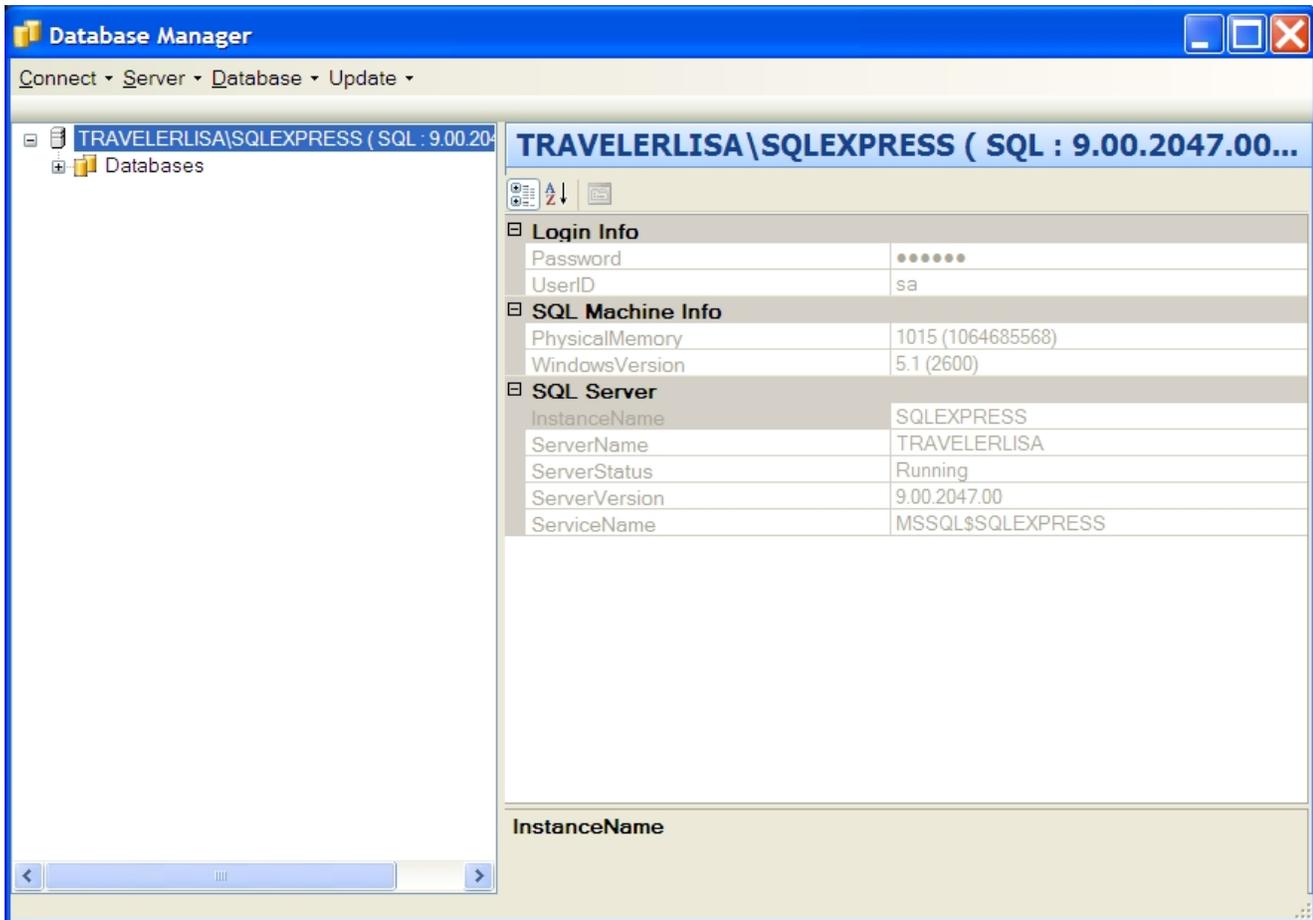


# Database Administration Exercises

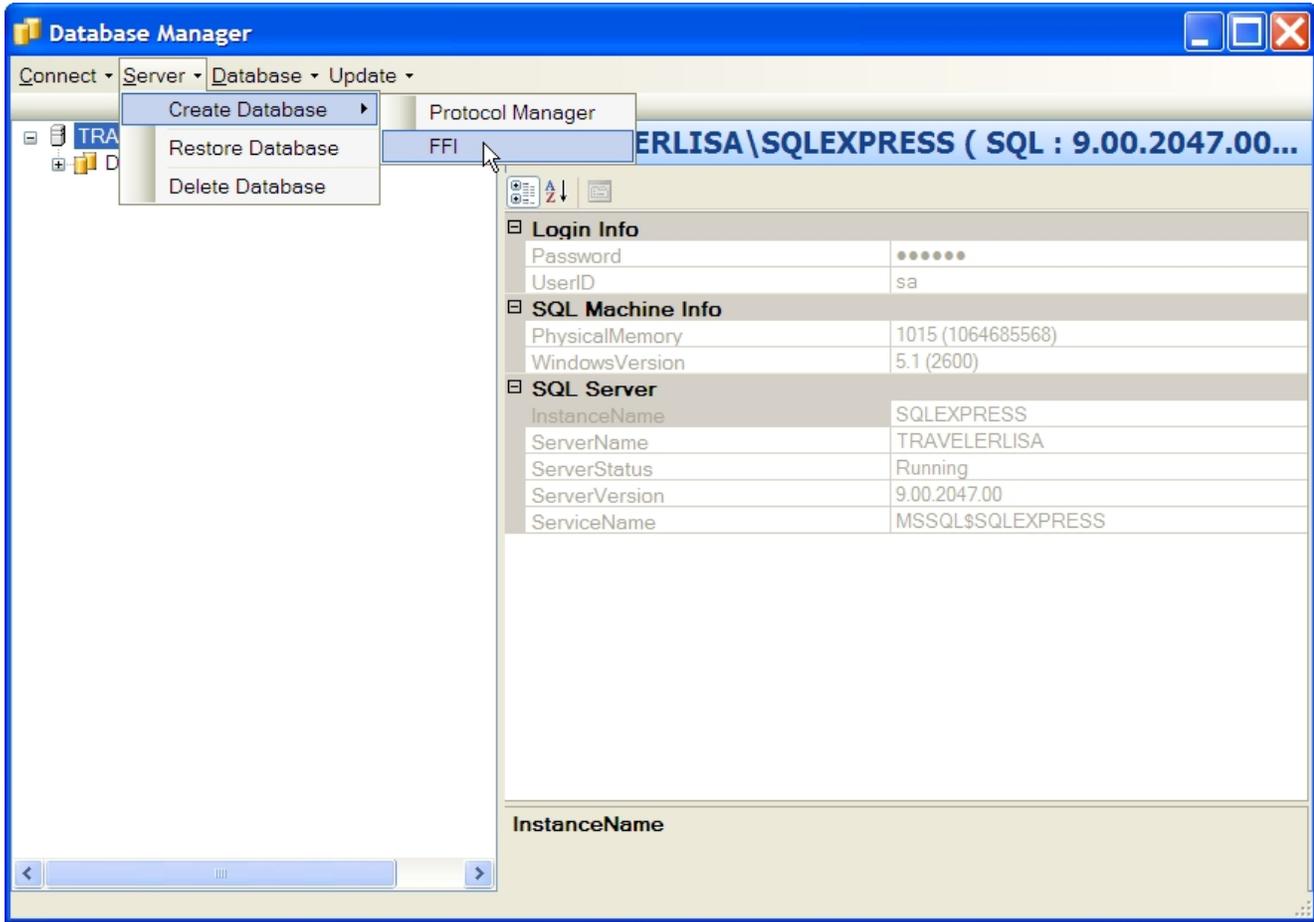
## Exercise 1: Create a database

- 1-1 In the tree view of the Database Manager window, highlight the name of the SQL server instance.

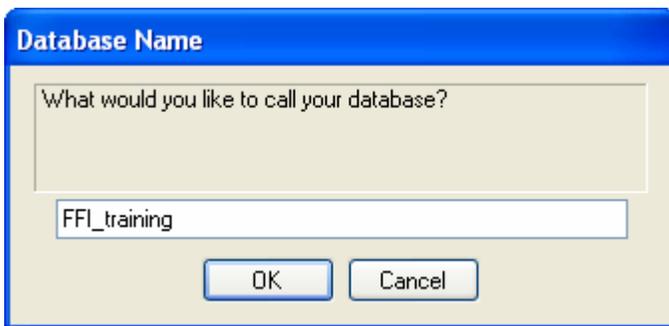


# Database Administration Exercises

1-2 In the **Server** pull-down menu, select **Create Database**. Select **FFI**.



1-3 Enter the name "FFI\_training" and click **OK**.

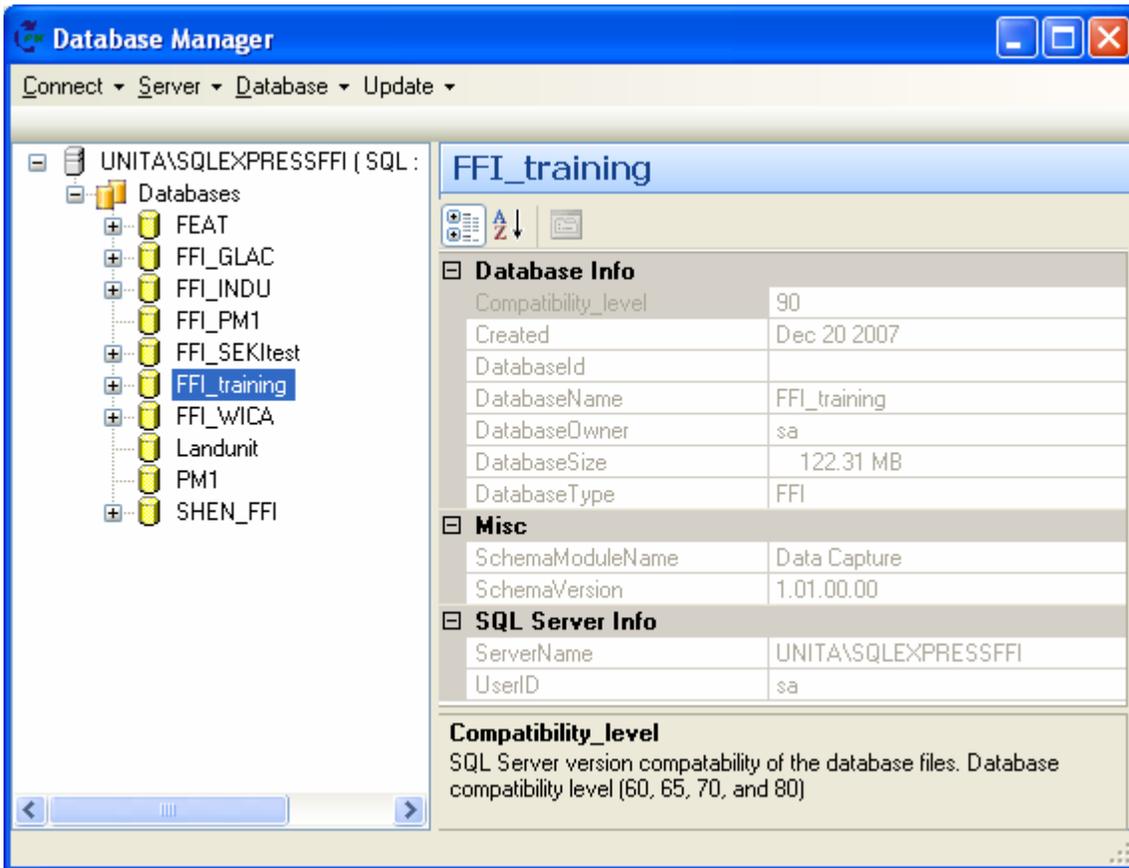


*A progress bar and giant black DOS window will appear. Do not close these windows while the database is created.*

## Database Administration Exercises

1-4 Expand the tree on the left and highlight your new database. Review its properties.

- Creation date, name, owner, and size.
- Database type - FFI.
- Schema module name and version.
- SQL server name and user ID.



The screenshot shows the Microsoft SQL Server Enterprise Manager interface. The left pane displays a tree view of the server instance 'UNITA\SQLEXPRESSFFI (SQL : ...)' with the 'Databases' folder expanded. The 'FFI\_training' database is selected and highlighted in blue. The right pane displays the properties of the 'FFI\_training' database, organized into sections: 'Database Info', 'Misc', and 'SQL Server Info'. Below these sections is a description for 'Compatibility\_level'.

Database Info	
Compatibility_level	90
Created	Dec 20 2007
DatabaseId	
DatabaseName	FFI_training
DatabaseOwner	sa
DatabaseSize	122.31 MB
DatabaseType	FFI

Misc	
SchemaModuleName	Data Capture
SchemaVersion	1.01.00.00

SQL Server Info	
ServerName	UNITA\SQLEXPRESSFFI
UserID	sa

**Compatibility\_level**  
SQL Server version compatibility of the database files. Database compatibility level (60, 65, 70, and 80)

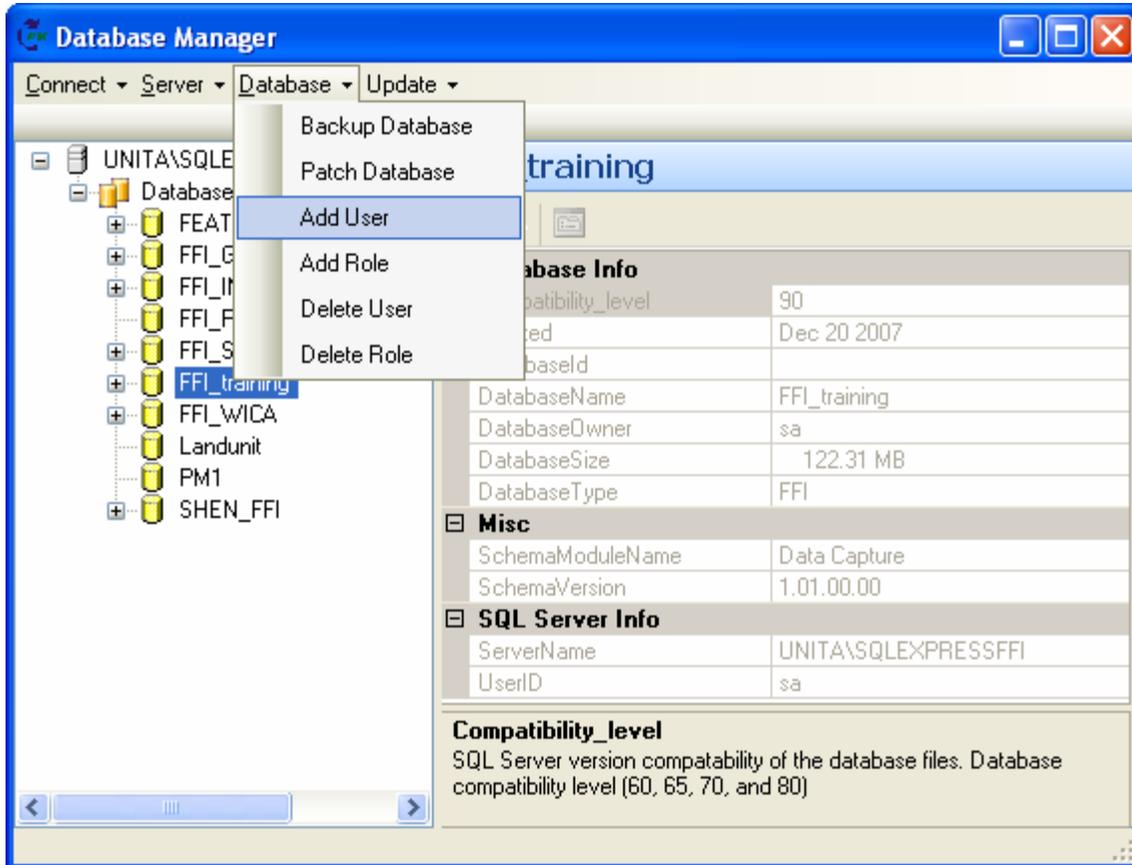
# Database Administration Exercises

## Exercise 2: Adding users and roles

FFI administrators and managers can assign and modify or delete user roles for a database. Managing user roles helps to ensure the integrity of the database by allowing users access to only the tools and functions that they require to do their work. In this exercise, you will work with users and roles.

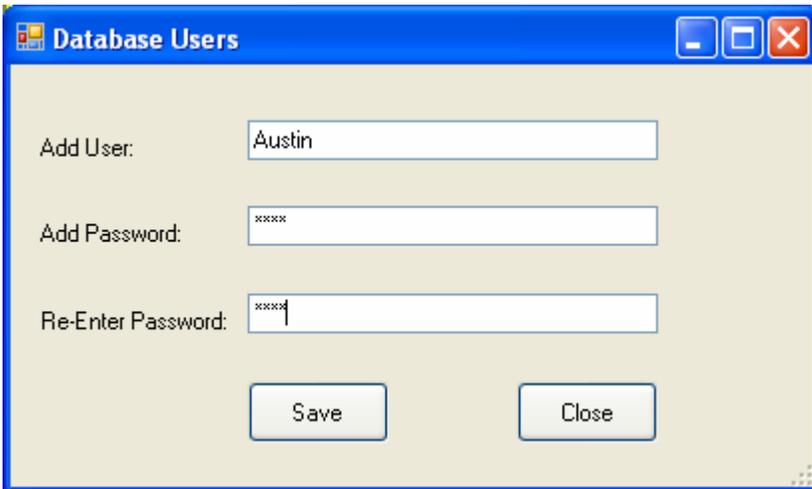
2-1 Select the database “FFI\_training” in the tree view of the Database Manager. In this example, a new user is being added.

2-2 Click **Add User** in the **Database** pull-down menu.

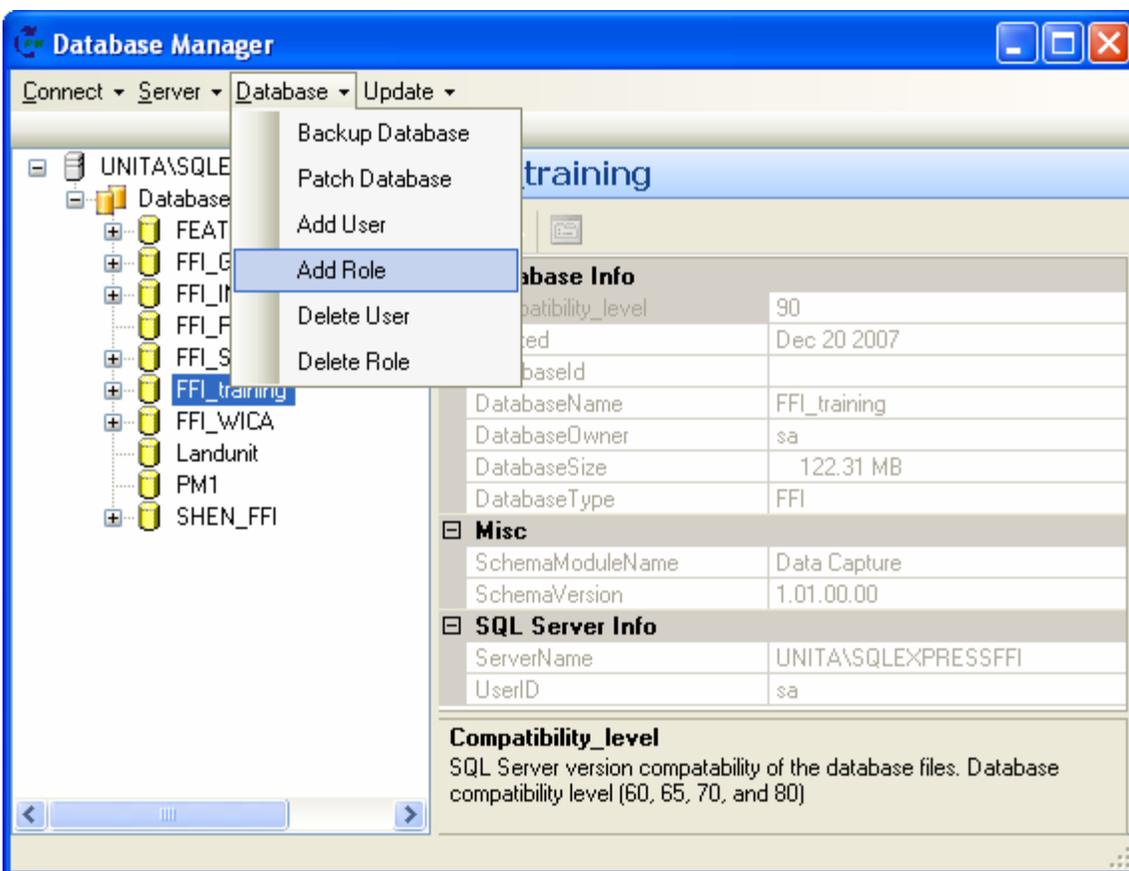


## Database Administration Exercises

2-3 Enter a name and password for the new user, and click **Save**.



*NOTE: Select a password that you can easily remember, since it cannot be retrieved if it is forgotten.*

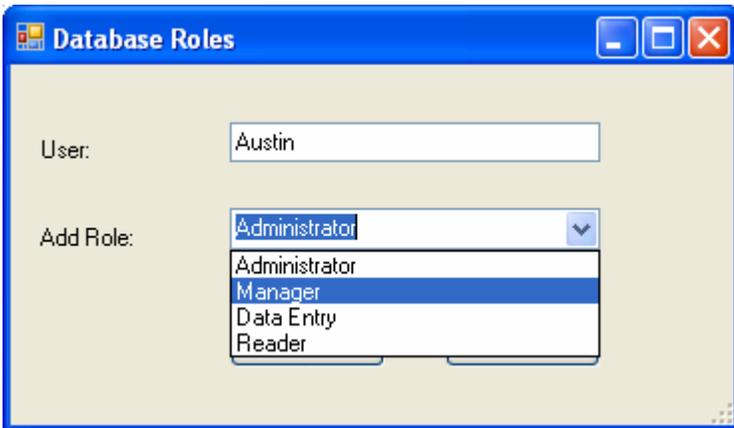


2-4 Select the database "FFI\_training" in the tree view of the Database Manager.

2-5 Click **Add Role** in the **Database** pull-down menu.

## Database Administration Exercises

2-6 Enter the name of the user and select the role "Manager" in the pull-down listing. Click **Save**.



Addition of the user's new role is confirmed. Click **OK** to close the confirmation window.



# Database Administration Exercises

## Exercise 3: Back up a database

The **Backup Database** command creates a backup copy of the selected database and files it in the folder C:\Program Files\Microsoft SQL Server\MSSQL.1\MSSQL\Backup. It is the user's responsibility to ensure that those files are, in turn, backed up to a secure location. If disc space becomes an issue, you may choose to move all or some of these files to another location.

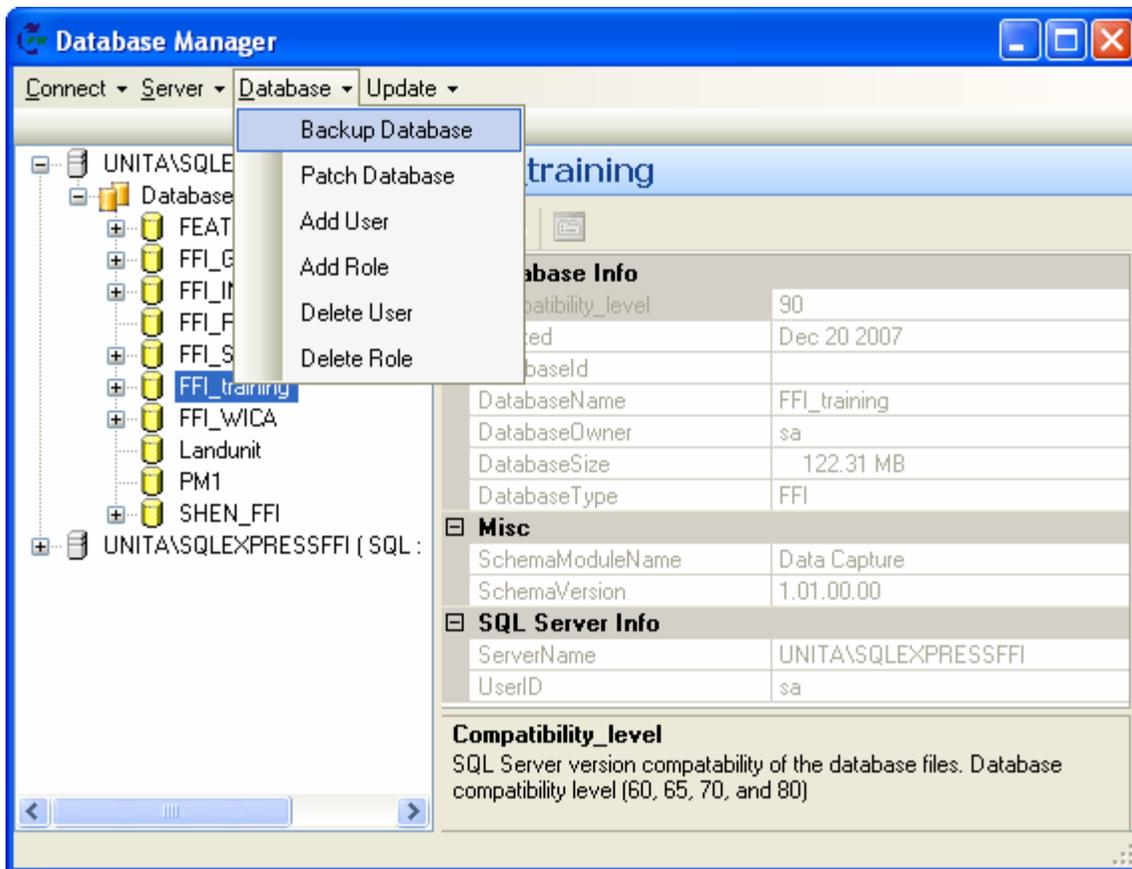
*NOTE: At this time, database backup must be done by an FFI administrator or manager, and can only be done within the Admin module.*

*NOTE: Back up your databases often! A deleted database cannot be recovered, but you can restore a database from a backup file.*

To back up a database:

3-1 In the Database Manager tree view, highlight the name of the database.

3-2 Click **Backup Database** in the **Database** pull-down menu.



## Database Administration Exercises

3-3 After a moment or two, a confirmation box opens. Note the name of the backup file and click **OK**.



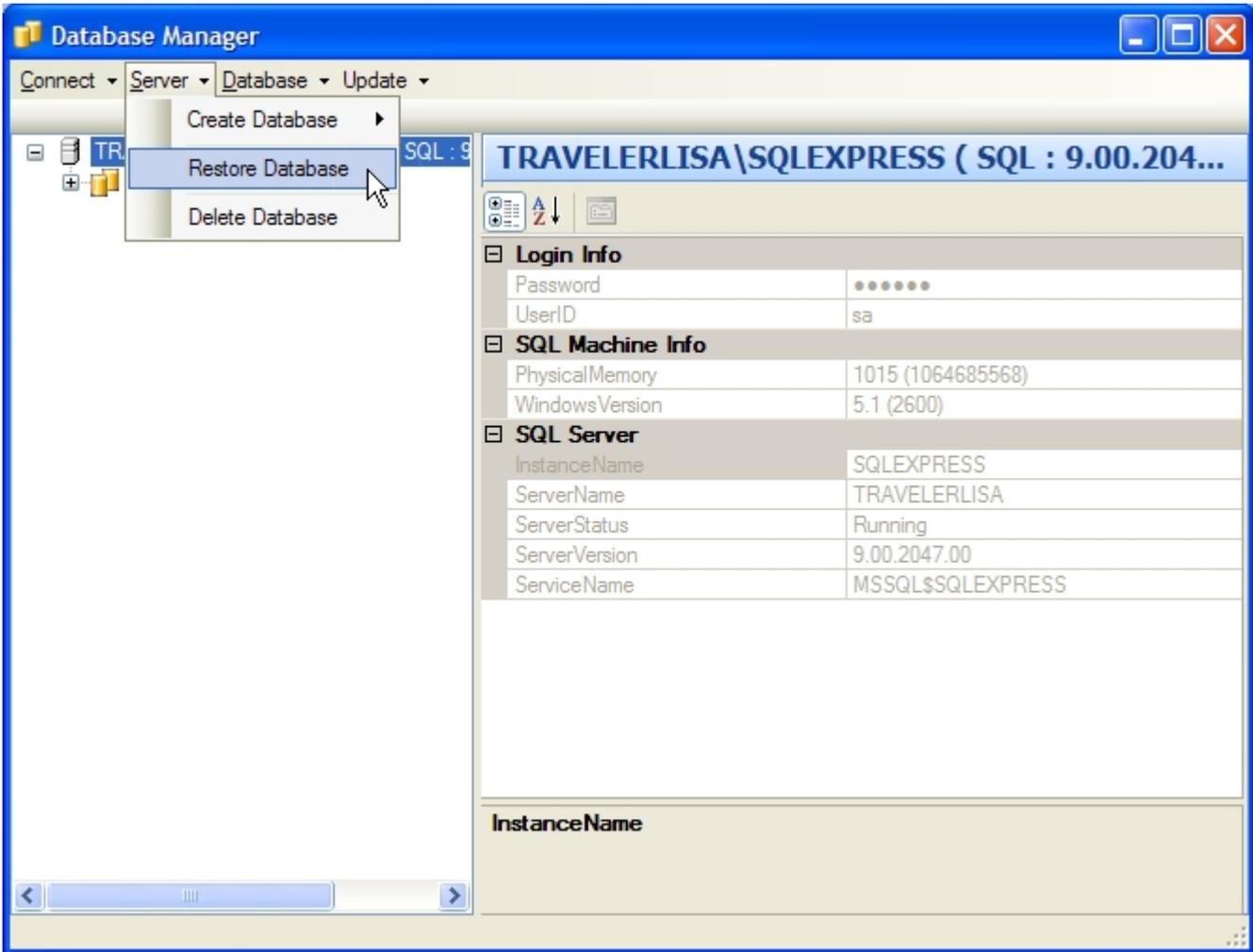
*NOTE: The default location for backup files is C:\Program Files\Microsoft SQL Server\MSSQL.1\MSSQL\Backup.*

# Database Administration Exercises

## Exercise 4: Restore a database

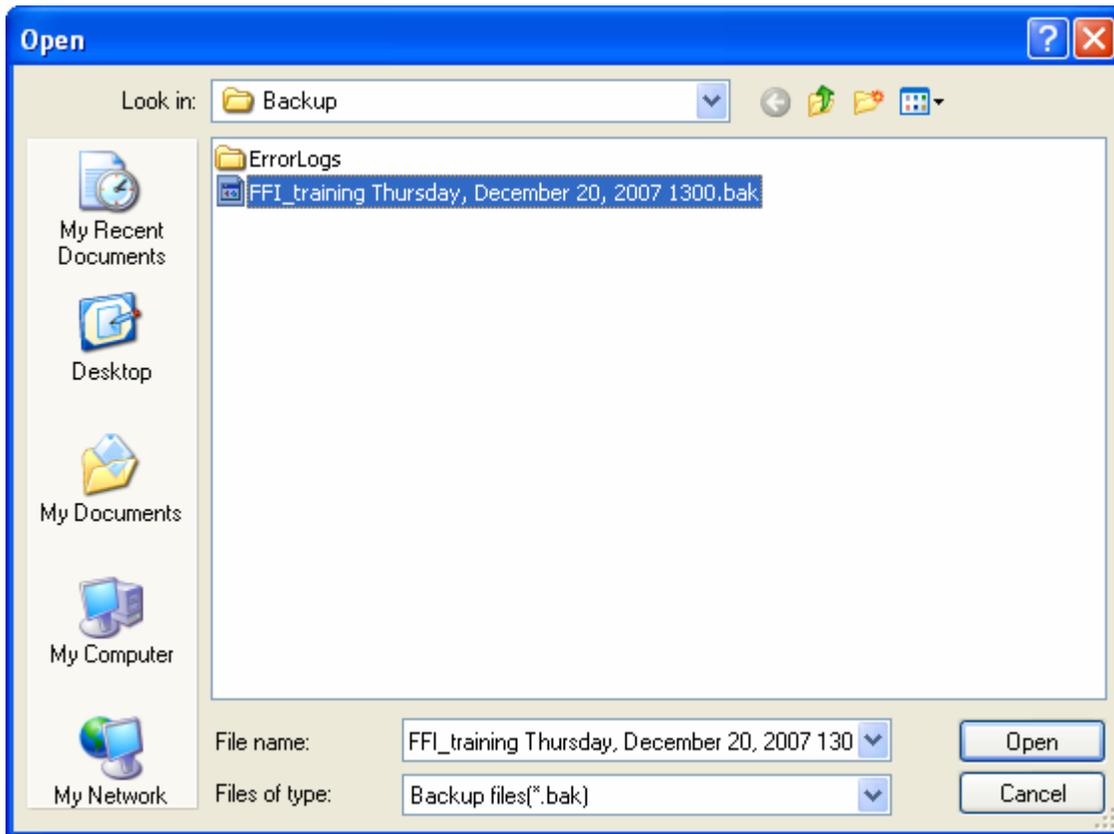
A backed-up database can be restored if it is inadvertently deleted or damaged. You must hold an administrative role to restore a database.

4-1 Highlight the name of the SQL server instance in the tree view and select **Restore Database** in the **Server** pull-down menu.



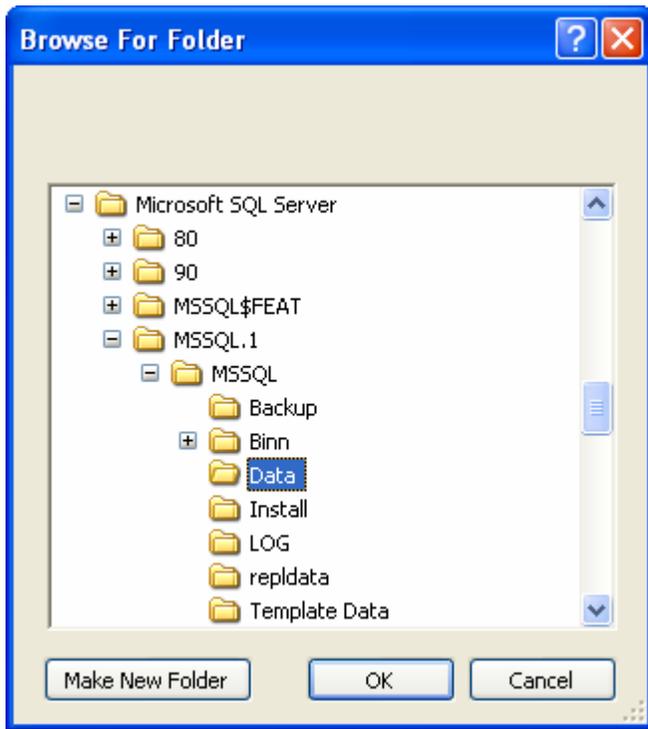
## Database Administration Exercises

4-2 The **Database Restore** window opens. Browse to the Database backup file location: C:\Program Files\Microsoft SQL Server\MSSQL.1\MSSQL\Backup.

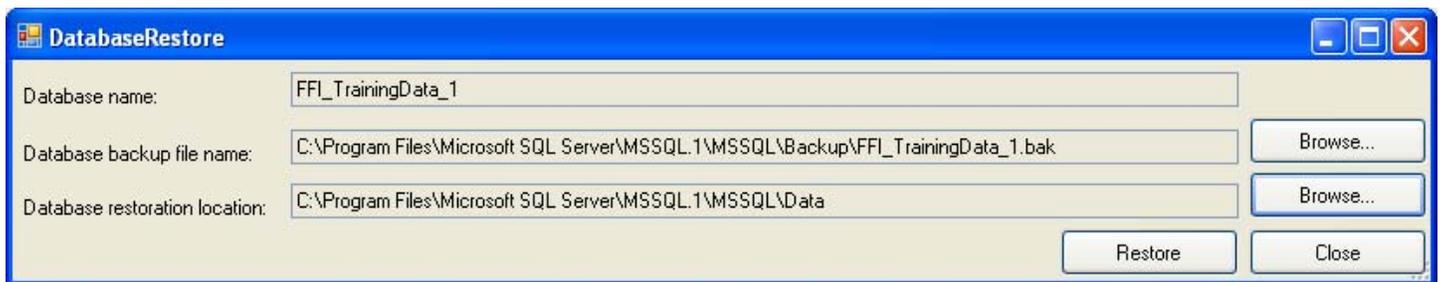


## Database Administration Exercises

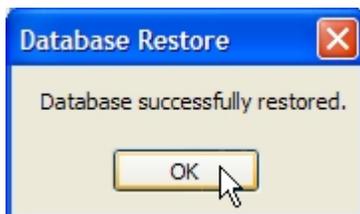
- 4-3 Browse to the Database restoration location: C:\Program Files\Microsoft SQL Server\MSSQL.1\MSSQL\Data.



- 4-4 Click **Restore**.

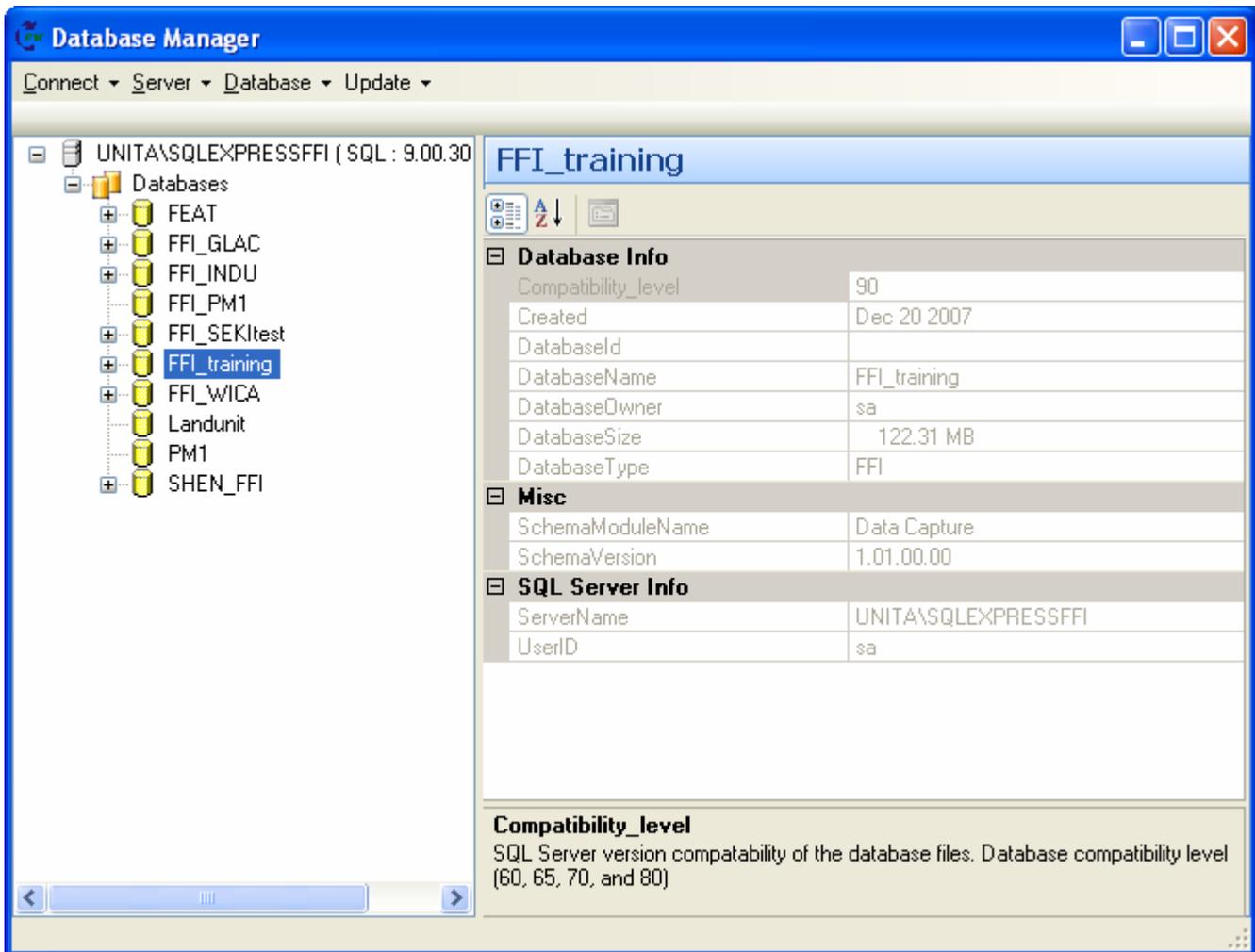


- 4-5 Click **OK** to close the message window.



The FFI\_training database is again listed in the Database Manager tree view. Its new creation date is the date of the backup file used in the restoration.

## Database Administration Exercises



### Further discussion: Limitations of backup and restore

It is possible to restore a database onto a remote server – perhaps a computer belonging to a manager in another city – so that two copies of the database exist, one of which is a throw-away copy for analysis only. In this case, the custodian of that copy will have to remember to not add or edit data to the throw-away copy.

A note on field data collection:

“Restore” does not mean “Import”. With the exception of the PDA software, FFI does not support any form of disconnected editing or replication. Edits made on a copy (restored from a backup) of the master database cannot be moved back to the master and will be lost. This means that the only way users can share an FFI database is to be connected via an intranet. The PDA is the only provision for electronic field data collection. However, if the server hosting the FFI database is a portable computer, it can be taken off-line and into the field and may be used for field data collection. During this time, office-bound computers may use a throw-away copy of the database for analysis only.

# Database Administration Exercises

## Further discussion: Moving a database to a new server

Situations where you may need to move to a new server:

- Everything is working fine, you just want to use a newer computer.
- Everything is working fine you may just be reinstalling on the old machine with the new hard drive.
- A hard drive has failed, and all you have is your most recent backups. You will need to reenter data since the last backup.
- A hard drive has failed, but you have been able to recover the SQL server database files from the dead hard drive. With the help of a database administrator, you may be able to “attach” these files to the server without losing data.

Steps will vary depending on your situation, but will be similar to these:

- Install FFI on the new server.
- Install SQL Server on the new server.
- Copy all of the FFI backup files to the folder C:\Program Files\Microsoft SQL Server\MSSQL.1\MSSQL\Backup on the new server.
- Restore all databases from the backups.
- If the old server is still running, delete all of the old databases so that users will not be confused about where their databases are.
- Possibly uninstall SQL Server from the old server.
- Ensure that all of the FFI computers that will be clients to the new server have connectivity and are able to login to the databases.
- Communicate to users where their databases are now hosted.