

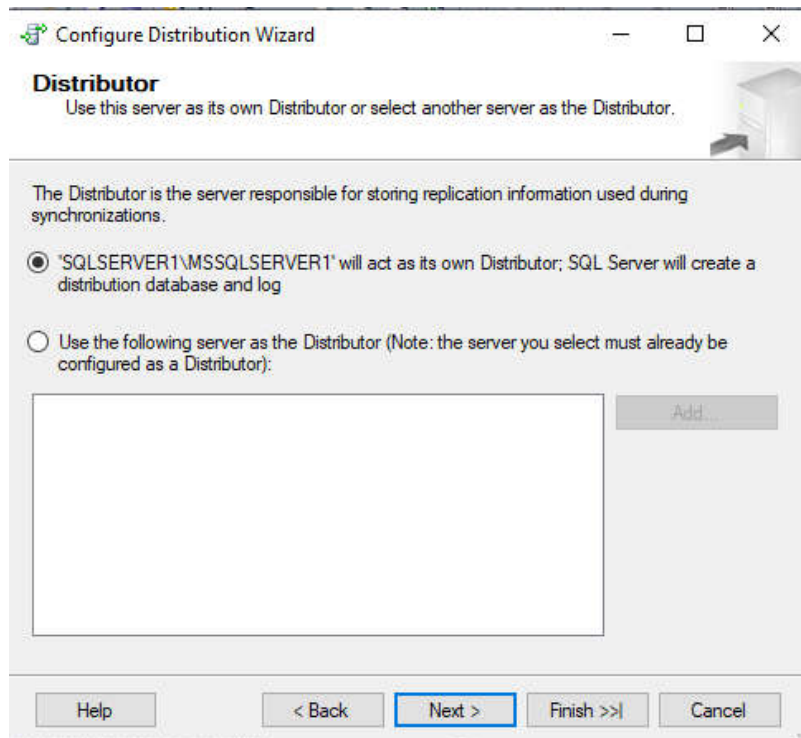
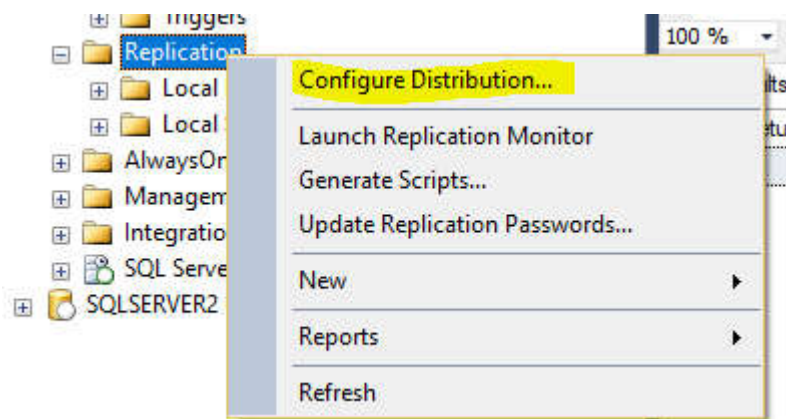
LAB 2

Mục đích:

- Phân mảnh dữ liệu trên SQL Server dùng Replication
- Tạo các nhóm người dùng và gán vai trò tương ứng
- Tạo thủ tục cho phép tạo tài khoản Login
- Đẩy thủ tục từ Publication sang Subscription

I. PHÂN MẢNH DỮ LIỆU TRONG SQL SERVER DÙNG REPLICATION

1. Bước 1: Trên server chứa CSDL gốc, tạo thư mục
2. Bước 2: chuột phải vào Replication → Configure Distribution



Configure Distribution Wizard

SQL Server Agent Start


Select whether to automatically start the SQL Server Agent service when the computer is started.

Because the replication agents that synchronize subscriptions run unattended, you should configure SQL Server Agent to start automatically.

Do you want to configure the SQL Server Agent service on 'SQLSERVER1\MSSQLSERVER1' to start automatically when the computer is started?

☒ Yes, configure the SQL Server Agent service to start automatically

☐ No, I will start the SQL Server Agent service manually

 For the wizard to configure the SQL Server Agent service, the SQL Server service account must have administrator permissions on the server computer. If the service does not have these permissions, you must change the configuration manually.

Help < Back Next > Finish >>| Cancel

Configure Distribution Wizard


Snapshot Folder

Specify the root location where snapshots will be stored.

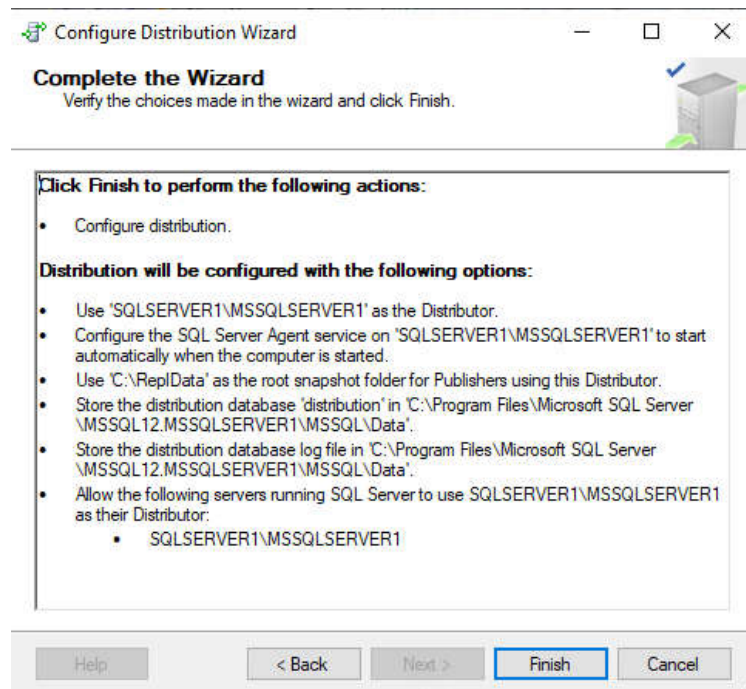
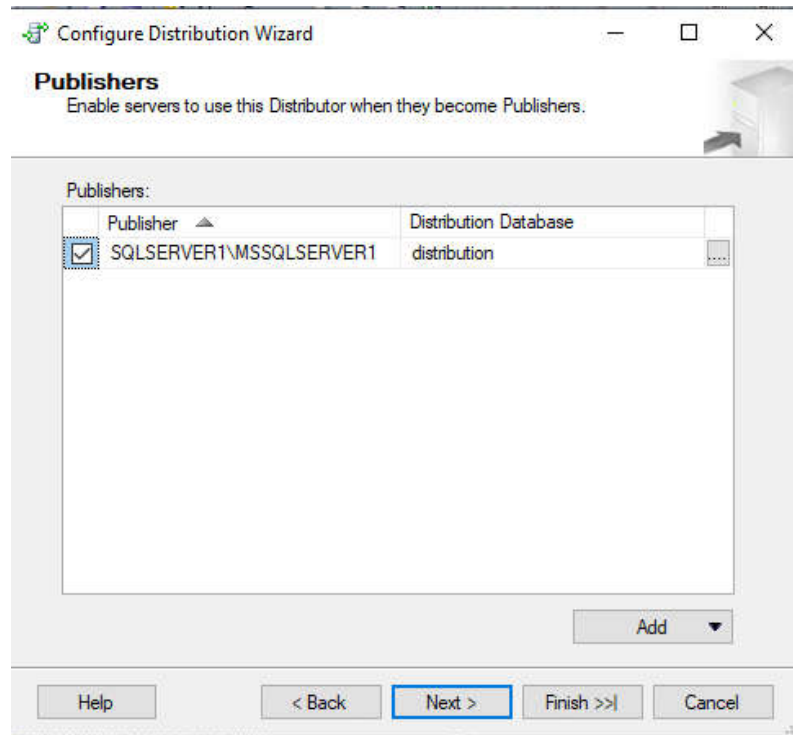
To allow Distribution and Merge Agents that run at Subscribers to access the snapshots of their publications, you must use a network path to refer to the snapshot folder.

Snapshot folder:

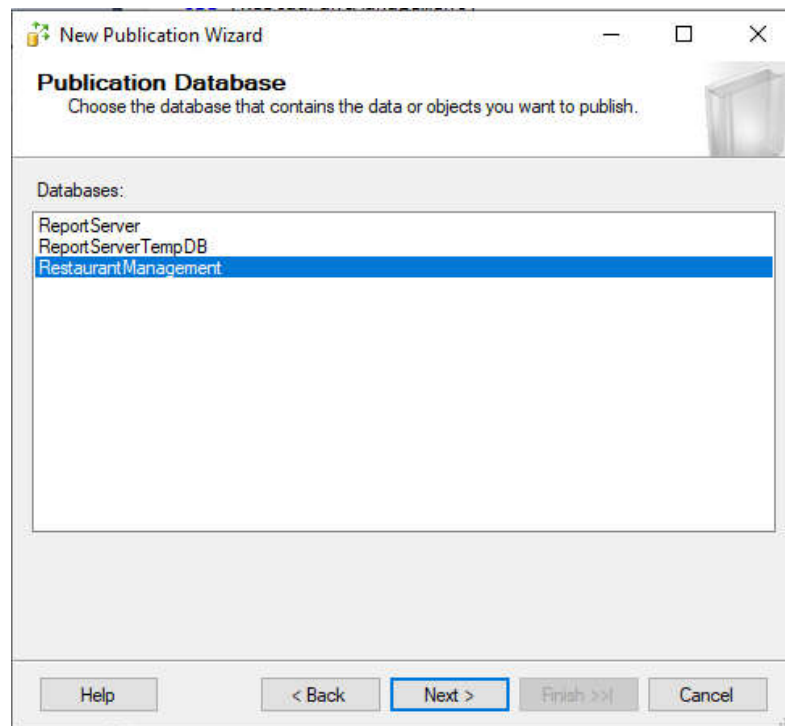
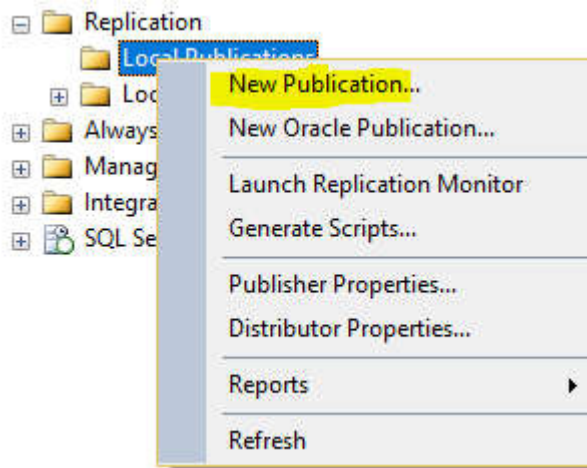
C:\ReplData

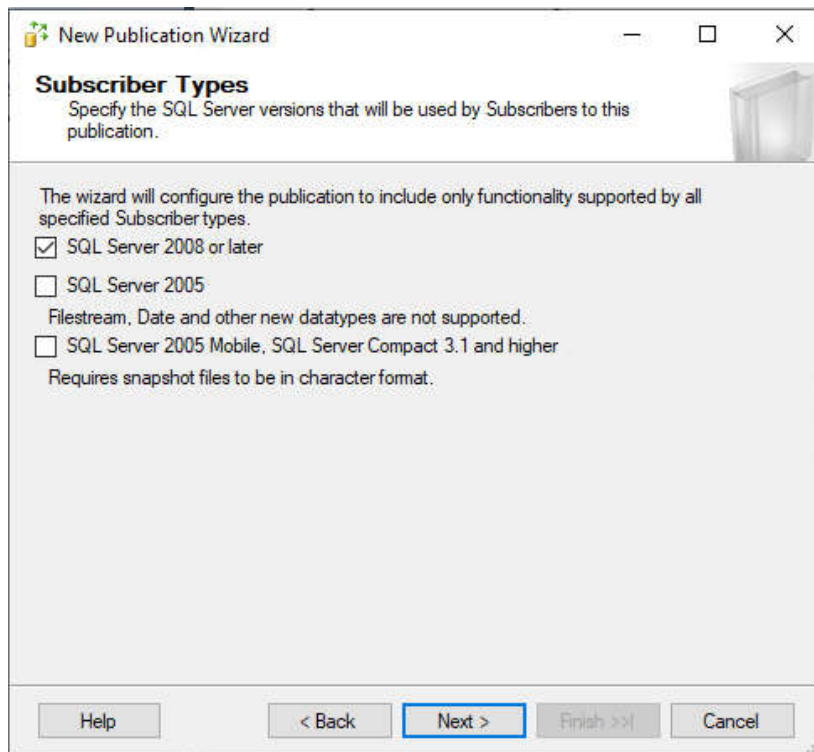
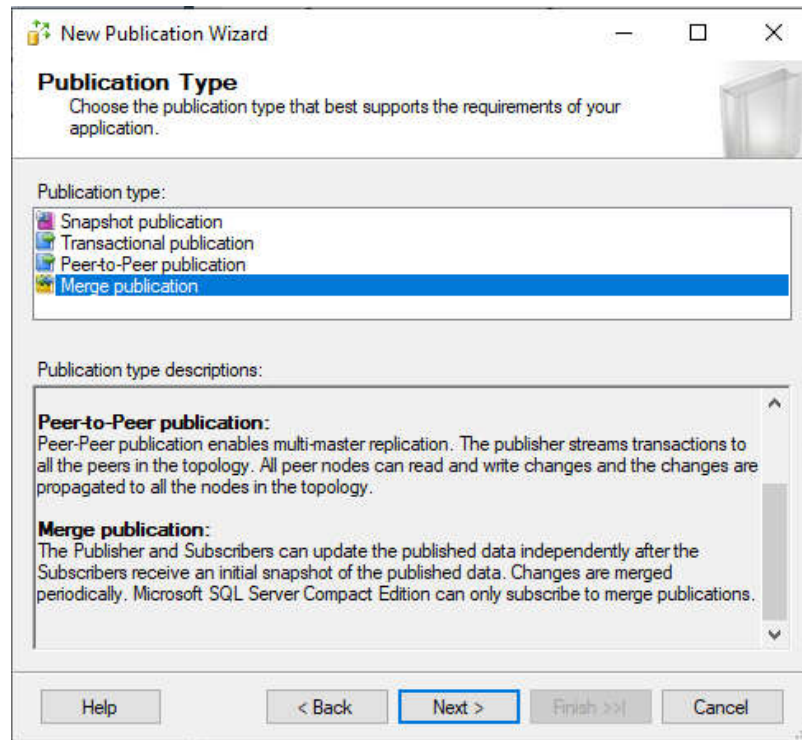
 This snapshot folder does not support pull subscriptions created at the Subscriber. It is not a network path or it is a drive letter mapped to a network path. To support both push and pull subscriptions, use a network path to refer to this folder.

Help < Back Next > Finish >>| Cancel

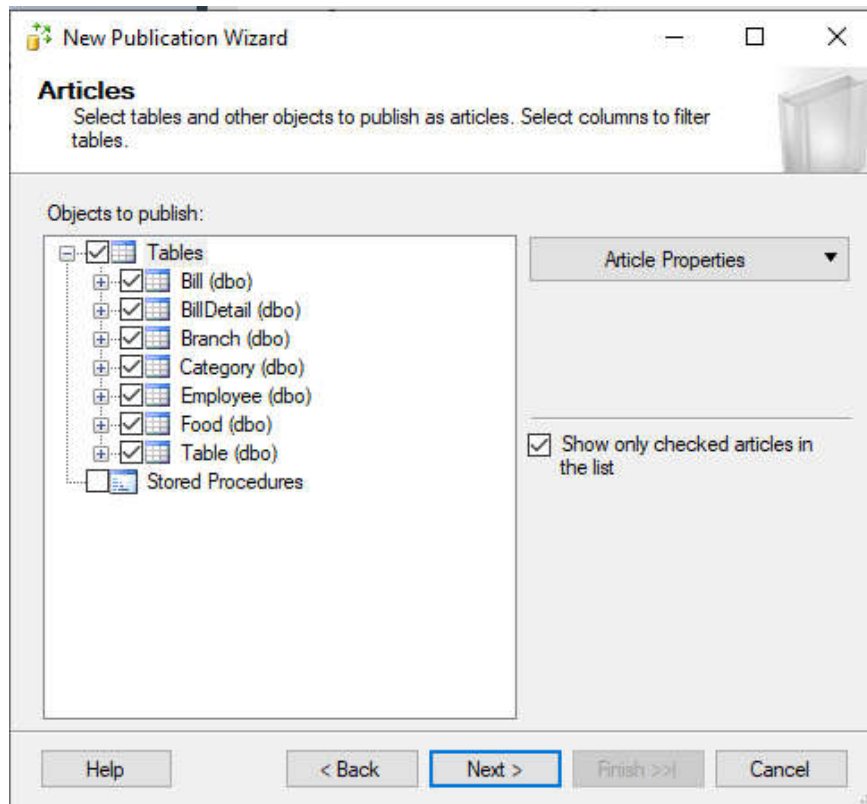


3. Bước 3: Tạo publication

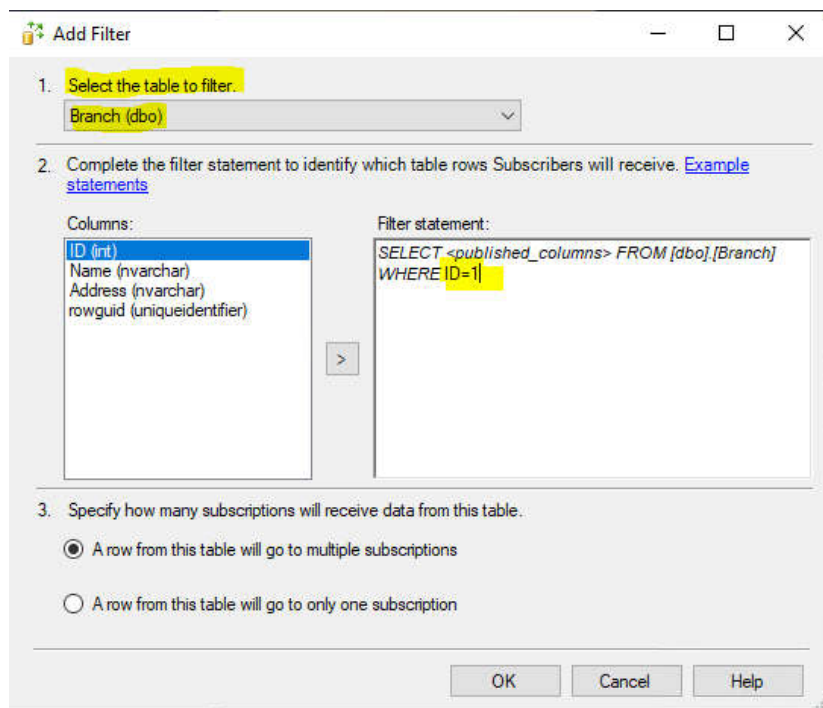




- Chọn tất cả các bảng của CSDL, nếu có thủ tục thì chọn luôn, nếu chưa có thể cập nhật sau



- Trong cửa sổ Filter Rows chọn Add → Add Filter để thêm biểu thức phân mảnh



Add Join

Follow the steps to complete the join statement that defines the relationship between rows in the filtered and joined tables.

1. Verify filtered table and select the joined table:
Filtered table: Joined table:
2. Create the join statement. [Examples](#)
☒ Use the builder to create the statement
☐ Write the join statement manually

Conjunction	Filtered table column	Operator	Joined table column
	ID (int)	=	Branch (int)
<Add clause>		=	

Preview:

```
SELECT <published_columns> FROM [dbo].[Branch] INNER JOIN [dbo].[Employee] ON [Branch].[ID] = [Employee].[Branch]
```
3. Specify join options:
☒ Unique key: rows in the joined table relate to exactly one row in the filtered table (that is, a one-to-one or one-to-many relationship)
☐ Logical record: treat related changes in the filtered and the joined tables as a transaction when synchronizing

New Publication Wizard


Filter Table Rows
Add filters to published tables. Extend the filters to other tables by adding joins.

Filtered Tables:

Branch (dbo)

Employee (dbo)

Filter:

 Add Join

Follow the steps to complete the join statement that defines the relationship between rows in the filtered and joined tables.

1. Verify filtered table and select the joined table:
 Filtered table: Joined table:
2. Create the join statement. [Examples](#)
☒ Use the builder to create the statement
☐ Write the join statement manually

Conjunction	Filtered table column	Operator	Joined table column
	ID (int)	=	Employee (int)
<Add clause>		=	

Preview:

```
SELECT <published_columns> FROM [dbo].[Employee] INNER JOIN [dbo].[Bill] ON [Employee].[ID] = [Bill].[Employee]
```
3. Specify join options:
☒ Unique key: rows in the joined table relate to exactly one row in the filtered table (that is, a one-to-one or one-to-many relationship)
☐ Logical record: treat related changes in the filtered and the joined tables as a transaction when synchronizing

OK Cancel Help

- Làm tương tự để chọn các bảng phân mảnh ngang dẫn xuất. Kết quả như sau:

New Publication Wizard

Filter Table Rows

Add filters to published tables. Extend the filters to other tables by adding joins.

Filtered Tables:

- Branch (dbo)
 - Employee (dbo)
 - Bill (dbo)
 - Bill Detail (dbo)
 - Table (dbo)

Filter: JOIN ... ON [Branch].[ID] = [Employee].[Branch]

Buttons: Add, Edit..., Delete..., Find Table..., Help, < Back, Next >, Finish >>, Cancel

New Publication Wizard

Snapshot Agent

Specify when to run the Snapshot Agent.

Subscriptions are initialized with a snapshot of publication schema and data. The Snapshot Agent creates the snapshot.

☒ Create a snapshot immediately

☒ Schedule the Snapshot Agent to run at the following times:

Occurs every day at 12:05:00 AM. Schedule will be used starting on 4/27/2021.

Change...

If you plan to change the snapshot properties, do not start the Snapshot Agent until after you change the properties in the publication property dialog box.

Buttons: Help, < Back, Next >, Finish >>, Cancel


New Publication Wizard

Agent Security

For each agent, specify the account under which it will run and its connection settings.

Snapshot Agent:

Security Settings...

 You must specify a login for each replication agent before continuing the wizard.

Help < Back Next > Finish >> Cancel

Snapshot Agent Security

Specify the domain or machine account under which the Snapshot Agent process will run.

☐ Run under the following Windows account:

Process account:
Example: domain\account

Password:
Confirm Password:

☒ Run under the SQL Server Agent service account (This is not a recommended security best practice.)

Connect to the Publisher

☐ By impersonating the process account

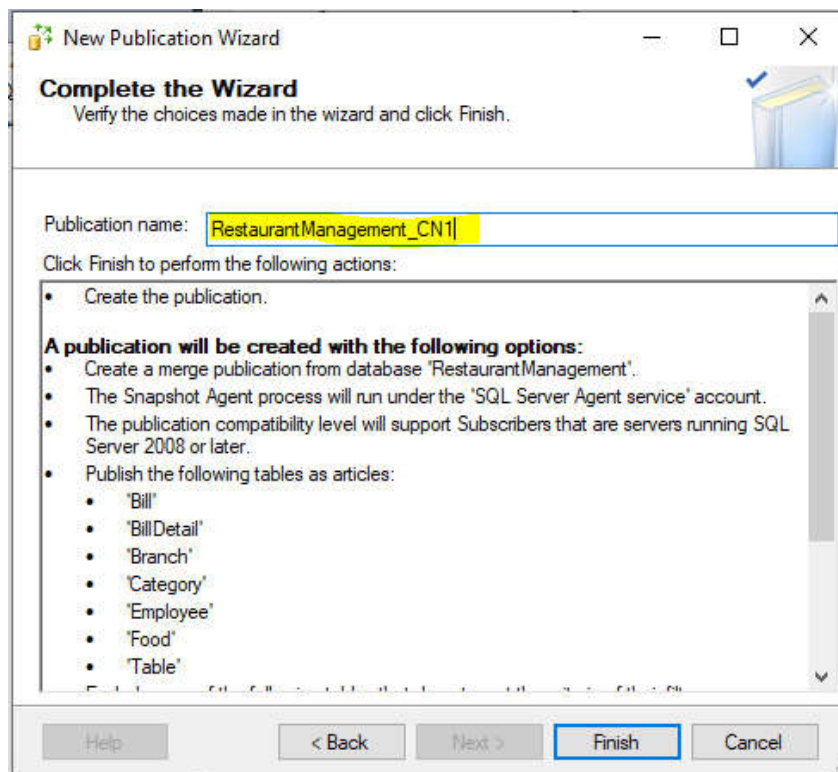
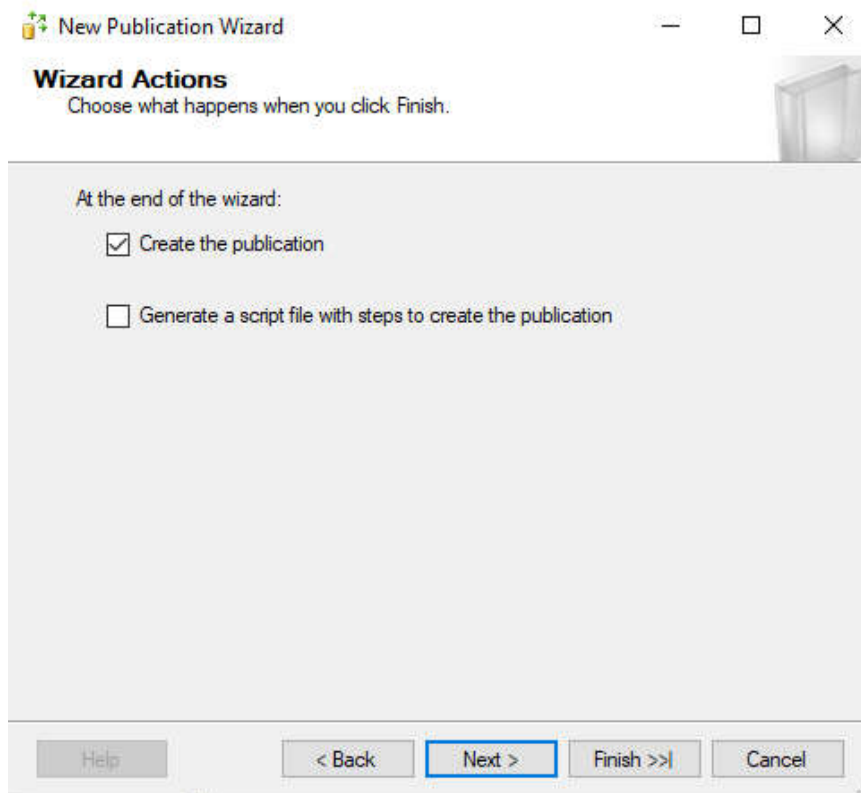
☒ Using the following SQL Server login:

Login:

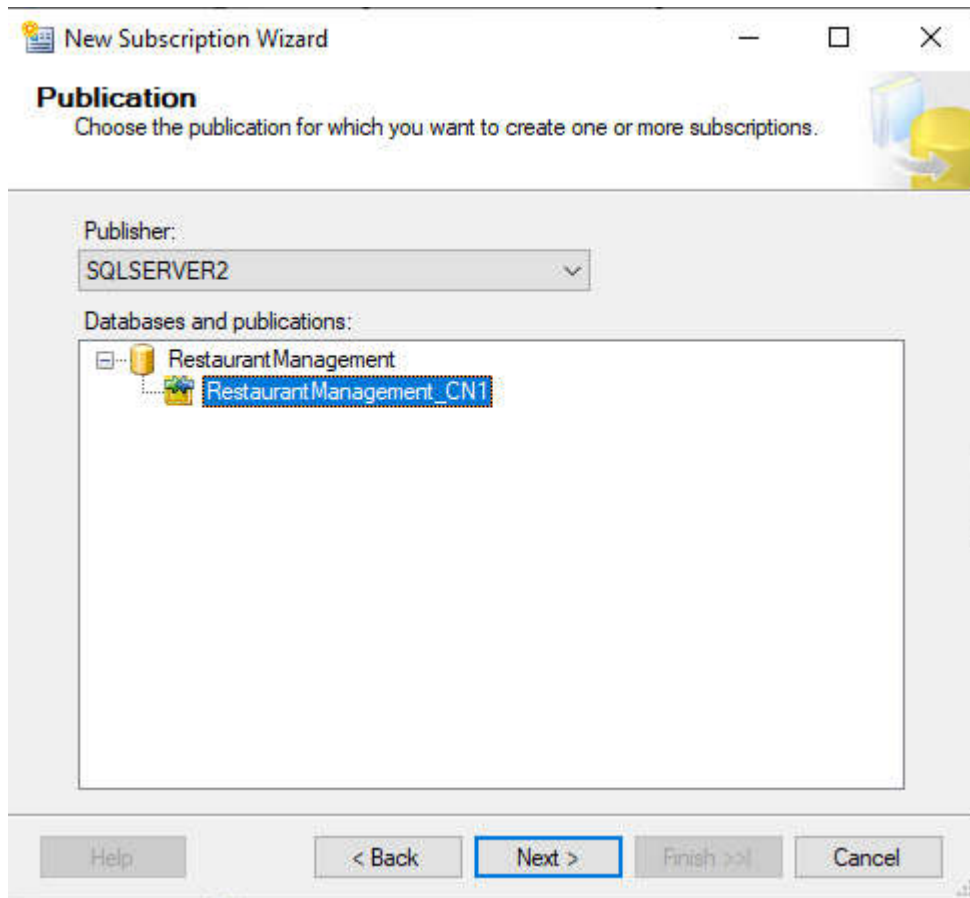
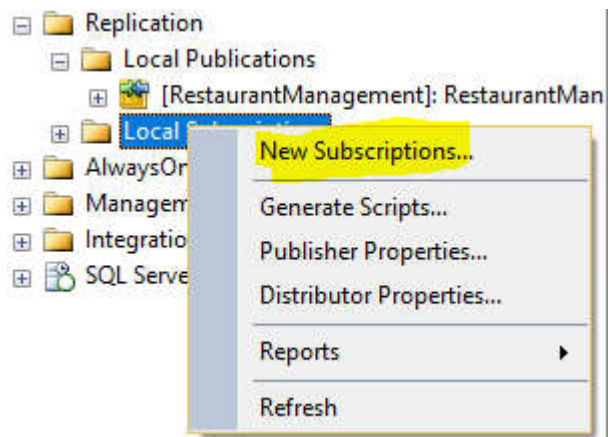
Password:

Confirm Password:

OK Cancel Help



4. Bước 4: Tạo Subscription



New Subscription Wizard

Merge Agent Location

Choose where to run the Merge Agent(s).

For the subscriptions I create in this wizard:

☒ Run all agents at the Distributor, SQLSERVER2 (push subscriptions)

This option makes it easier to administer the synchronization of subscriptions centrally.

☐ Run each agent at its Subscriber (pull subscriptions)

This option reduces the processing overhead at the Distributor and lets each Subscriber administer the synchronization of its subscription.

Run the wizard more than once if you want some agents to run at the Distributor and some to run at Subscribers.

Help < Back **Next >** Finish >> Cancel

New Subscription Wizard


Subscribers

Choose one or more Subscribers and specify each subscription database.

Subscribers and subscription databases:

Subscriber	Subscription Database
<input type="checkbox"/> SQLSERVER2	

[Add SQL Server Subscriber...](#)

 You must select a Subscriber and specify the subscription database to continue the wizard.

Help < Back Next > Finish >> Cancel

New Subscription Wizard

Subscribers

Choose one or more Subscribers and specify each subscription database.

Subscribers and subscription databases:

Subscriber ▲	Subscription Database
<input type="checkbox"/> SQLSERVER2	
<input checked="" type="checkbox"/> SQLSERVER1\MSSQLSERVER1	RestaurantManagement ▼

Add SQL Server Subscriber...

Help < Back Next > Finish >> Cancel

New Subscription Wizard

Merge Agent Security

Specify the process account and connection options for each Merge Agent.

Subscription properties:

Agent for Subscriber ▲	Connection to Publisher ...	Connection to Subscriber	
SQLSERVER1\MSSQLSE...	Click (...) to set securit...	Click (...) to set security...	...

You must specify the security information for all subscriptions before continuing the wizard.
Click (...) to set the security options.

Help < Back Next > Finish >> Cancel

Merge Agent Security

Specify the domain or machine account under which the Merge Agent process will run when synchronizing this subscription.

☐ Run under the following Windows account:

Process account:

Example: domain\account

Password:

Confirm Password:

☒ Run under the SQL Server Agent service account (This is not a recommended security best practice.)

Connect to the Publisher and Distributor:

☒ By impersonating the process account

☐ Using a SQL Server login

The connection to the server on which the agent runs must impersonate the process account. The process account must be a member of the Publication Access List.

Connect to the Subscriber:

☐ By impersonating the process account

☒ Using the following SQL Server login:

Login:

Password:

Confirm password:

The login used to connect to the Subscriber must be a database owner of the subscription database.

OK Cancel Help

New Subscription Wizard

Synchronization Schedule

Specify the synchronization schedule for each agent.

Agent schedule:

Subscriber	Agent Location	Agent Schedule
SQLSERVER1\M...	Distributor	Run continuously

Help < Back Next > Finish >> Cancel


New Subscription Wizard

Initialize Subscriptions
Specify whether to initialize each subscription with a snapshot of the publication data and schema.

Subscription properties:

Subscriber	Initialize	Initialize When
SQLSERVER1\MSSQLS...	<input checked="" type="checkbox"/>	Immediately

A subscription database needs to be initialized with a snapshot of the publication data and schema unless it has already been specially prepared for the subscription.

 The Snapshot Agent must run and generate a snapshot of the publication before the subscriptions can be initialized.

Help < Back **Next >** Finish >>| Cancel

New Subscription Wizard

Subscription Type
Specify the type of each subscription and assign a priority for conflict resolution.

Subscription properties:

Subscriber	Subscription Type	Priority for Conflict Resolution
SQLSERVER1\M...	Server	75.00

A server subscription can republish the data to, and be a synchronization partner with, other Subscribers. It has its own priority, a number between 0 (lowest priority) and 99.99 (highest priority), for resolving data conflicts. In addition, changes made to download-only articles at the Subscriber are replicated back to the Publisher.

Help < Back **Next >** Finish >>| Cancel

- Chọn Next → Finish
- Làm tương tự cho phân mảnh 2
- Kiểm tra lại CSDL đã được phân mảnh

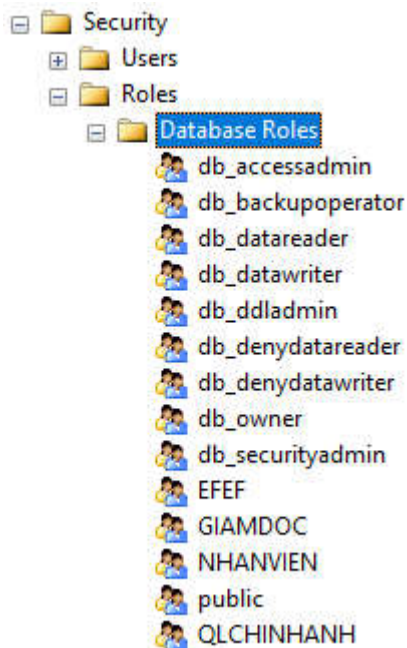
II. TẠO NHÓM NGƯỜI DÙNG VÀ NGƯỜI DÙNG TRONG SQL SERVER

1. Tìm hiểu về các quyền và nhóm quyền trong SQL server: database role , server role

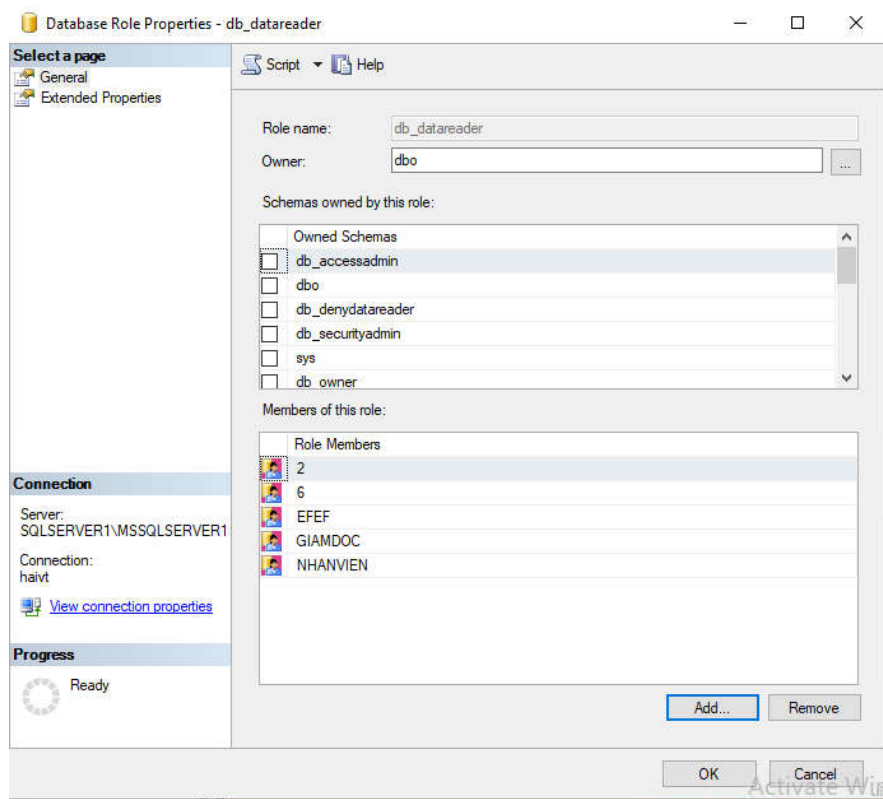
<https://quantrimang.com/tim-hieu-ve-khai-niem-role-trong-sql-server-82533>

<https://viblo.asia/p/gioi-thieu-user-logins-server-roles-database-schemas-trong-sql-server-ByEZkGVWZQ0>

2. Tạo 3 nhóm người dùng GIAMDOC, QLCHINHANH, NHANVIEN : Chọn database RestaurantManagement → Security → Role → Database Role → chuột phải chọn New Database Role



3. Thêm nhóm GIAMDOC là thành viên của db_datareader (chỉ cho đọc dữ liệu) như sau: chuột phải vào db_datareader, trong tab Role Members chọn Add (xem hình 2)
4. Tương tự, thực hiện cho 2 nhóm QLCHINHANH và NHANVIEN như sau:
 - QLCHINHANH: là thành viên của nhóm db_owner
 - NHANVIEN: là thành viên của nhóm db_datareader, db_writer



Hình 2 – Thêm thành viên cho nhóm db_datareader

III. XÂY DỰNG THỦ TỤC TẠO NGƯỜI DÙNG MỚI

1. Tạo thủ tục có nội dung như sau trên site chính (chưa phân mảnh):

```

CREATE PROC sp_TaoTaiKhoan
    @LGNAME NVARCHAR(50),
    @PASS NVARCHAR(50),
    @USERNAME NVARCHAR(50),
    @ROLE NVARCHAR(50)
AS
BEGIN
    DECLARE @RET INT
    EXEC @RET = SP_ADDLOGIN @LGNAME, @PASS, 'RestaurantManagement'

    IF (@RET = 1) -- LGNAME BỊ TRÙNG
        RETURN 1

    EXEC @RET = SP_GRANTDBACCESS @LGNAME, @USERNAME
    IF (@RET = 1) -- USERNAME BỊ TRÙNG
    BEGIN
        EXEC SP_DROPLOGIN @LGNAME
        RETURN 2
    END
    EXEC sp_addrolemember @ROLE, @USERNAME

    IF @ROLE = 'GIAMDOC'
    BEGIN
        EXEC sp_addsrvrolemember @LGNAME, 'sysadmin'
        EXEC sp_addsrvrolemember @LGNAME, 'SecurityAdmin'
        EXEC sp_addsrvrolemember @LGNAME, 'ProcessAdmin'
    END
END

```

```

END

IF @ROLE = 'QLCHINHANH'
BEGIN
    EXEC sp_addsrvrolemember @LGNAME, 'sysadmin'
    EXEC sp_addsrvrolemember @LGNAME, 'SecurityAdmin'
    EXEC sp_addsrvrolemember @LGNAME, 'ProcessAdmin'

END

IF @ROLE = 'NHANVIEN'
BEGIN
    EXEC sp_addsrvrolemember @LGNAME, 'ProcessAdmin'

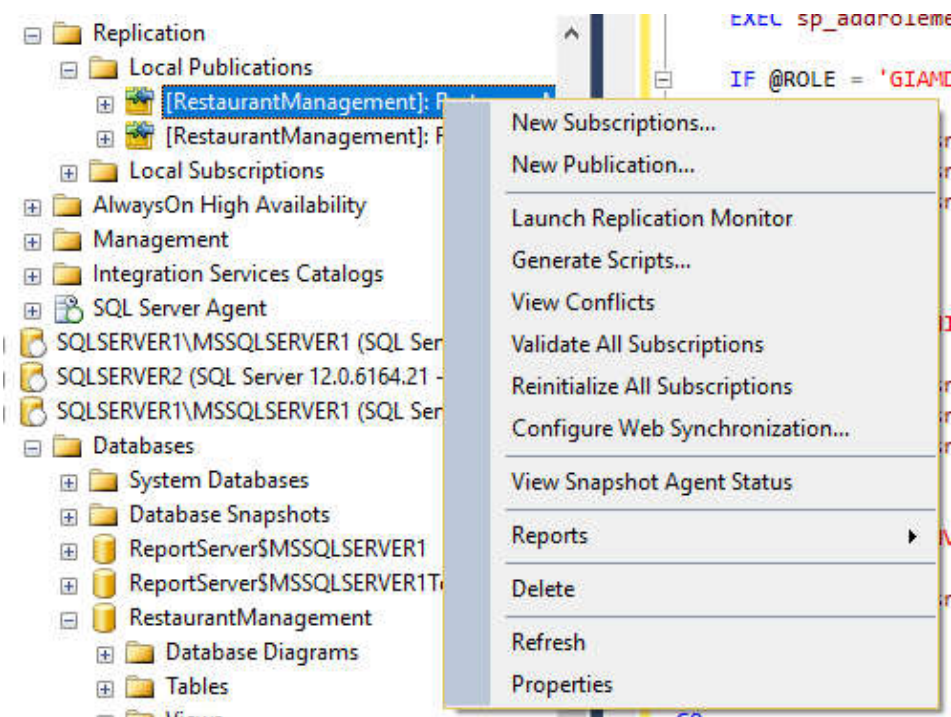
END

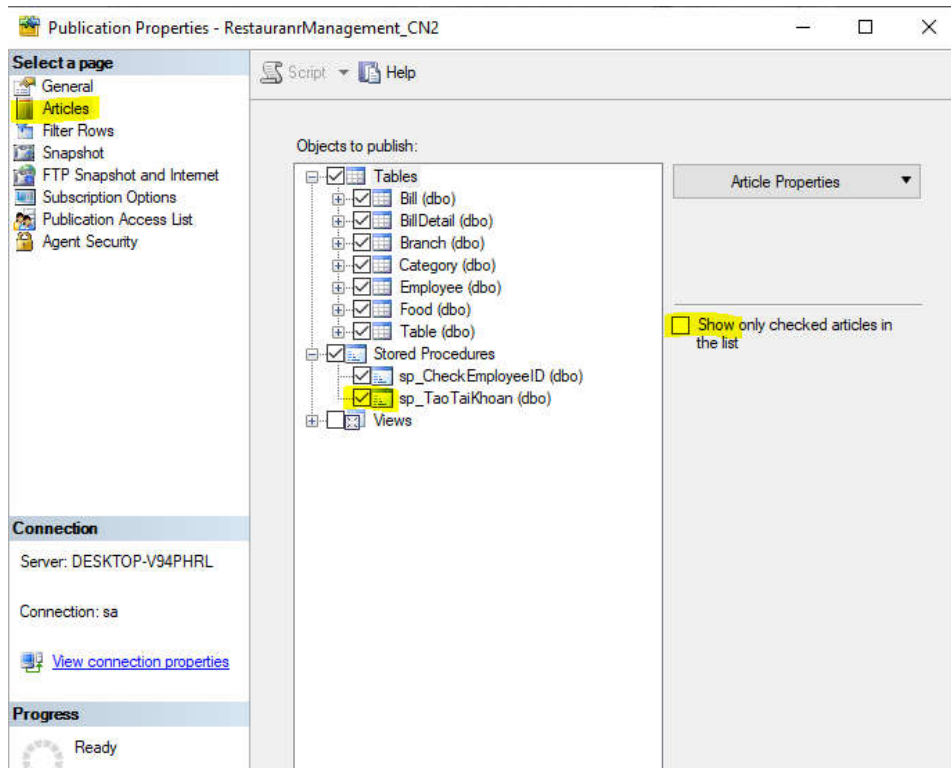
END
GO

```

2. Sau khi tạo xong thủ tục, cần đồng bộ nội dung thủ tục về 2 phân mảnh theo các bước sau:

- Chọn Replication → Local Publications → chuột phải chọn Properties → Article → chọn thủ tục sp_TaoTaiKhoan và nhấn OK





- Chuột phải trên Publications và chọn View Snapshot Agent Status → chọn Start để bắt đầu đồng bộ → 100% nhấn OK
 - Làm tương tự trên Publication còn lại
3. Sử dụng thủ tục vừa tạo, tạo 3 người dùng thuộc 3 nhóm GIAMDOC, QLCHINHANH, NHANVIEN ở từng phân mảnh. Lưu ý: Username là mã nhân viên

