICO**

EDUCACIÓN
SECRETARÍA DE EDUCACIÓN PÚBLICA



**TECNOLOGICO
NACIONAL DE MÉXICO**



TECNOLOGICO NACIONAL DE MEXICO

INSTITUTO TECNOLOGICO DE CIUDAD MADERO

Carrera: Ingeniería en Sistemas Computacionales.

Materia: ADMON. B. DATOS

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Numero de control: 20070601

1. Creación de la base de datos HospitalNOM024

Se ejecutaron los comandos para crear la base de datos HospitalNOM024 y establecer el contexto sobre ella.

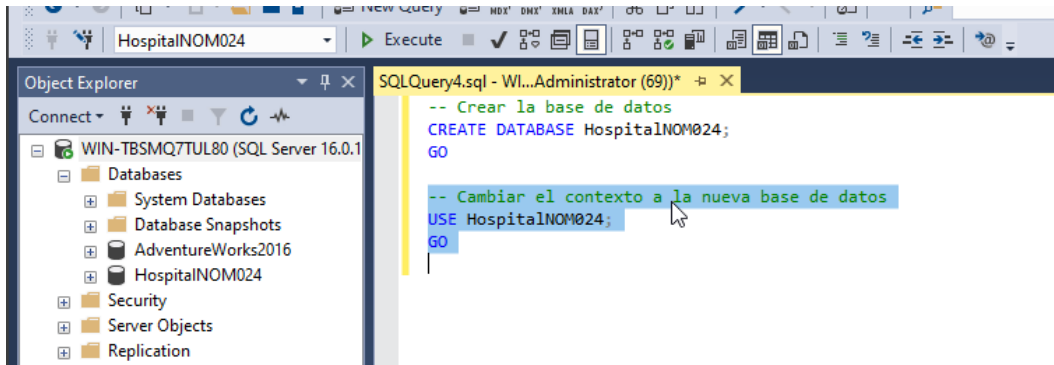
```
CREATE DATABASE HospitalNOM024;  
GO  
-- Cambiar el contexto a la nueva base de datos  
USE HospitalNOM024;  
GO
```

%

Messages

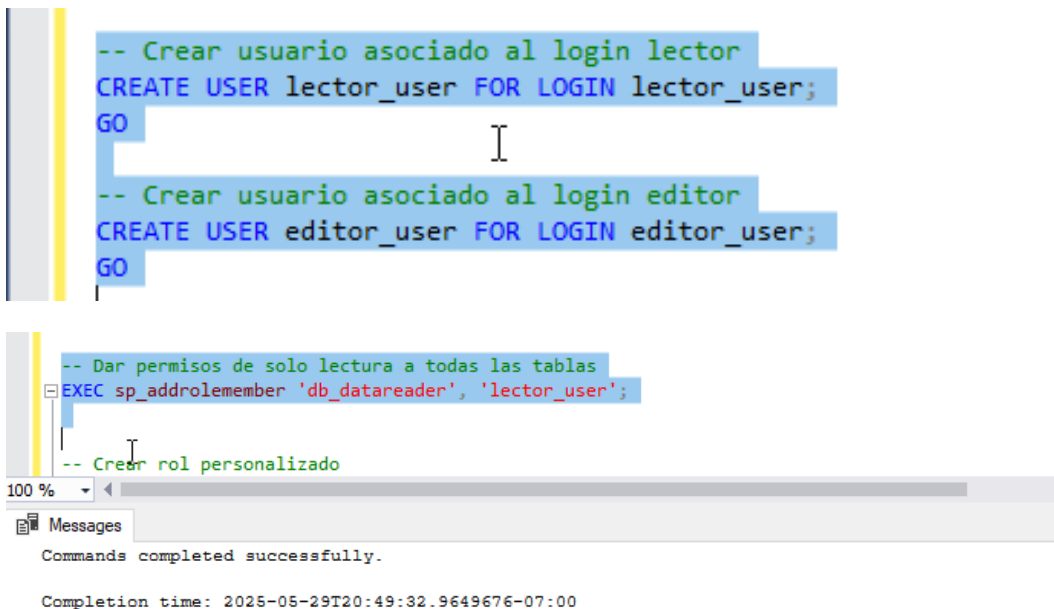
Commands completed successfully.

Completion time: 2025-05-29T20:48:04.8549784-07:00



2. Creación de usuarios y asignación de roles

Se crearon los usuarios lector_user y editor_user, y se asignaron roles personalizados con permisos específicos.



```

CREATE TABLE Pacientes (
    id_paciente INT PRIMARY KEY IDENTITY(1,1),
    nombre NVARCHAR(100) NOT NULL,
    fecha_nacimiento DATE NOT NULL,
    sexo CHAR(1) CHECK (sexo IN ('M', 'F')) NOT NULL,
    curp CHAR(18),
    direccion NVARCHAR(255),
    telefono NVARCHAR(15),
    email NVARCHAR(100),
    fecha_registro DATETIME DEFAULT GETDATE(),
    deleted BIT NOT NULL DEFAULT 0
);

```

Messages

Commands completed successfully.

Completion time: 2025-05-29T20:51:04.4495137-07:00

```

-- Dar permisos select sobre tabla Pacientes
GRANT SELECT ON Pacientes TO SoloLecturaPacientes;
GO

-- Asignar ese rol al usuario lector_user (además de db_datareader
EXEC sp_addrolemember 'SoloLecturaPacientes', 'lector_user';
GO

```

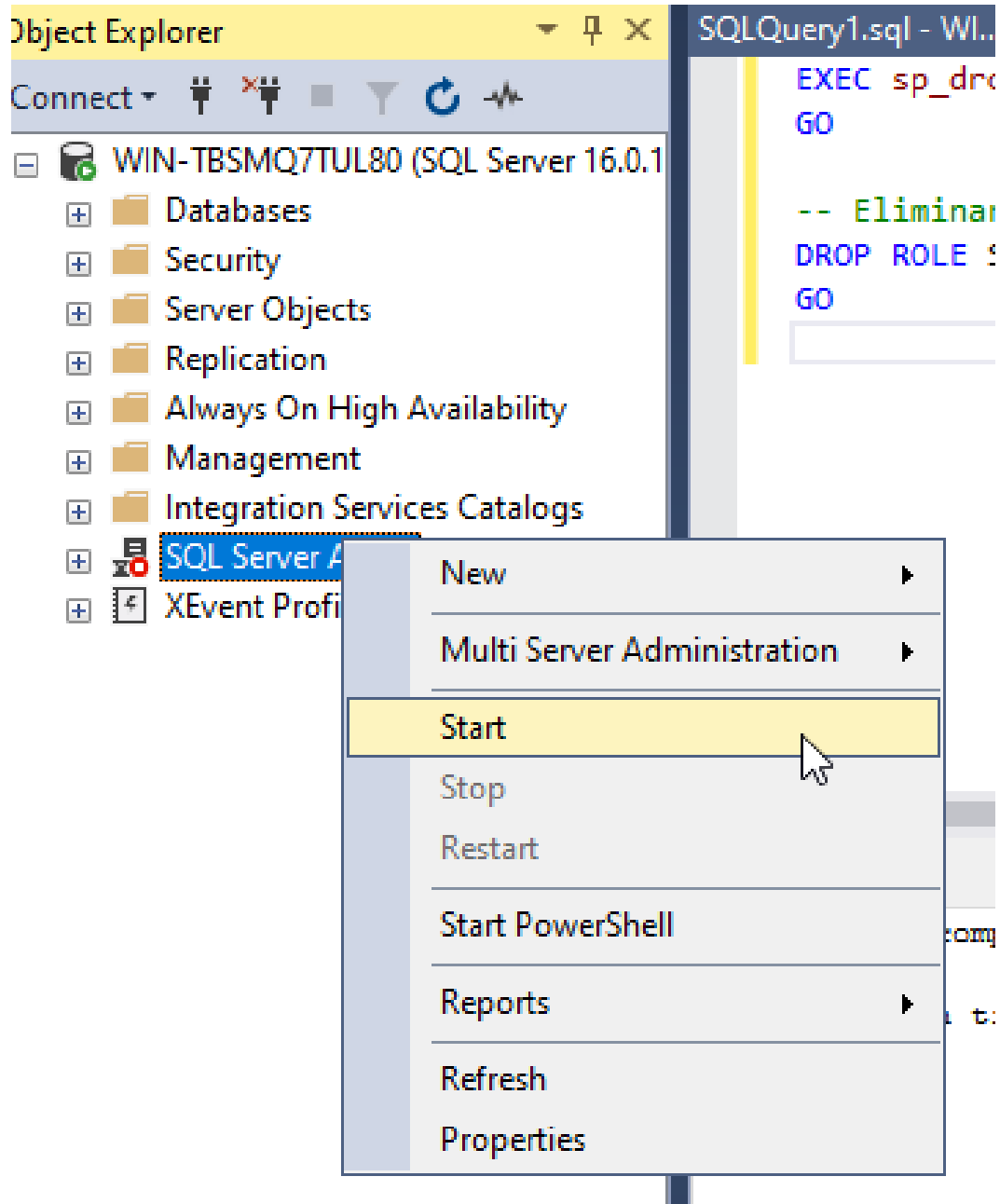
Messages

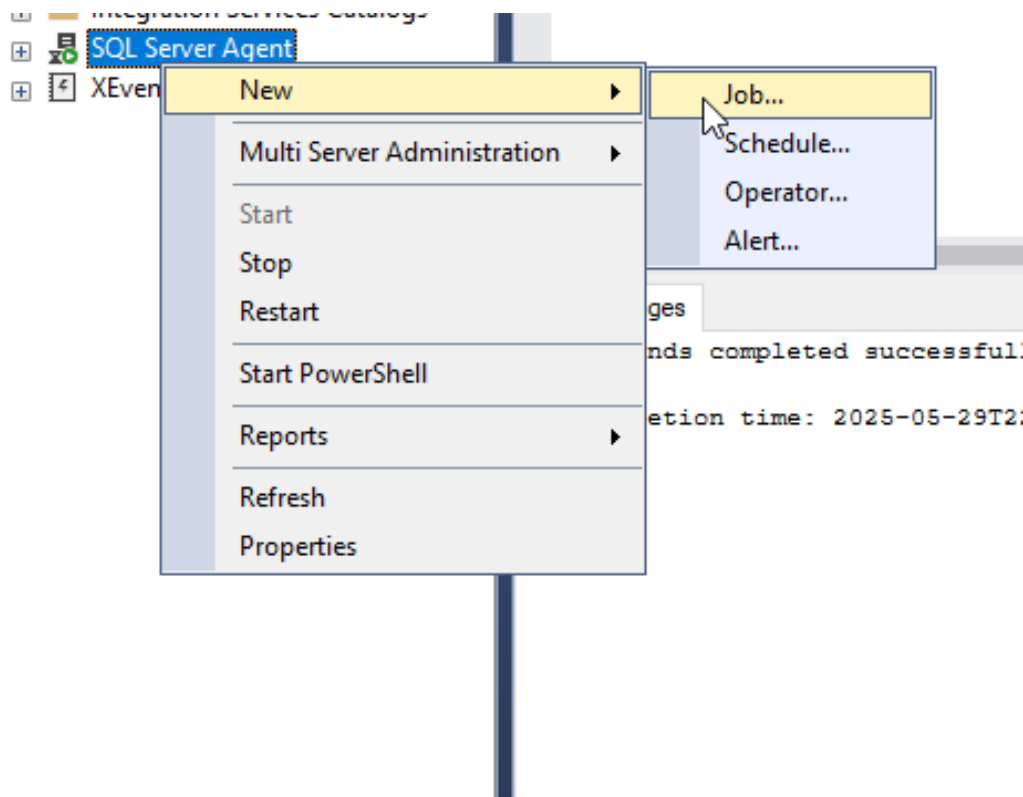
Commands completed successfully.

Completion time: 2025-05-29T20:51:18.6835462-07:00

3. Programación de Job de Respaldo

Se activó SQL Server Agent, se creó un Job que realiza un respaldo completo de la base HospitalNOM024 y se programó su ejecución diaria.





Select a page

- General
- Steps
- Schedules
- Alerts
- Notifications
- Targets

Script ? Help

Name: Backup_HospitalNOM024

Owner: WIN-TBSMQ7TUL80\Administrator

Category: [Uncategorized (Local)]

Description:

Connection

Server: WIN-TBSMQ7TUL80

Connection:

☒ Enabled

New Job Step

Select a page

- General
- Advanced

Script ? Help

Step name: BackupStep

Type: Transact-SQL script (T-SQL)

Run as:

Database: master

Command:

```
BACKUP DATABASE HospitalNOM024  
TO DISK = 'C:\Backups\HospitalNOM024.bak'  
WITH INIT, NAME = 'Backup Completo HospitalNOM024';
```

Open... Select All Copy Paste Parse

Previous Next

OK Cancel

Connection

Server: WIN-TBSMQ7TUL80

Connection: WIN-TBSMQ7TUL80\Administrato

[View connection properties](#)

Progress

Ready

New Job Schedule

Name:

Diario

Jobs in Schedule

Schedule type:

Recurring

☒ Enabled

One-time occurrence

Date:

29/05/2025

Time:

10:43:27 p. m.

Frequency

Occurs:

Daily

Recurrs every:

1

day(s)

Daily frequency

☒ Occurs once at:

12:00:00 a. m.

☐ Occurs every:

1

hour(s)

Starting at:

12:00:00 a. m.

Ending at:

11:59:59 p. m.

Duration

Start date:

29/05/2025

☐ End date:

29/05/2025

☒ No end date:

Summary

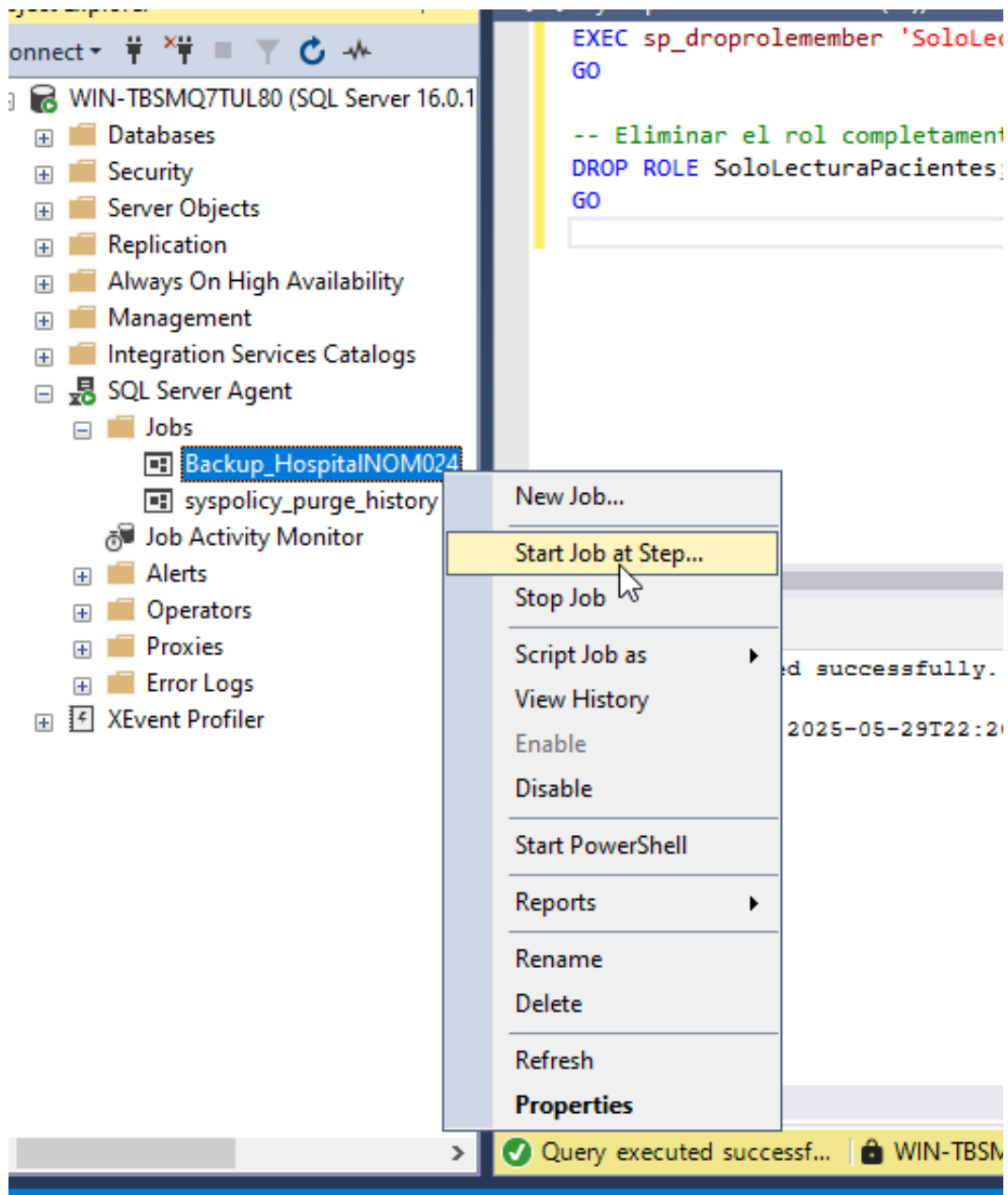
Description:

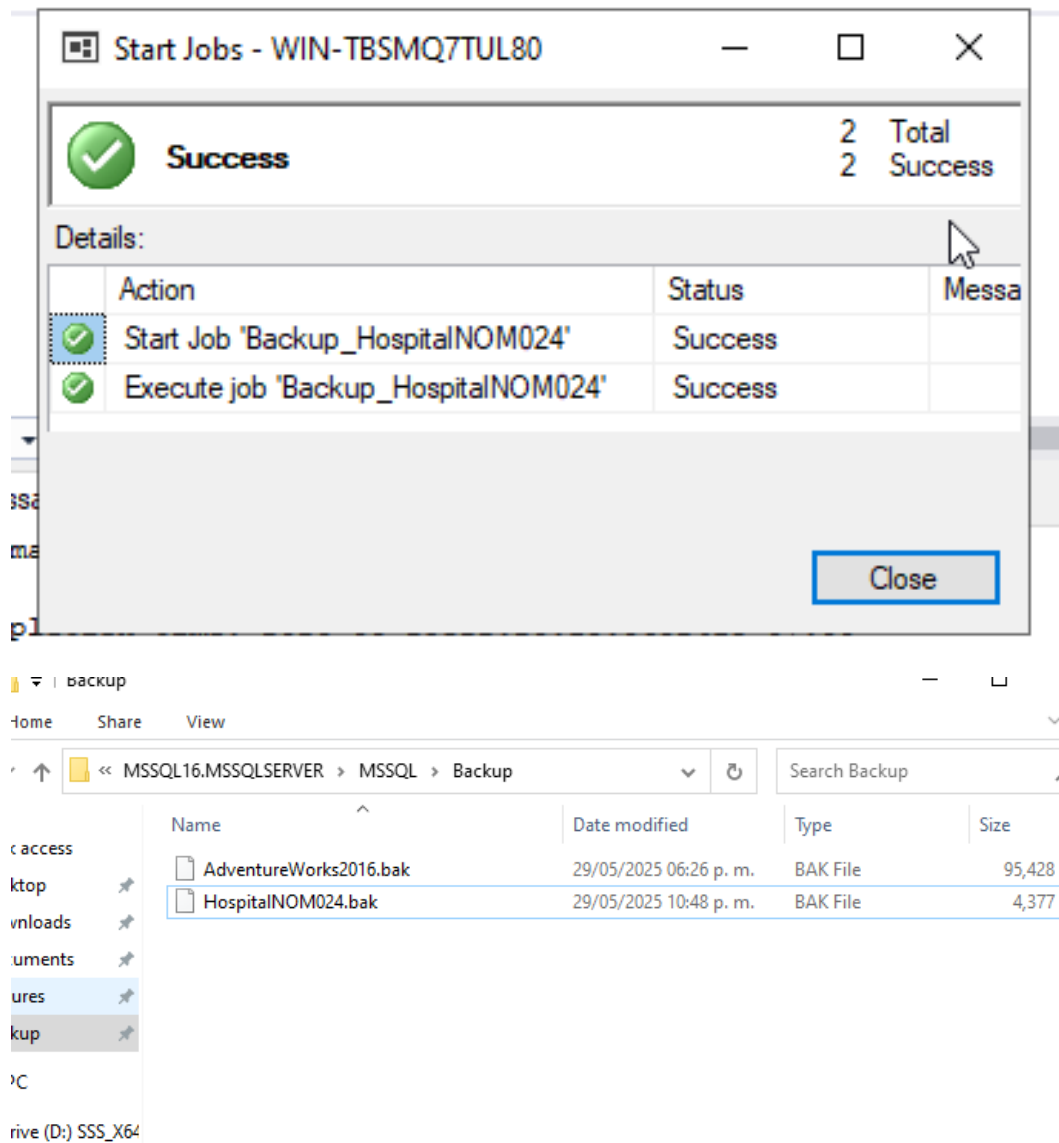
Occurs every day at 12:00:00 a. m... Schedule will be used starting on 29/05/2025.

OK

Cancel

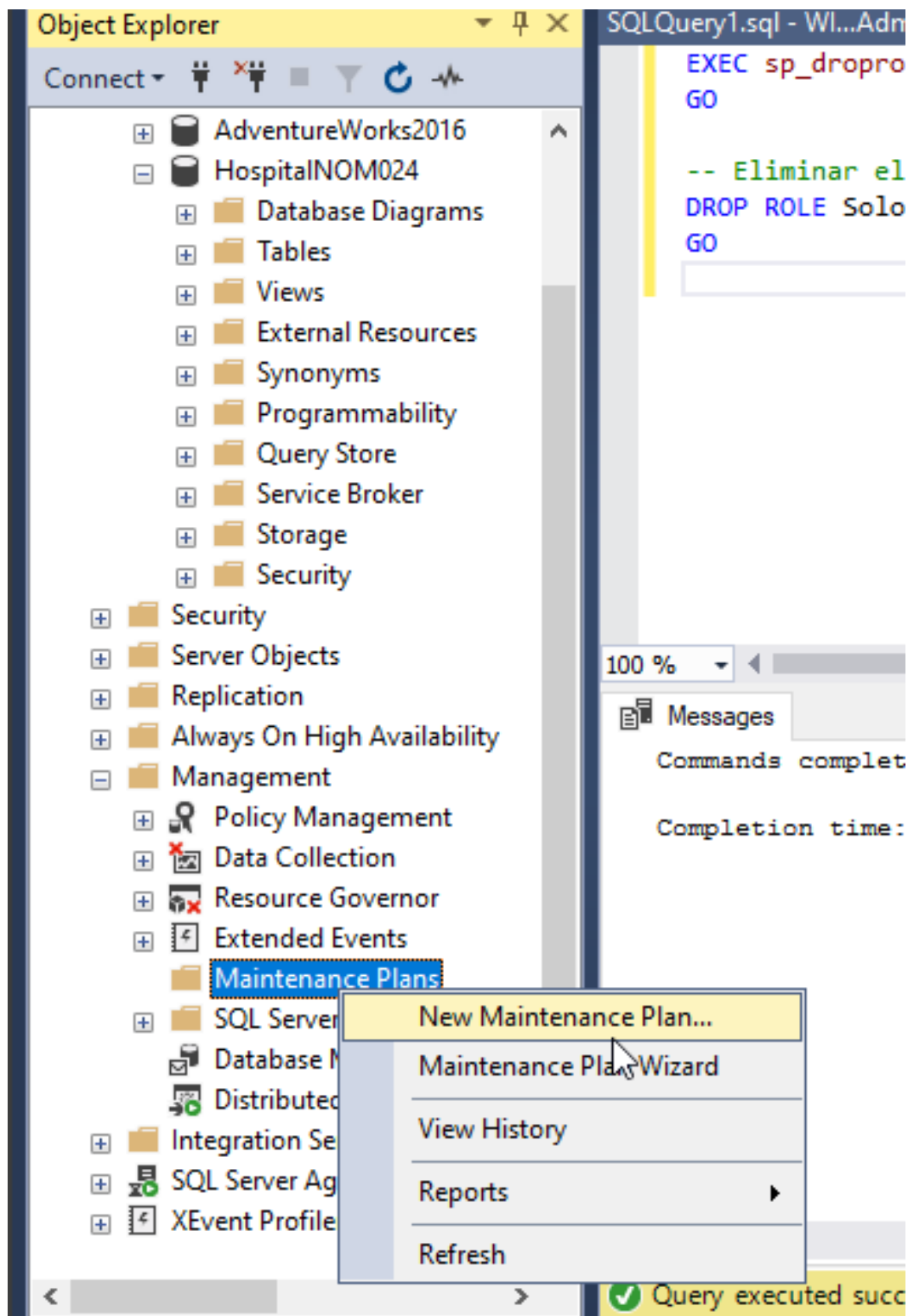
Help





4. Creación de Plan de Mantenimiento

Se creó un plan de mantenimiento para realizar respaldo, reorganización de índices y actualización de estadísticas.





Back Up Database Task



Backup Database on

Databases: <Select one or more>

Type: Full

Append existing

Destination: Disk

Backup Compression (Default)



Reorganize Index Task



Reorganize index on

Databases: <Select one or more>

Object: Tables and views

Compact large objects



Update Statistics Task



Update Statistics on

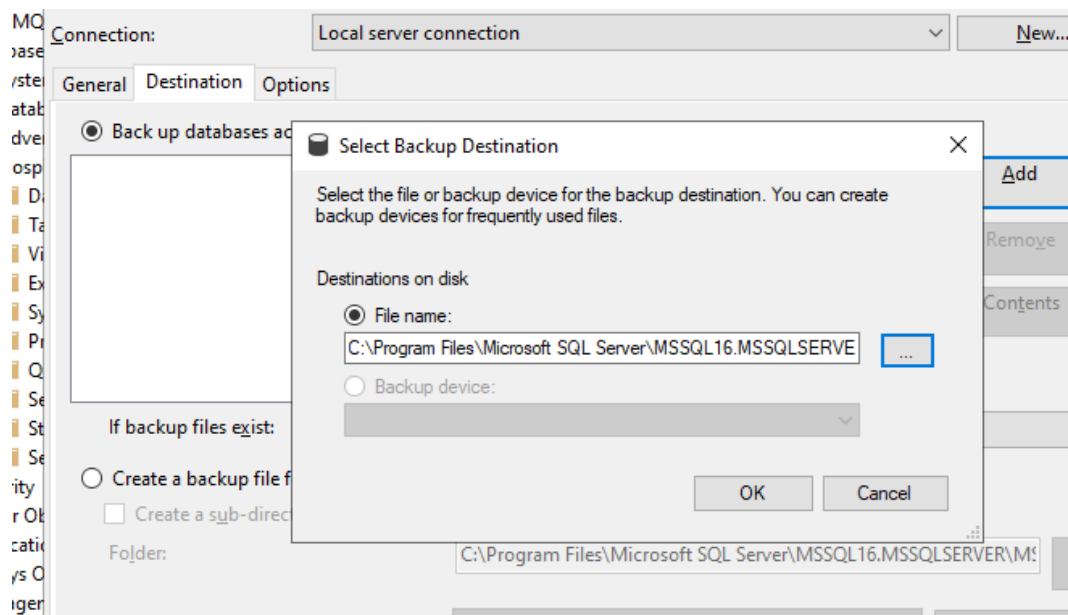
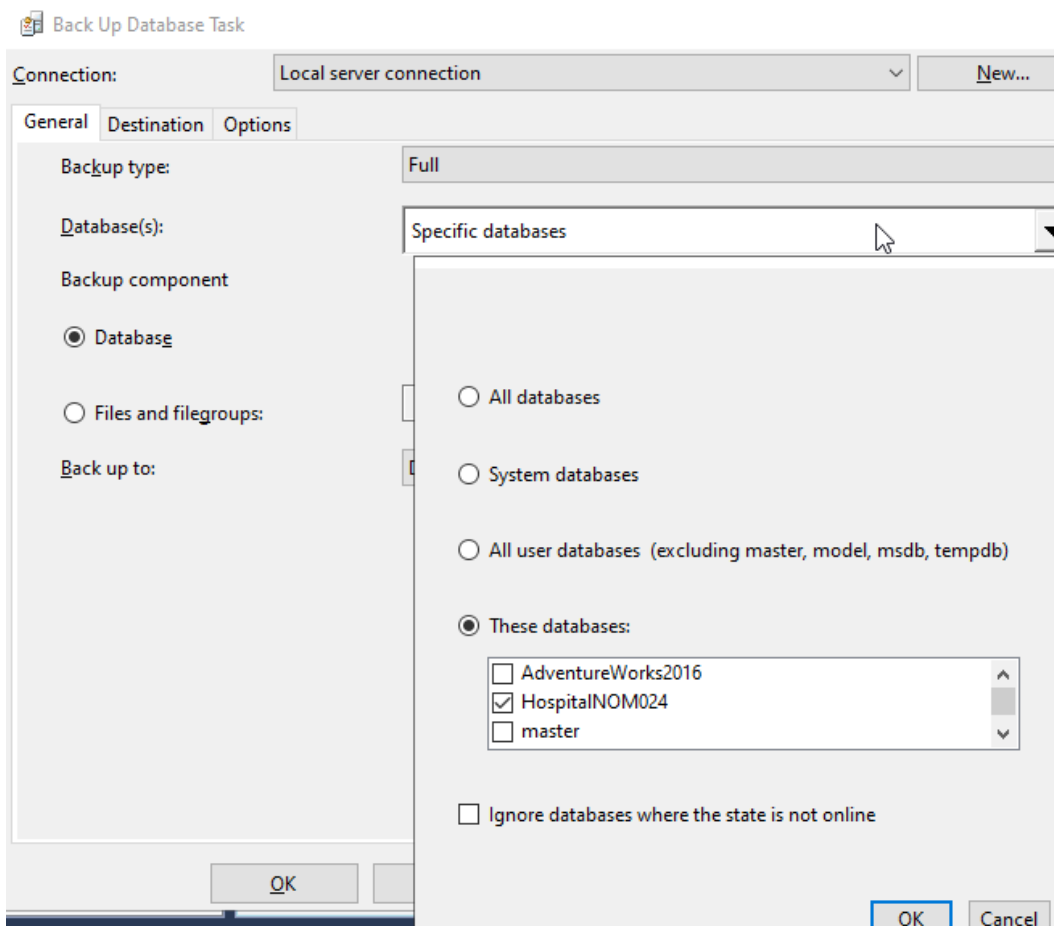
Databases: <Select one or more>

Object: Tables and views

All existing statistics

Scan type: Full scan





Database(s): Specific databases

Object: Tables and Views

Selection:

☒ Compact large objects

Index Stats Options

Scan type: ☒ Fast
☐ Sampled
☐ Detailed

Optimize index only if:

☒ Fragmentation > 10 %

☒ Page Count > 1000

☐ Used in last 7.00 days

OK Cancel View T-SQL Help

Database Properties

Type: Full
Append existing
Destination: Backup Device
Backup Compression (Default)

Reorganize Index Task

Reorganize index on
Databases: <Select one or more>
Object: Tables and views
Compact large objects

PlanMantenimient...alNOM024 [Design]* SQLQuery1.sql - WI...Administrator (69)*

Update Statistics Task

Connection: Local server connection New...

Database(s): Specific databases

Object: Tables and Views

Selection:

Update:

☒ All existing statistics

☐ Column statistics only

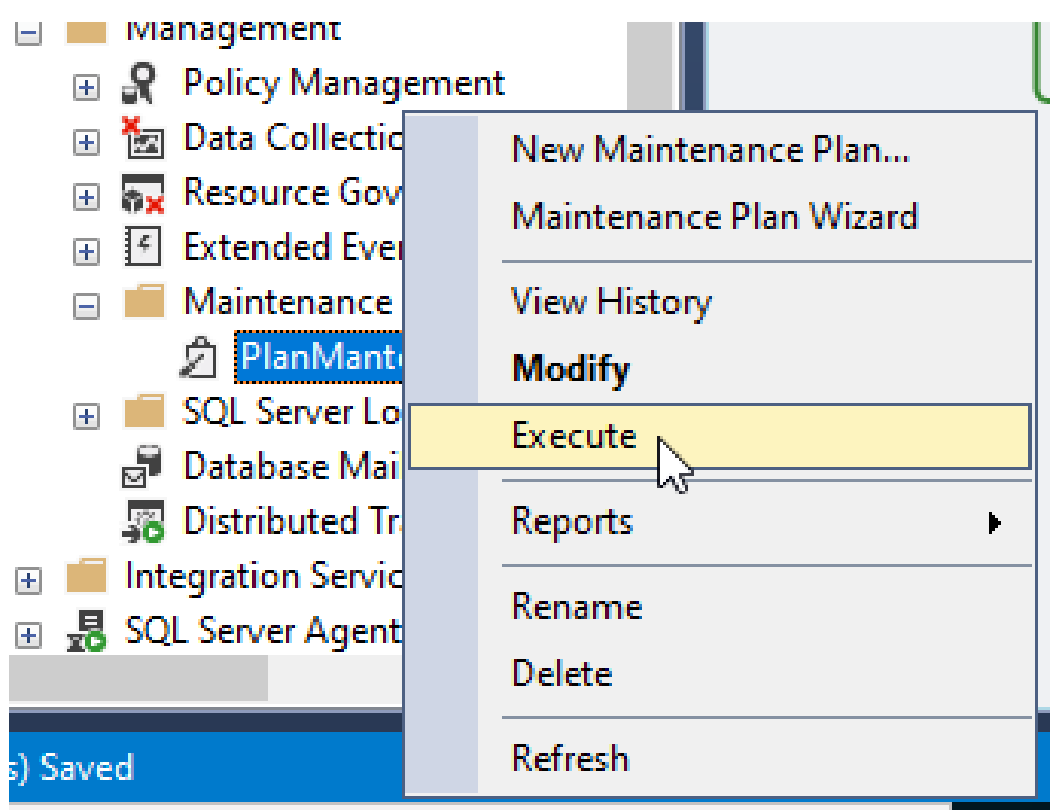
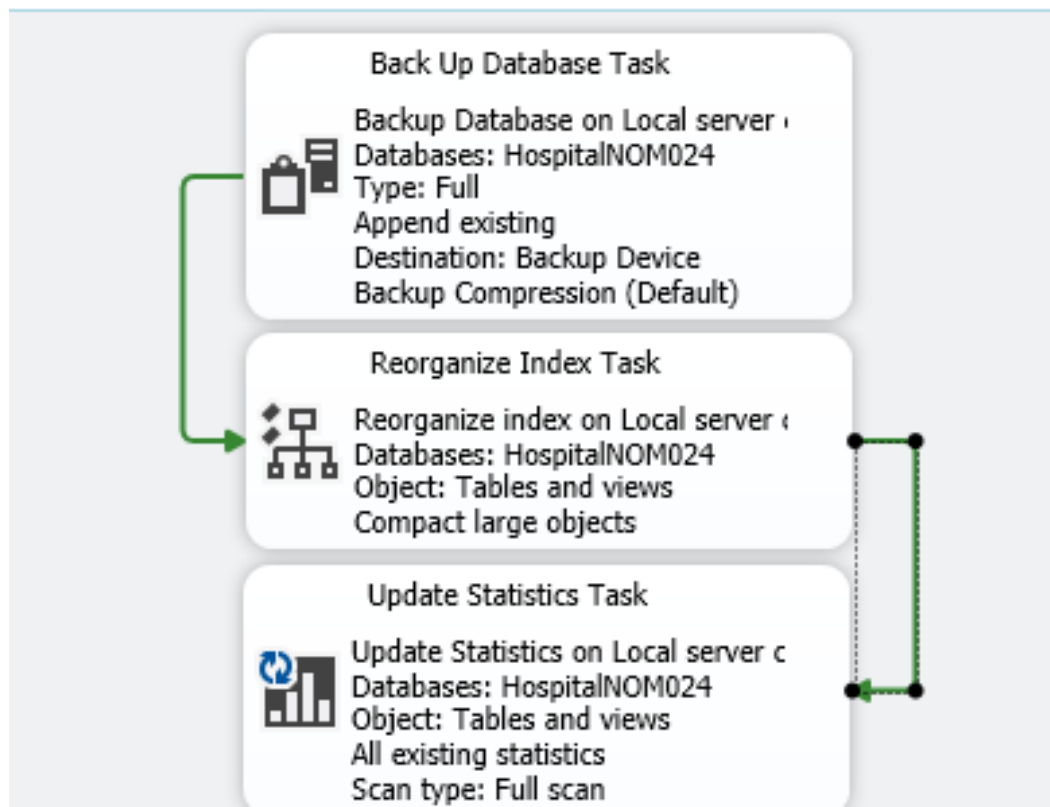
☐ Index statistics only

Scan type:

☒ Full scan

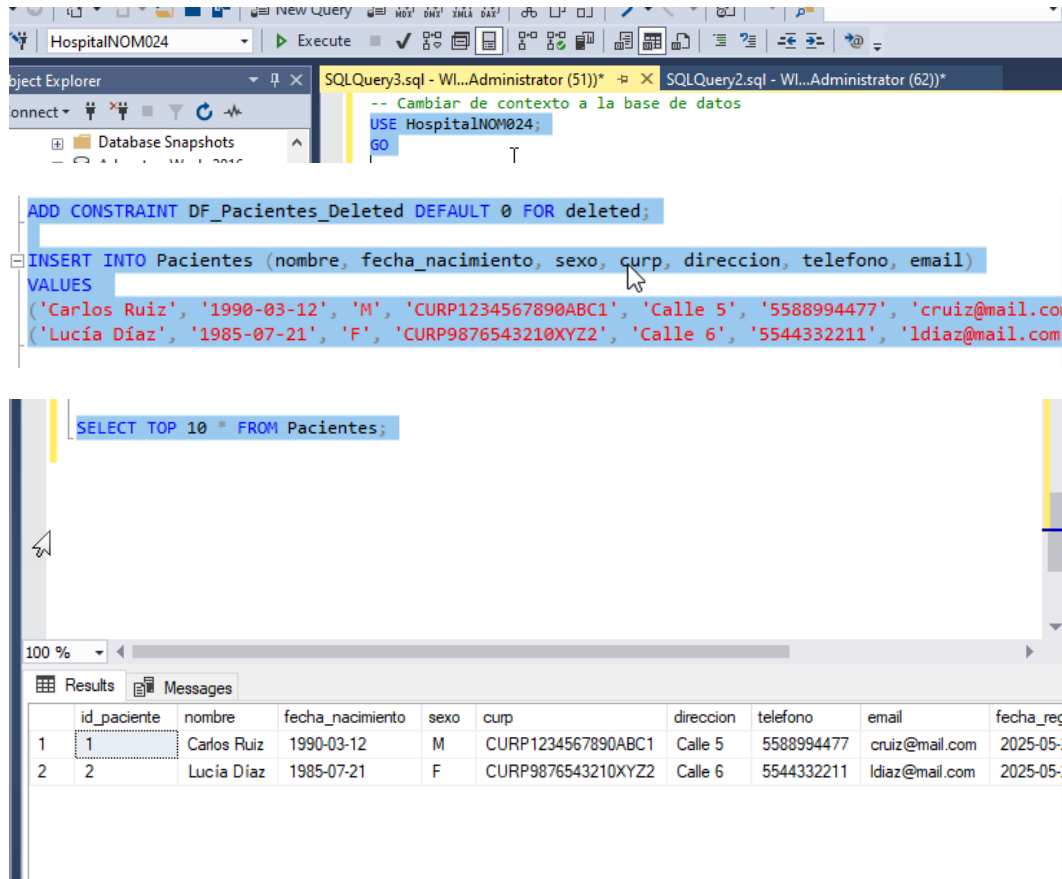
☐ Sample by 50

OK Cancel View T-SQL Help



5. Modificación de Tablas

Se agregó el campo 'deleted' de tipo BIT con valor por defecto 0 (false) a las tablas. Se probó la inserción y consulta de datos.



The screenshot shows the SQL Server Enterprise Manager interface. The 'SQLQuery3.sql' window is active, displaying the following SQL code:

```
-- Cambiar de contexto a la base de datos
USE HospitalNOM024;
GO

ADD CONSTRAINT DF_Pacientes_Deleted DEFAULT 0 FOR deleted;

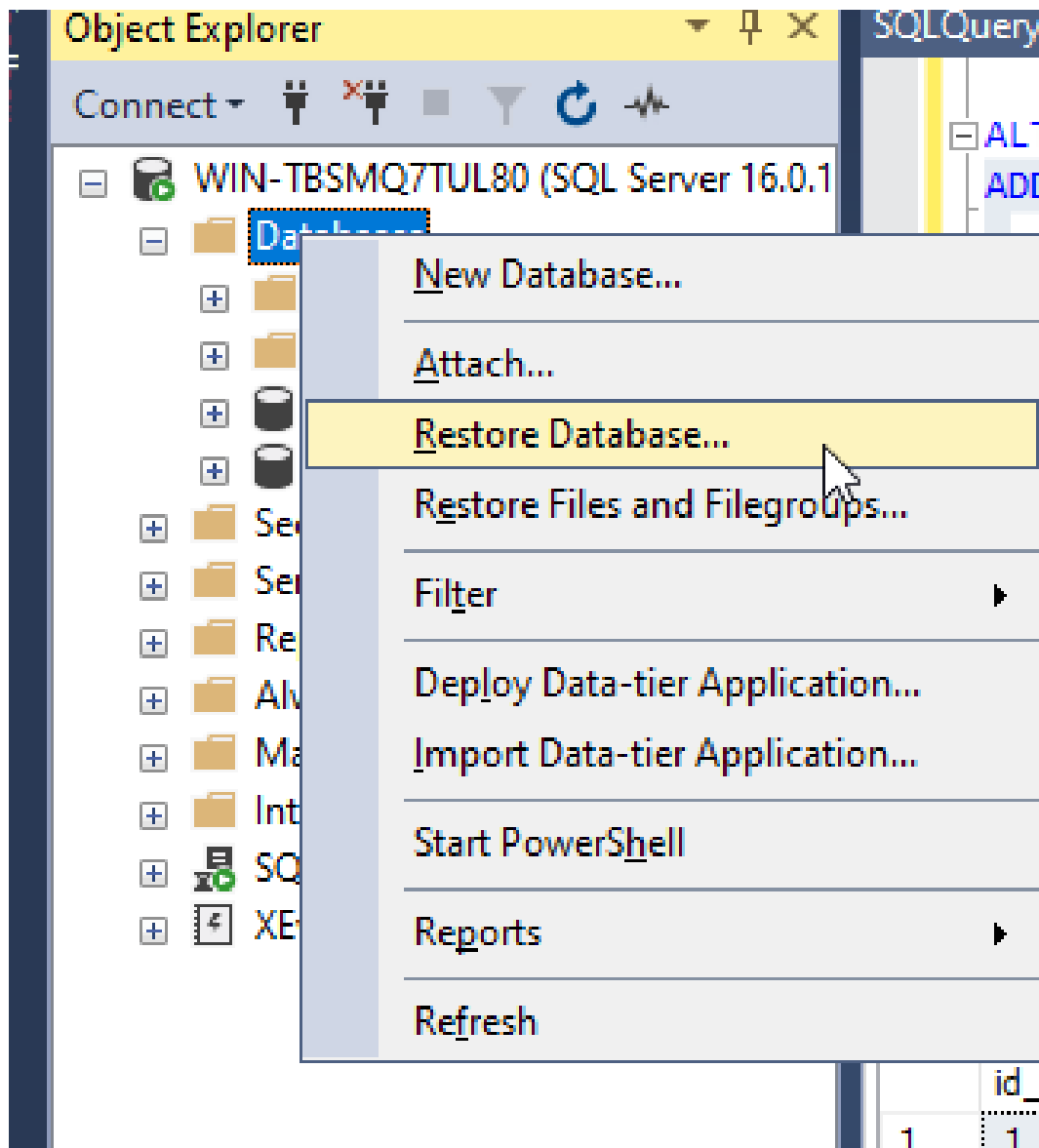
INSERT INTO Pacientes (nombre, fecha_nacimiento, sexo, curp, direccion, telefono, email)
VALUES
('Carlos Ruiz', '1990-03-12', 'M', 'CURP1234567890ABC1', 'Calle 5', '5588994477', 'cruiz@mail.com'),
('Lucía Díaz', '1985-07-21', 'F', 'CURP9876543210XYZ2', 'Calle 6', '5544332211', 'ldiaz@mail.com');
```

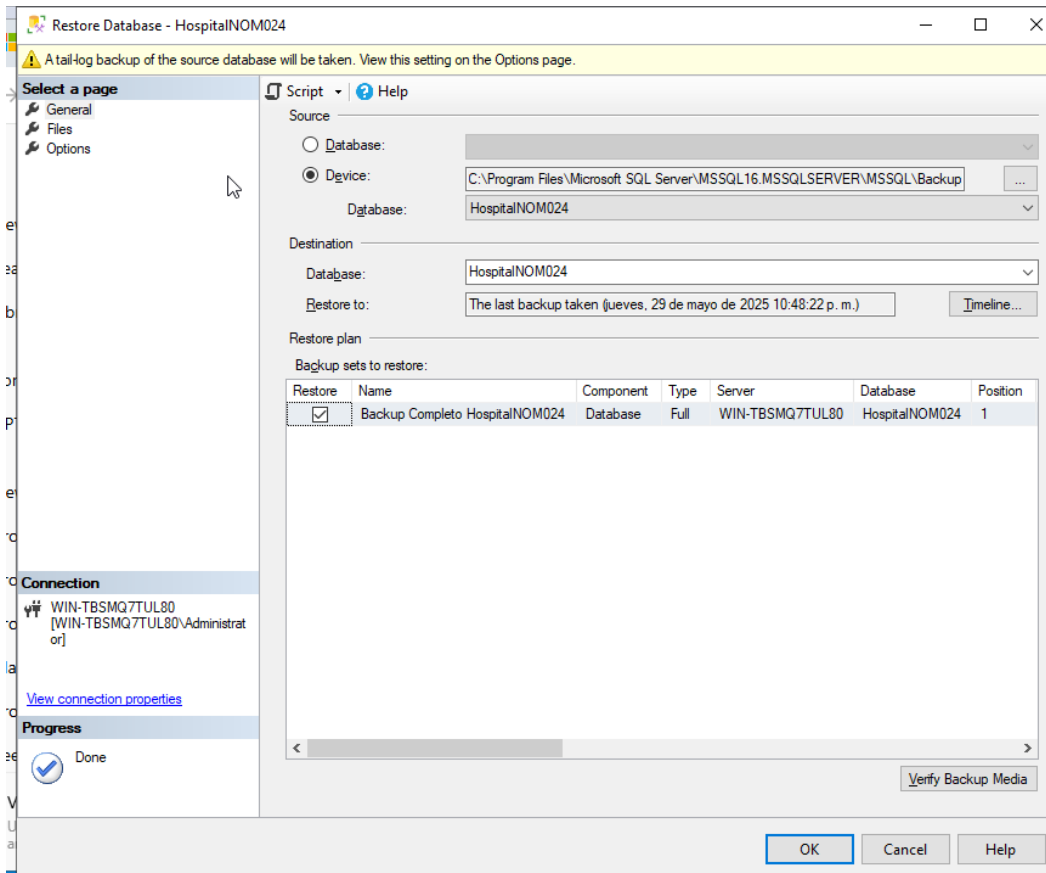
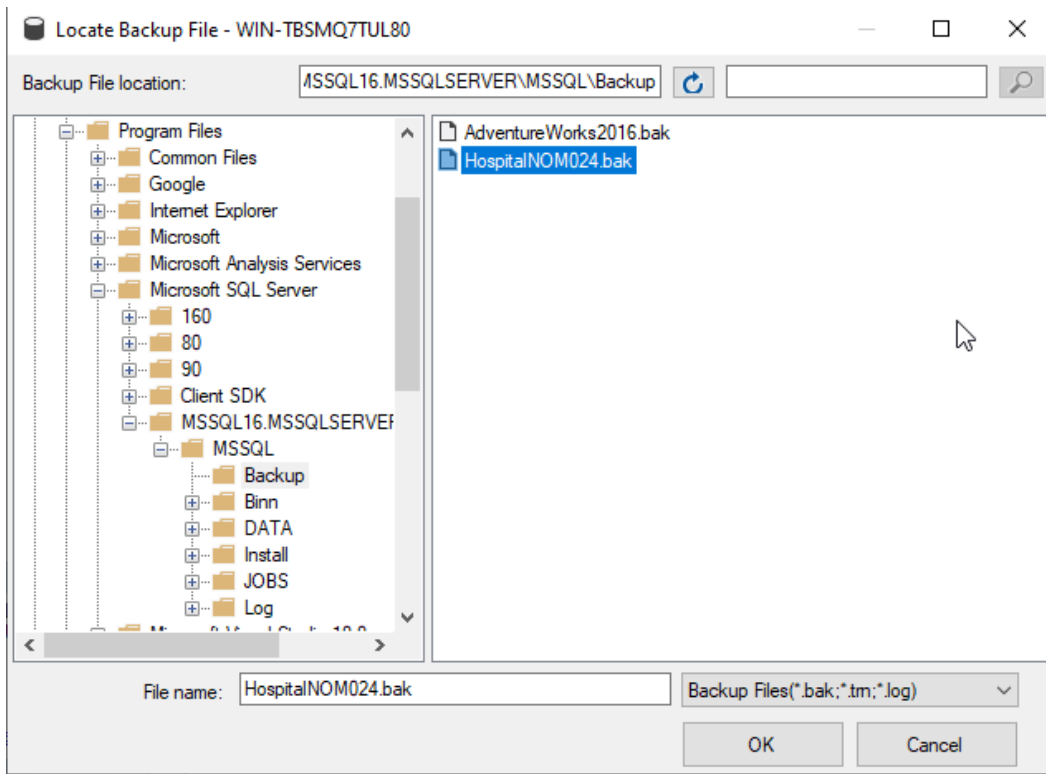
Below the query window, the 'SELECT TOP 10 * FROM Pacientes;' query is executed, and the results are displayed in a table:


	id_paciente	nombre	fecha_nacimiento	sexo	curp	direccion	telefono	email	fecha_reg
1	1	Carlos Ruiz	1990-03-12	M	CURP1234567890ABC1	Calle 5	5588994477	cruiz@mail.com	2025-05-
2	2	Lucía Díaz	1985-07-21	F	CURP9876543210XYZ2	Calle 6	5544332211	ldiaz@mail.com	2025-05-

6. Restauración de la Base de Datos

Se restauró la base de datos HospitalNOM024 a su estado anterior al ejercicio del punto 5 usando el archivo .bak generado.





 A tail-log backup of the source database will be taken. View this setting on the Options page.

Select a page

- General
- Files
- Options

Script | Help

Source

☐ Database:

☒ Device: C:\Program Files\Microsoft SQL Server\MSSQL16.MSSQLSERVER\MSSQL\Backup

Database: HospitalNOM024

Destination

Database: HospitalNOM024

Restore to: The last backup taken (jueves, 29 de mayo de 2025 10:48:22 p. m.)

Restore plan

Backup sets to restore:

Restore	Name	Component	Type	Server	Database	Position
<input checked="" type="checkbox"/>	Backup Completo HospitalNOM024	Database	Full	WIN-TBSMQ7TUL80	HospitalNOM024	1

Connection

WIN-TBSMQ7TUL80
[WIN-TBSMQ7TUL80\Administrator]

[View connection properties](#)

Progress

☒ Done

OK

Cancel

Help