School

Staff

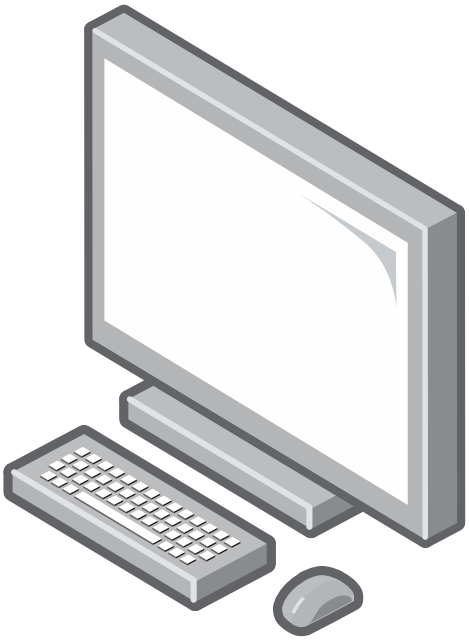
Kehibde

Kola

Ade
20
primary 3

Ade
20
primary 3

Taiwo
19
primary 4



Ade
20
primary 3

Student name

Taiwo
19
primary 4

Taiwo
19
primary 4

Staff name

std_name		
name_std	Class	age
Ade	2	23
Taiwo	4	21

std_name		
name_std	Class	age
Ade	2	23
Taiwo	4	21

Staff_name		

std_name		

name	class_teach	time
kola	4	2pm
kemi	2	4pm

name_std	Class	age
Ade	2	23
Taiwo	4	21

login detail			std_name		
			name_std	Class	age
			Ade	2	23
			Taiwo	4	21

Database

How to delect distribution

. Chect the active replication

```
select is_distributor, name
from sys.databases
where name = 'distributiondb'
```

Distribution name

```
alter database distributiondb set single_user with rollback immediate
```

```
exec sp_detach_db 'distributiondb'
```

Complete SQL Server Replication Guide -- Local SSMS Setup

Understanding SQL Server Replication

is a technology that allow to copy and distribute data and database objects from one database to another to maintain consistency

Why Use Replication

- Load Distribution
- Data Availabilty
- Geographic Distribution
- Reporting

Types of Replication

1. Snapshot Replication

See this as a picture take from camera.
it takes a complete snapshot of the data at a specific point in time

When to use it

when data changes infrequently

cons

can be resource intensive for large dataset

2. Transactional Replication

see this as a mirror in your home, any time there is passing object it reflect.
captures and replicate individual data transactions as they occurs

When to use it

when need near real time data synchronization

Cons

. More complex
. requires stable network connection

3. Merge Replication

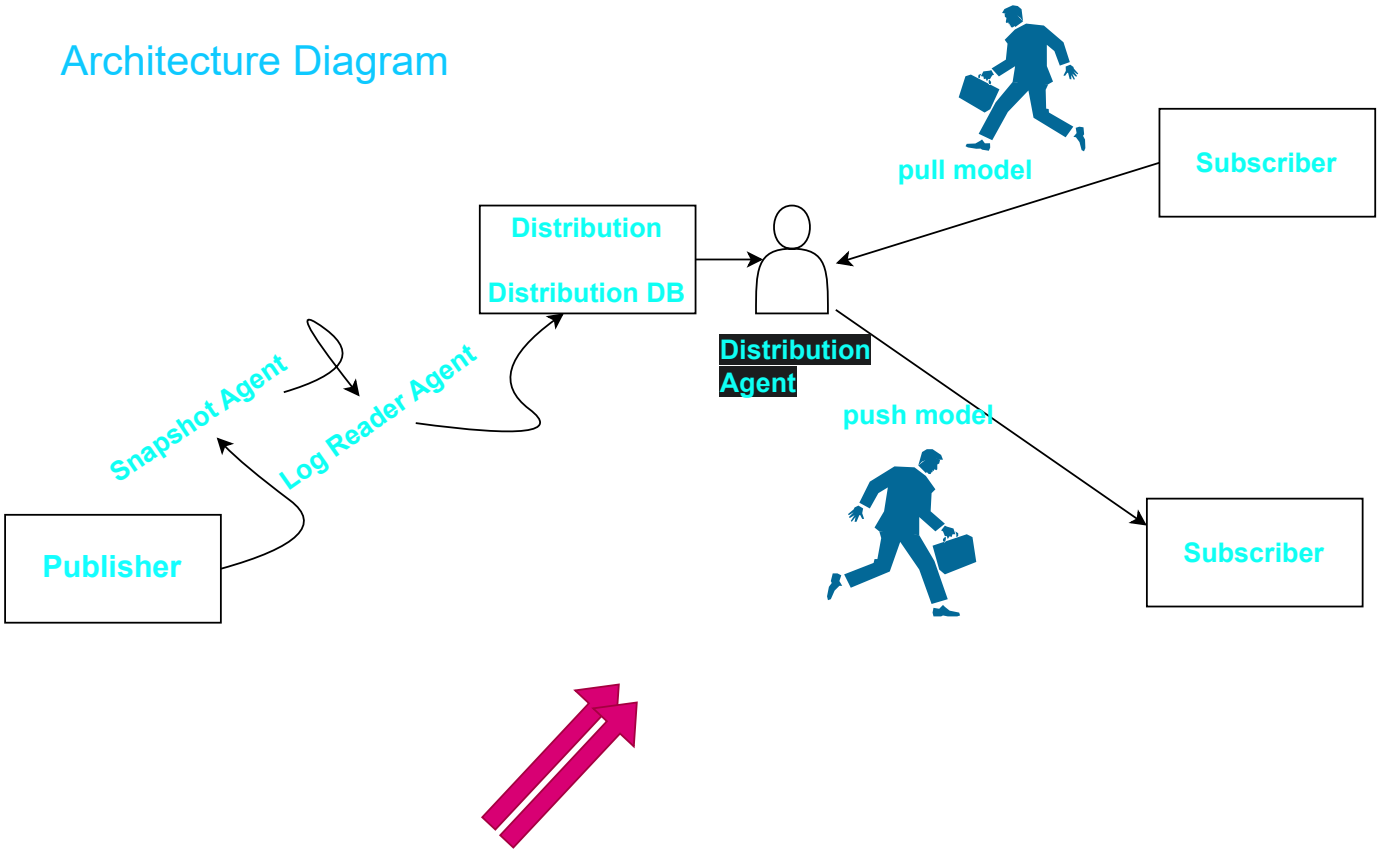
This allows changes at both publisher and subscriber, then merges changes

When to use it

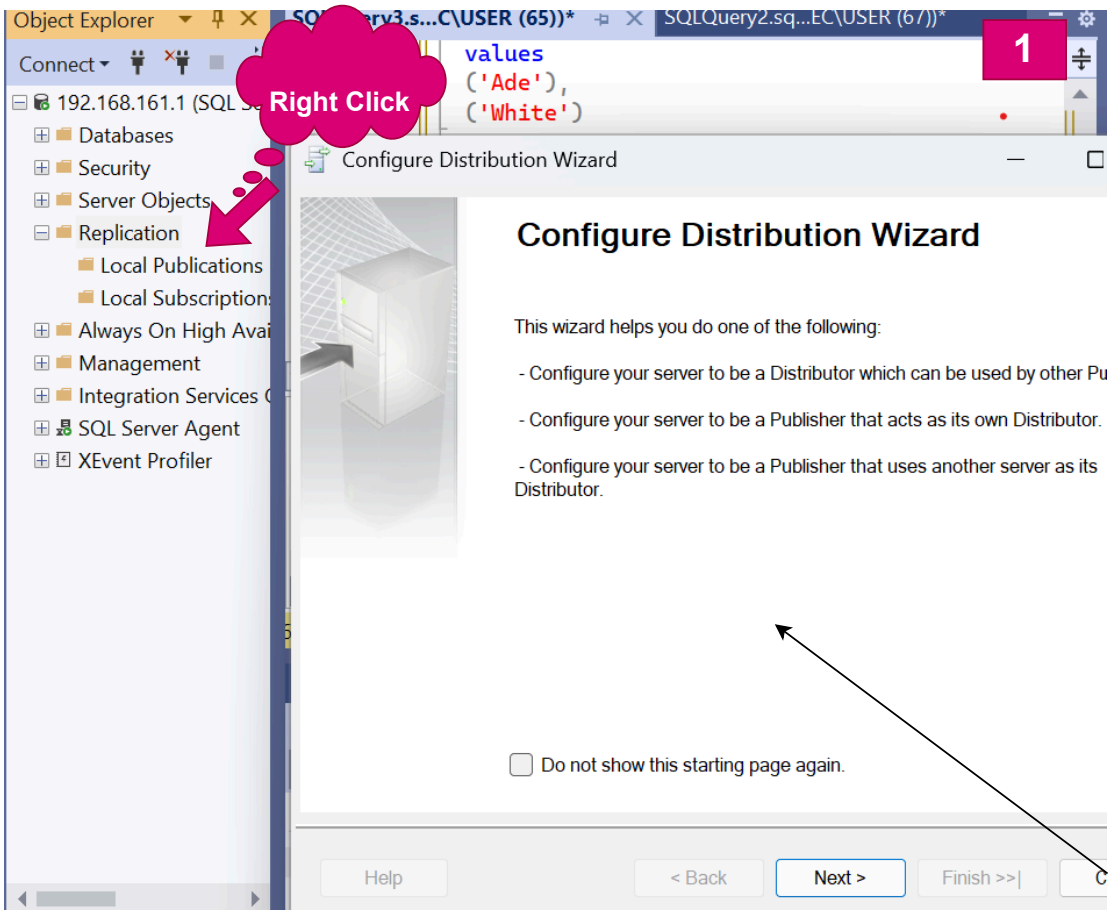
supports bidirectional changes, good for mobiles scenerios

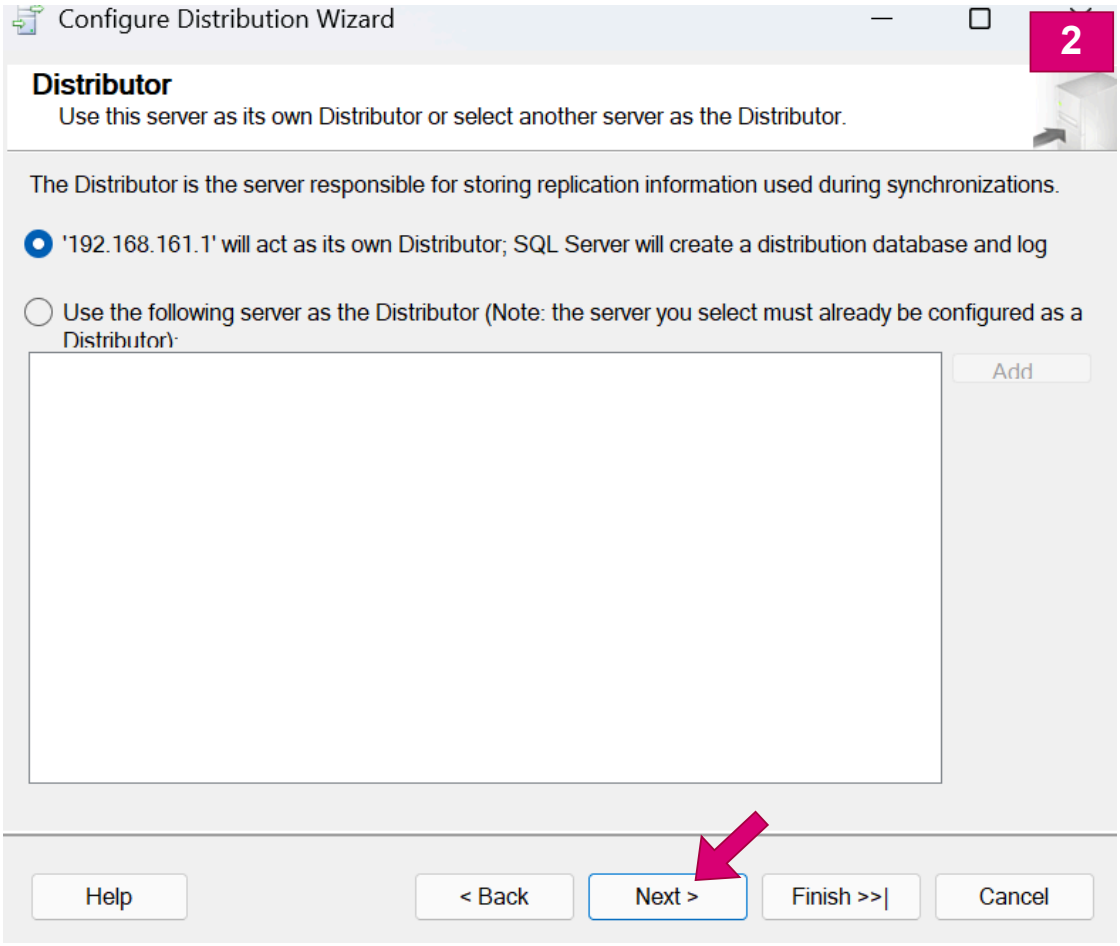
. Most complex to manage

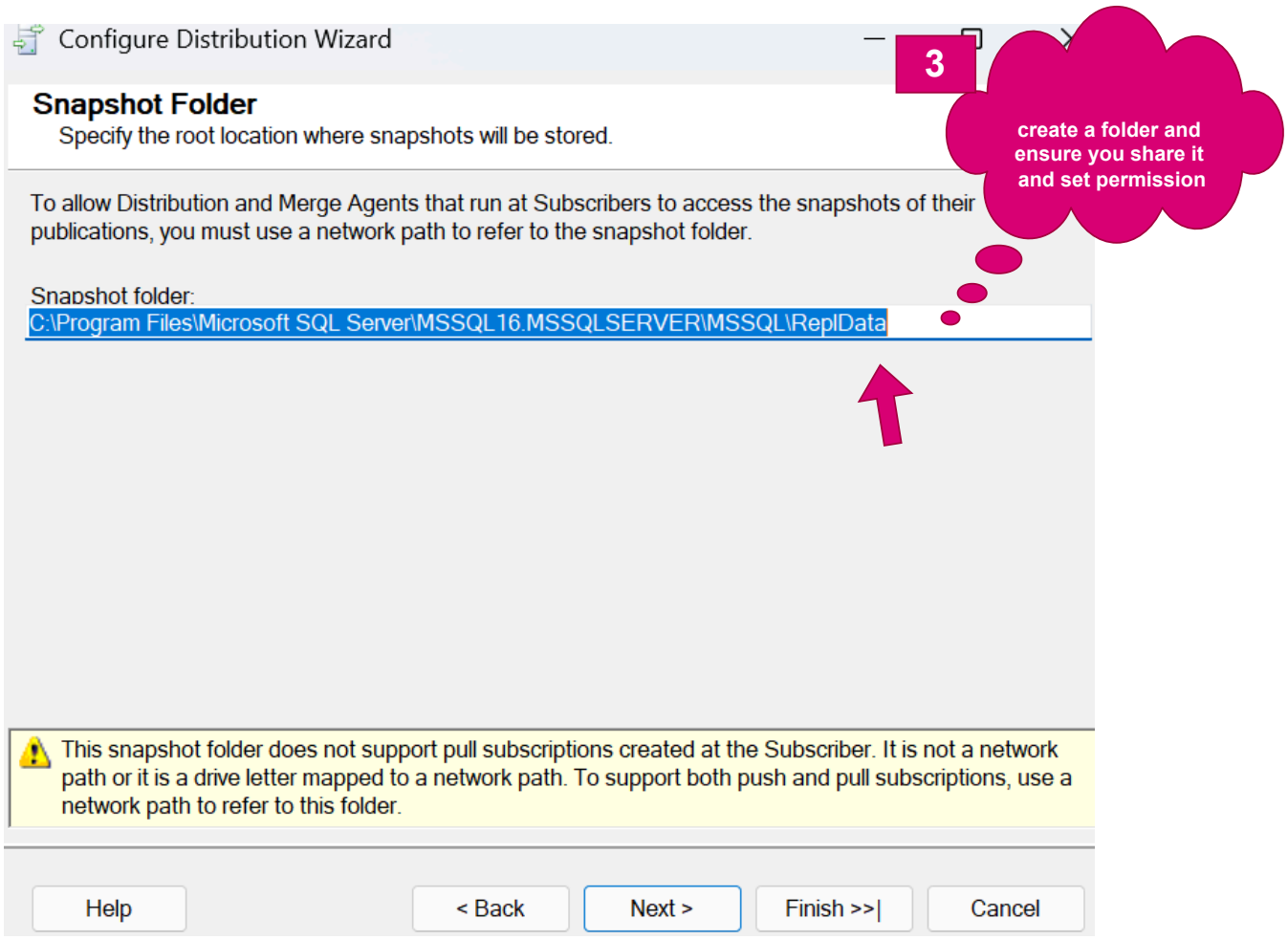
Architecture Diagram

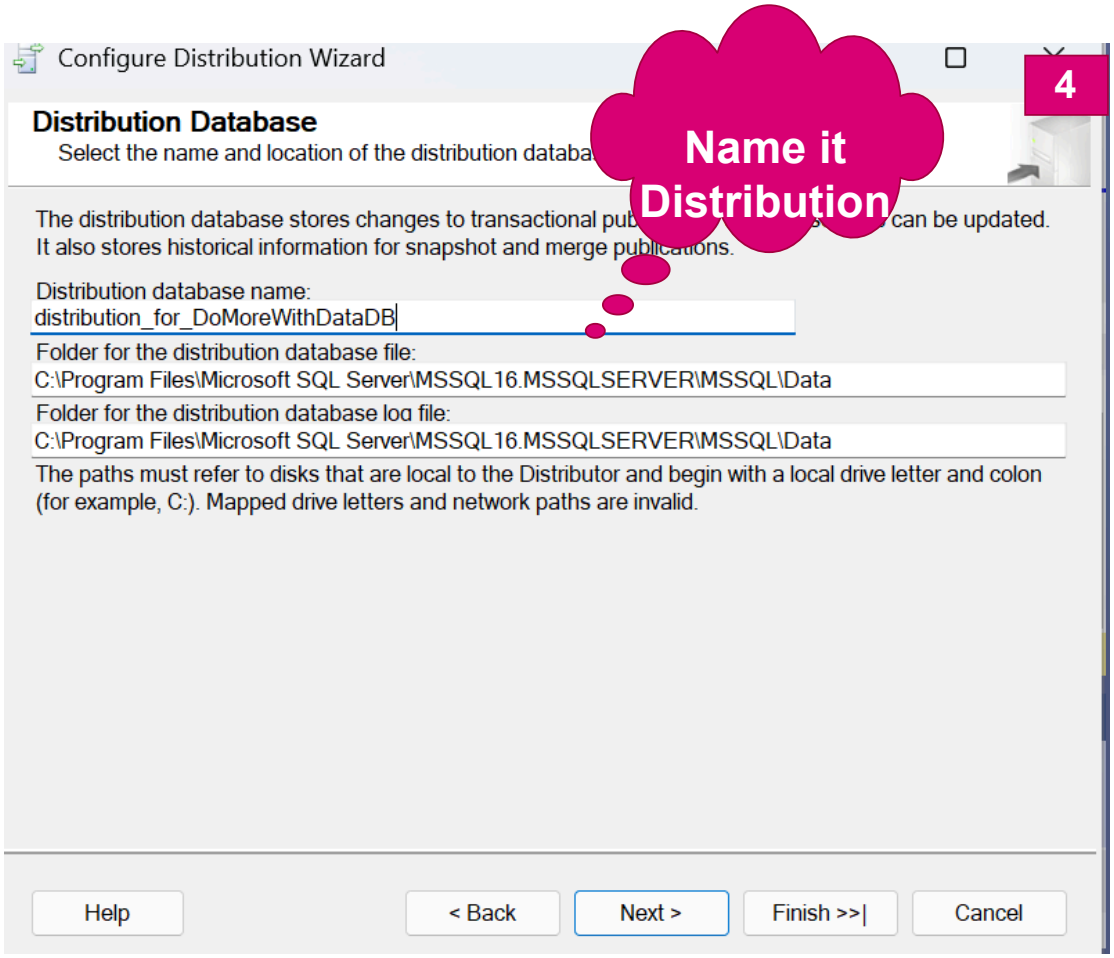


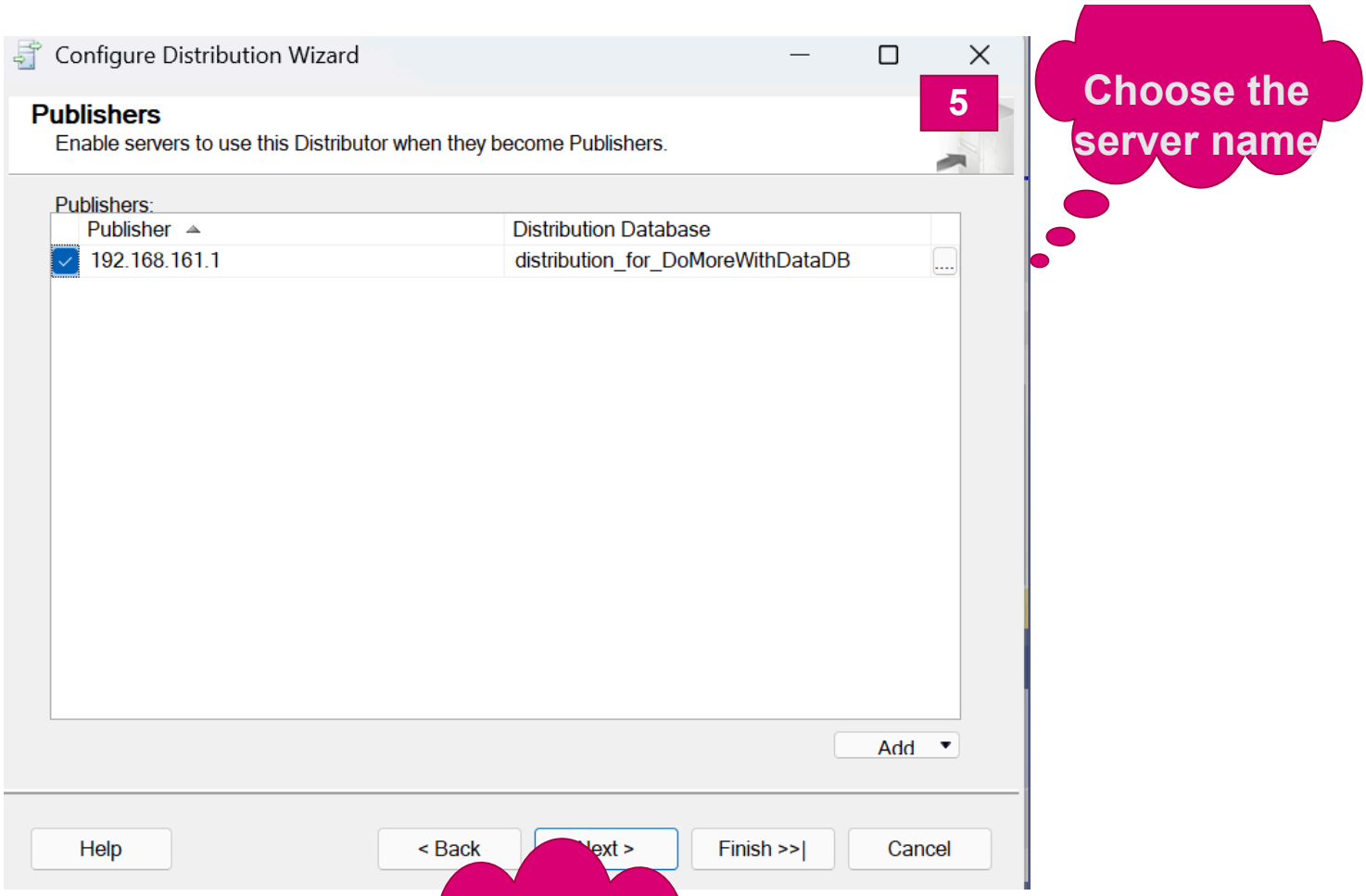
Right Click

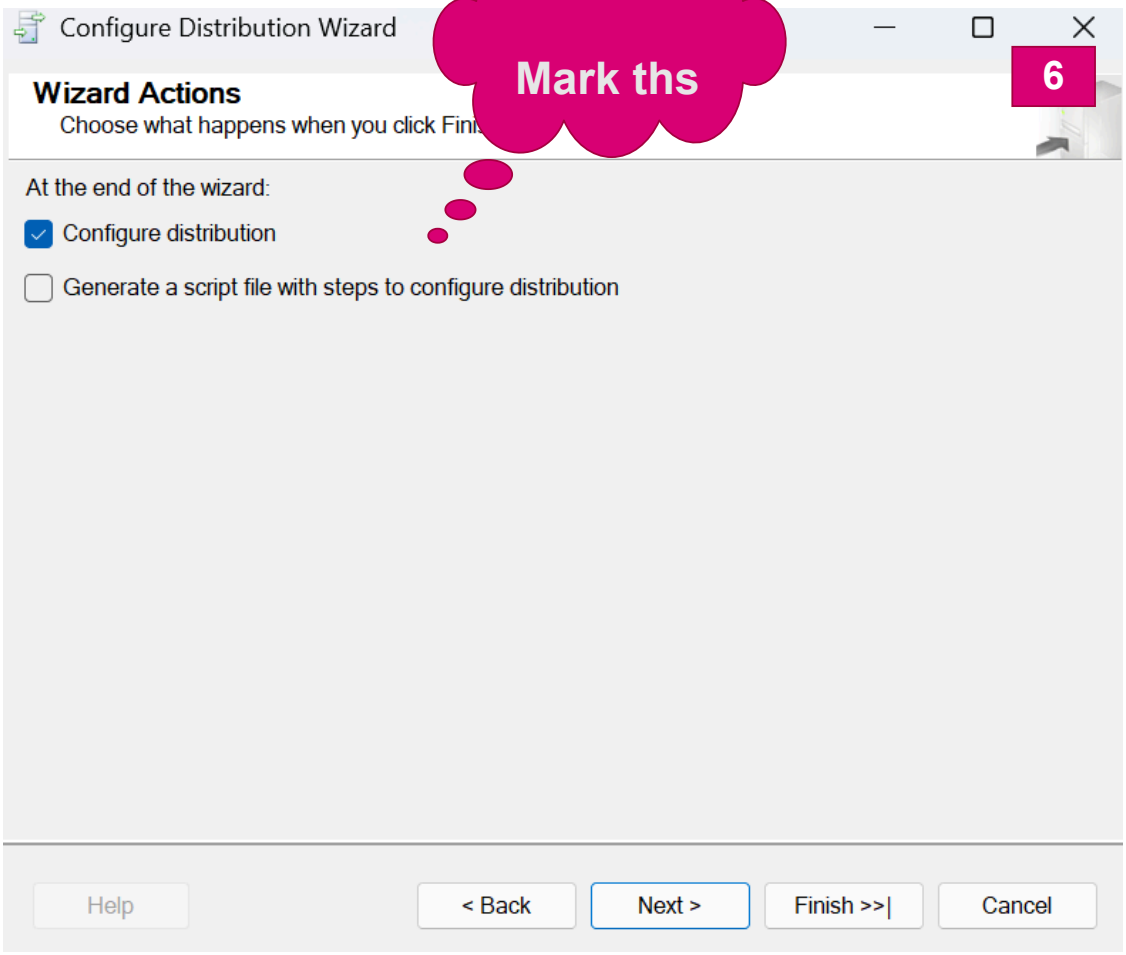

Object Explorer
Connect
192.168.161.1 (SQL
Databases
Security
Server Objects
Replication
Local Publications
Local Subscriptions
Always On High Avai
Management
Integration Services
SQL Server Agent
XEvent Profiler
Right Click
values
('Ade'),
('White')
SQLQuery2.sq...EC\USER (67))*
1
Configure Distribution Wizard
Configure Distribution Wizard
This wizard helps you do one of the following:
- Configure your server to be a Distributor which can be used by other Pu
- Configure your server to be a Publisher that acts as its own Distributor.
- Configure your server to be a Publisher that uses another server as its Distributor.
Do not show this starting page again.
Help
< Back
Next >
Finish >>|

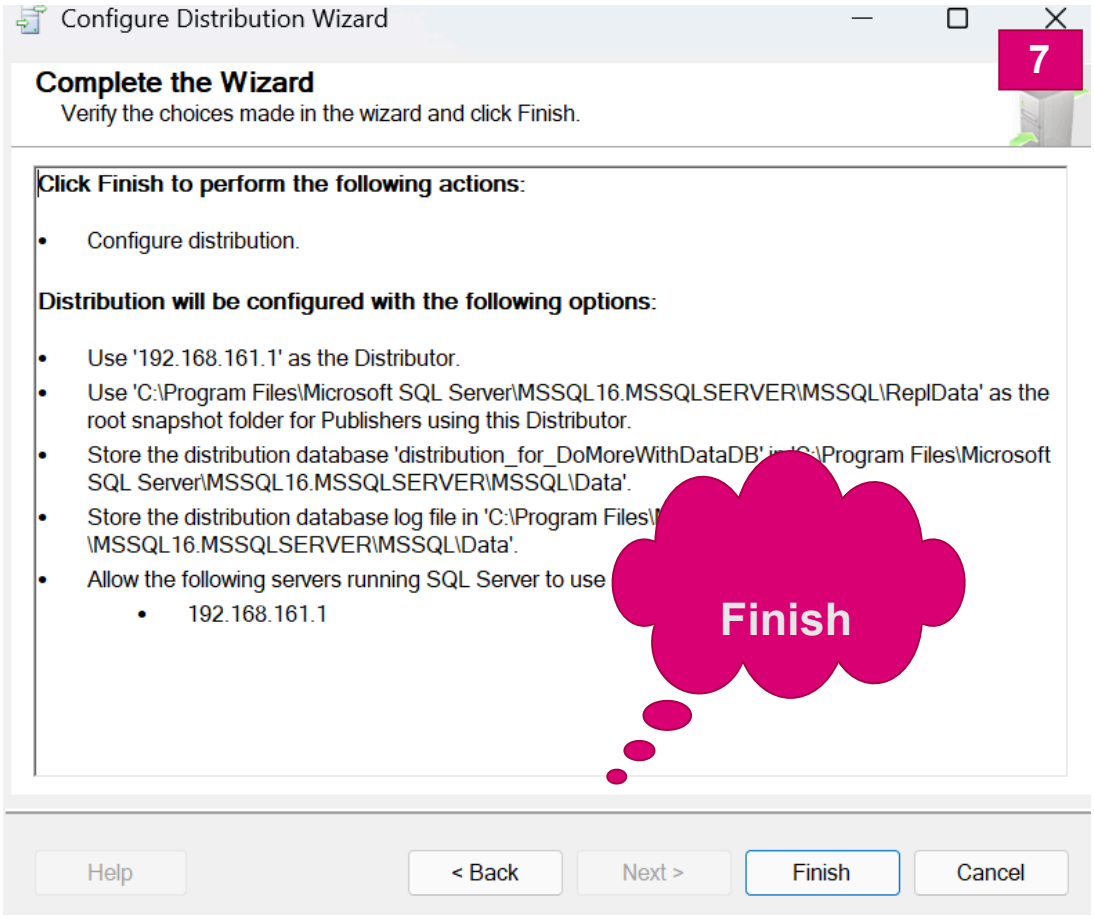

Configure Distribution Wizard
2
Distributor
Use this server as its own Distributor or select another server as the Distributor.
The Distributor is the server responsible for storing replication information used during synchronizations.
'192.168.161.1' will act as its own Distributor; SQL Server will create a distribution database and log
Use the following server as the Distributor (Note: the server you select must already be configured as a Distributor):
Add
Help
< Back
Next >
Finish >>|
Cancel

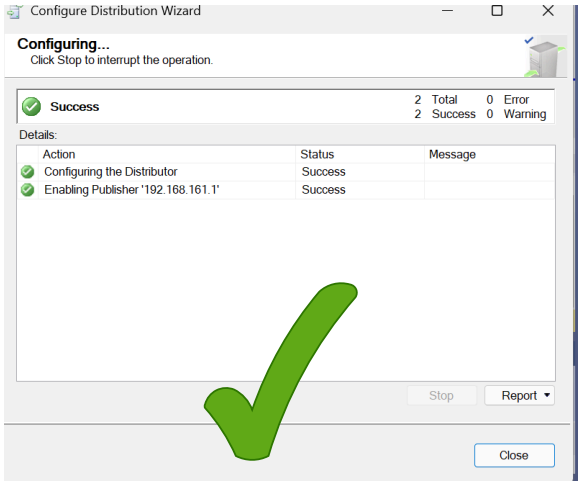

Configure Distribution Wizard
3
create a folder and ensure you share it and set permission
Snapshot Folder
Specify the root location where snapshots will be stored.
To allow Distribution and Merge Agents that run at Subscribers to access the snapshots of their publications, you must use a network path to refer to the snapshot folder.
Snapshot folder:
C:\Program Files\Microsoft SQL Server\MSSQL16.MSSQLSERVER\MSSQL\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

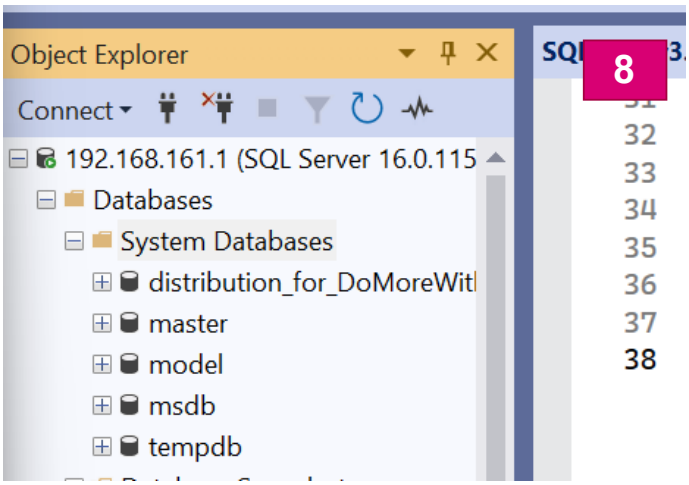

Configure Distribution Wizard
4
Name it Distribution
Distribution Database
Select the name and location of the distribution databa
The distribution database stores changes to transactional pub can be updated.
It also stores historical information for snapshot and merge publications.
Distribution database name:
distribution_for_DoMoreWithDataDB
Folder for the distribution database file:
C:\Program Files\Microsoft SQL Server\MSSQL16.MSSQLSERVER\MSSQL\Data
Folder for the distribution database log file:
C:\Program Files\Microsoft SQL Server\MSSQL16.MSSQLSERVER\MSSQL\Data
The paths must refer to disks that are local to the Distributor and begin with a local drive letter and colon (for example, C:). Mapped drive letters and network paths are invalid.
Help
< Back
Next >
Finish >>|
Cancel

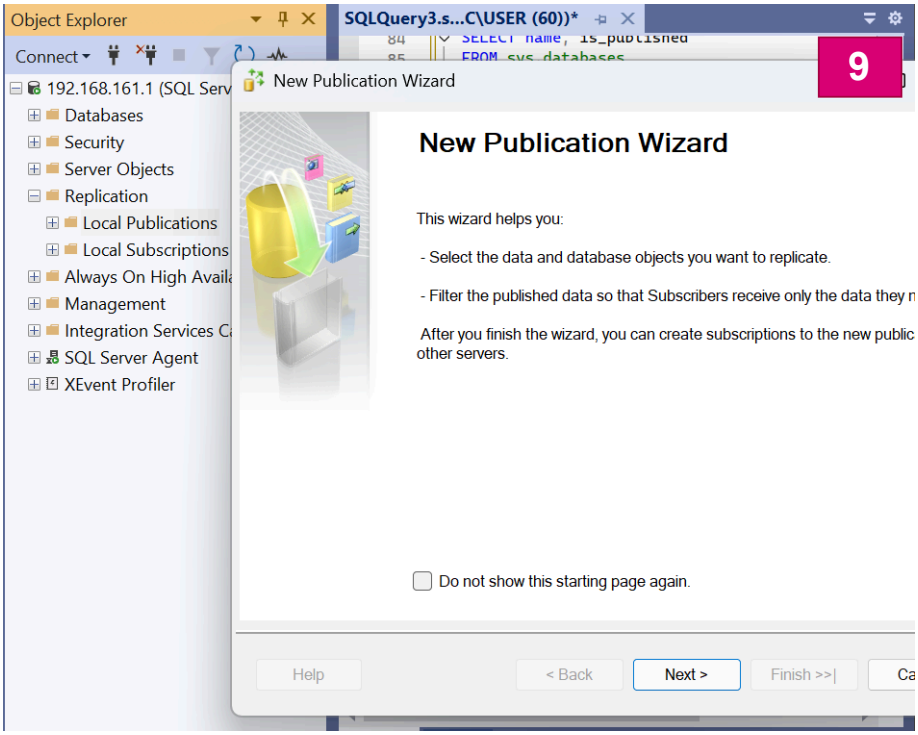

Configure Distribution Wizard
5
Choose the server name
Publishers
Enable servers to use this Distributor when they become Publishers.
Publishers:
Publisher
Distribution Database
192.168.161.1
distribution_for_DoMoreWithDataDB
Add
Help
< Back
Next >
Finish >>|
Cancel

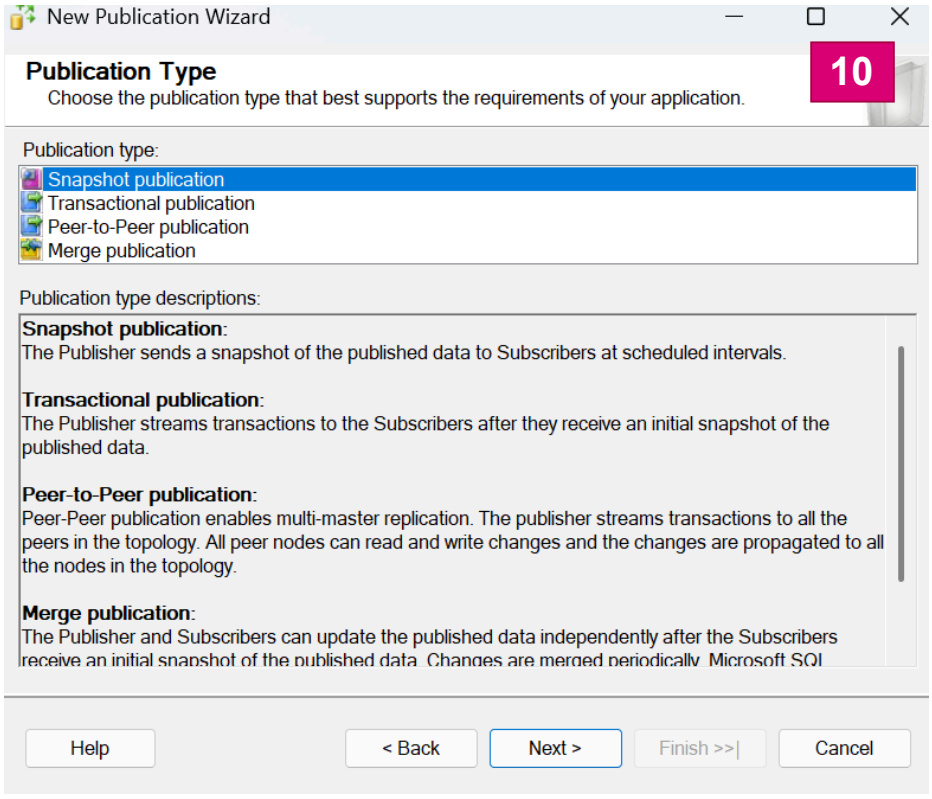

Configure Distribution Wizard
Mark ths
6
Wizard Actions
Choose what happens when you click Fini
At the end of the wizard:
Configure distribution
Generate a script file with steps to configure distribution
Help
< Back
Next >
Finish >>|
Cancel

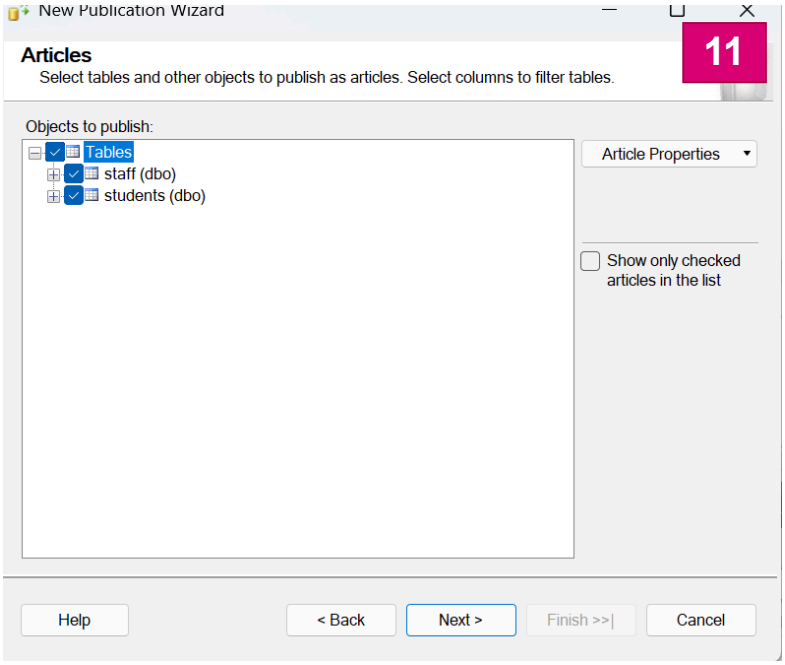

Configure Distribution Wizard
7
Complete the Wizard
Verify the choices made in the wizard and click Finish.
Click Finish to perform the following actions:
Configure distribution.
Distribution will be configured with the following options:
Use '192.168.161.1' as the Distributor.
Use 'C:\Program Files\Microsoft SQL Server\MSSQL16.MSSQLSERVER\MSSQL\ReplData' as the root snapshot folder for Publishers using this Distributor.
Store the distribution database 'distribution_for_DoMoreWithDataDB' in C:\Program Files\Microsoft SQL Server\MSSQL16.MSSQLSERVER\MSSQL\Data'.
Store the distribution database log file in 'C:\Program Files\
\MSSQL16.MSSQLSERVER\MSSQL\Data'.
Allow the following servers running SQL Server to use
192.168.161.1
Finish
Help
< Back
Next >
Finish
Cancel

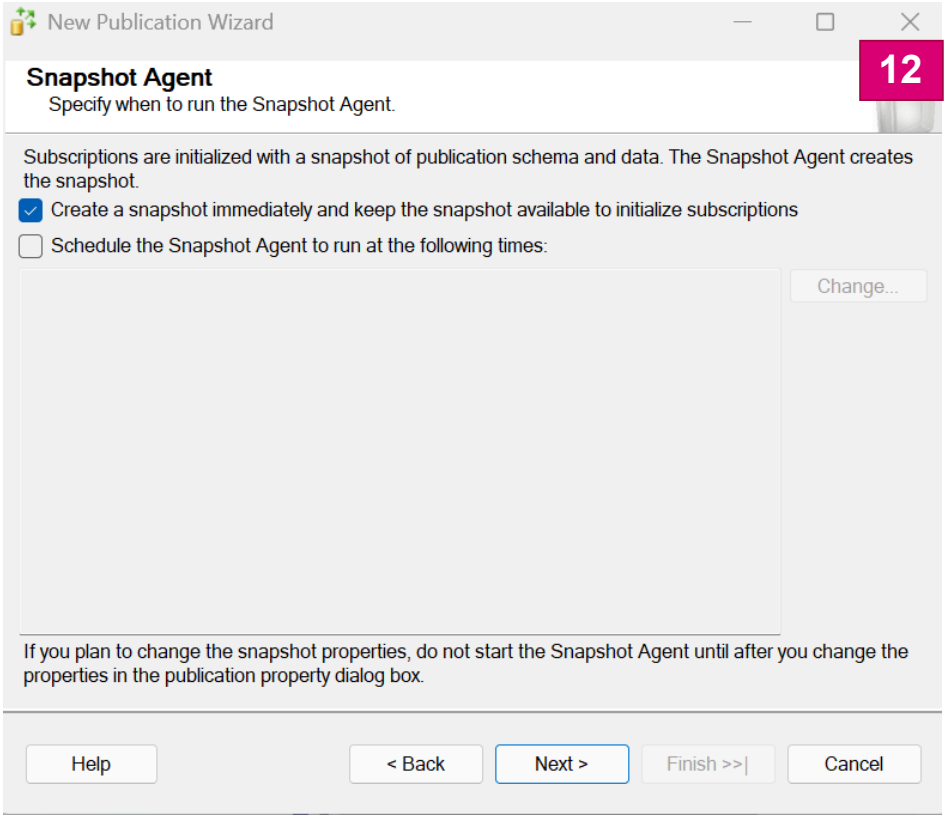

Configure Distribution Wizard
Configuring...
Click Stop to interrupt the operation.
Success
2 Total 0 Error
2 Success 0 Warning
Details:
Action
Status
Message
Configuring the Distributor
Success
Enabling Publisher '192.168.161.1'
Success
Stop
Report
Close

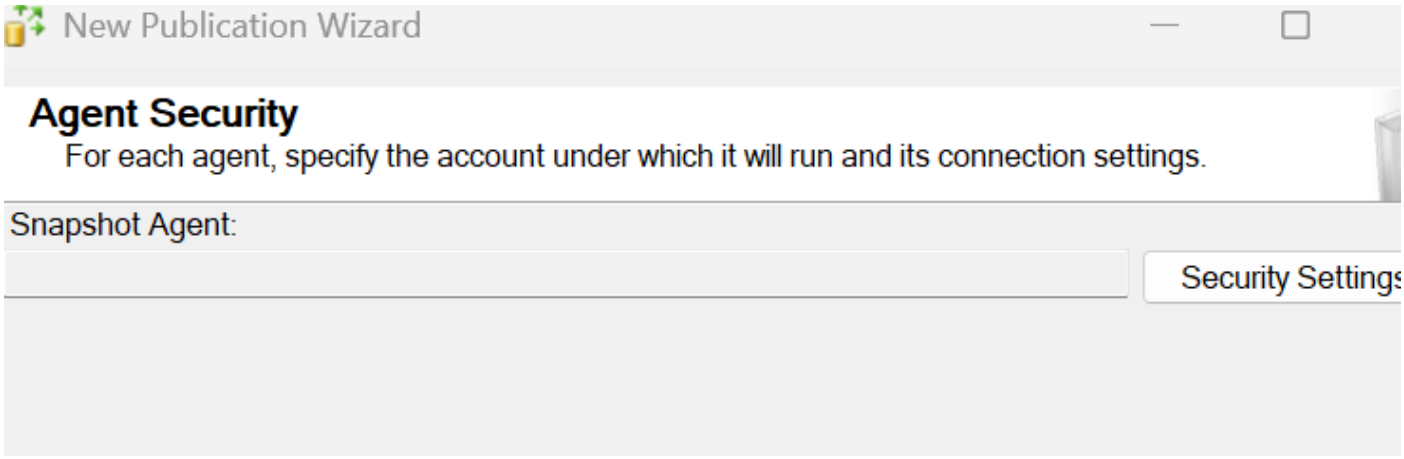

Object Explorer
Connect
192.168.161.1 (SQL Server 16.0.115
Databases
System Databases
distribution_for_DoMoreWitl
master
model
msdb
tempdb
8
32
33
34
35
36
37
38

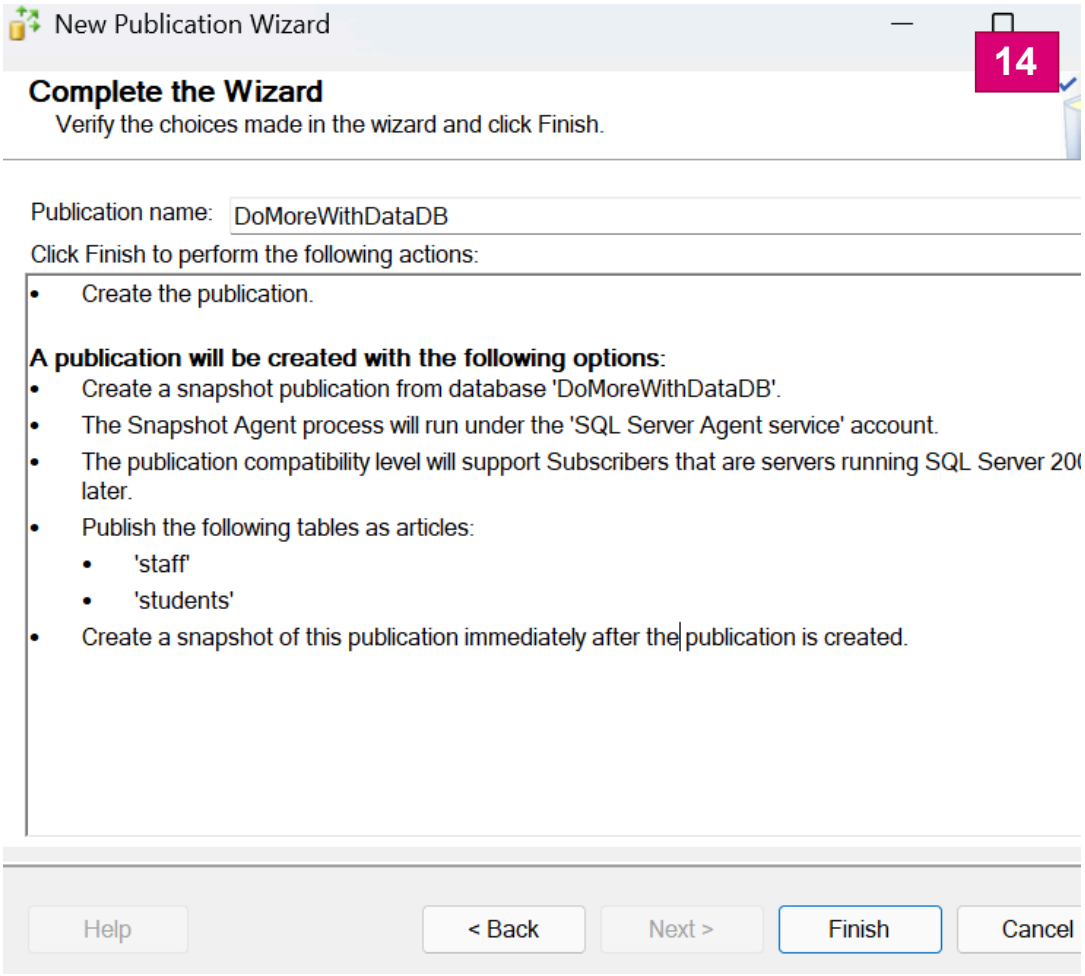

Object Explorer
Connect
192.168.161.1 (SQL Serv
Databases
Security
Server Objects
Replication
Local Publications
Local Subscriptions
Always On High Avail
Management
Integration Services C
SQL Server Agent
XEvent Profiler
SQLQuery3.s...C\USER (60))*
New Publication Wizard
9
New Publication Wizard
This wizard helps you:
- Select the data and database objects you want to replicate.
- Filter the published data so that Subscribers receive only the data they
After you finish the wizard, you can create subscriptions to the new public
other servers.
Do not show this starting page again.
Help
< Back
Next >
Finish >>|

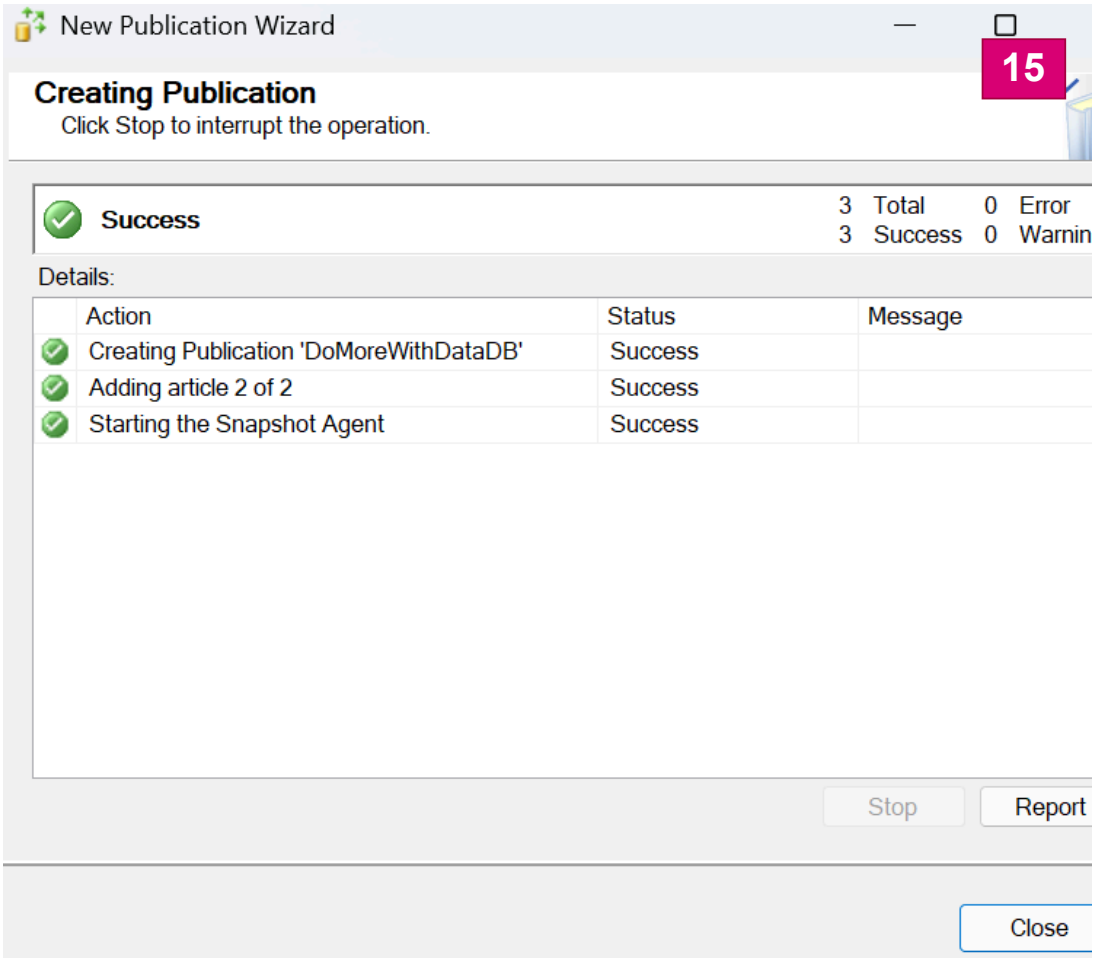

New Publication Wizard
Publication Type
Choose the publication type that best supports the requirements of your application.
10
Publication type:
Snapshot publication
Transactional publication
Peer-to-Peer publication
Merge publication
Publication type descriptions:
Snapshot publication:
The Publisher sends a snapshot of the published data to Subscribers at scheduled intervals.
Transactional publication:
The Publisher streams transactions to the Subscribers after they receive an initial snapshot of the published data.
Peer-to-Peer publication:
Peer-Peer publication enables multi-master replication. The publisher streams transactions to all the peers in the topology. All peer nodes can read and write changes and the changes are propagated to all the nodes in the topology.
Merge publication:
The Publisher and Subscribers can update the published data independently after the Subscribers
Help
< Back
Next >
Finish >>|
Cancel

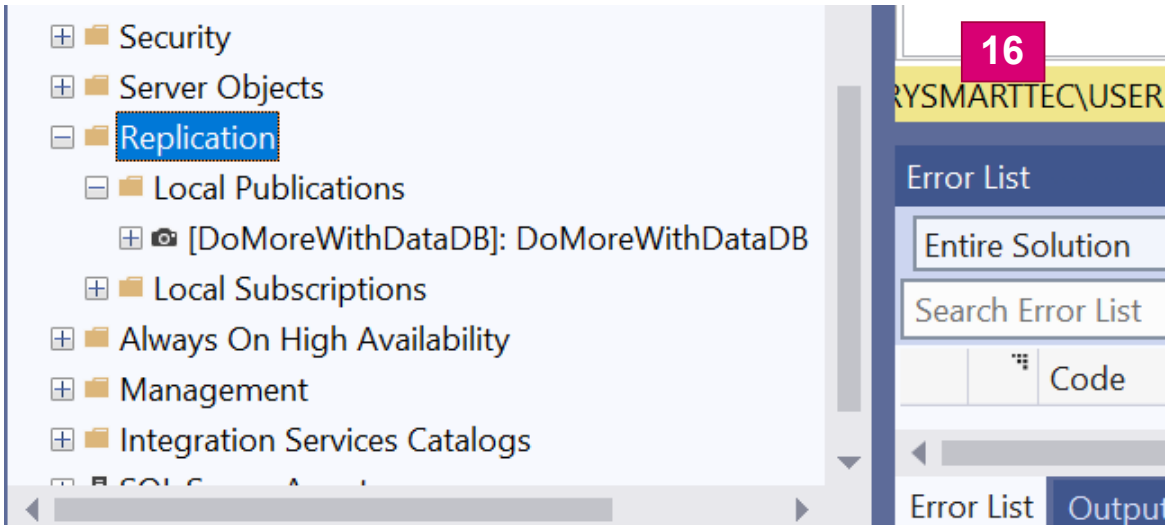

New Publication Wizard
Articles
Select tables and other objects to publish as articles. Select columns to filter tables.
11
Objects to publish:
Tables
staff (dbo)
students (dbo)
Article Properties
Show only checked articles in the list
Help
< Back
Next >
Finish >>|
Cancel

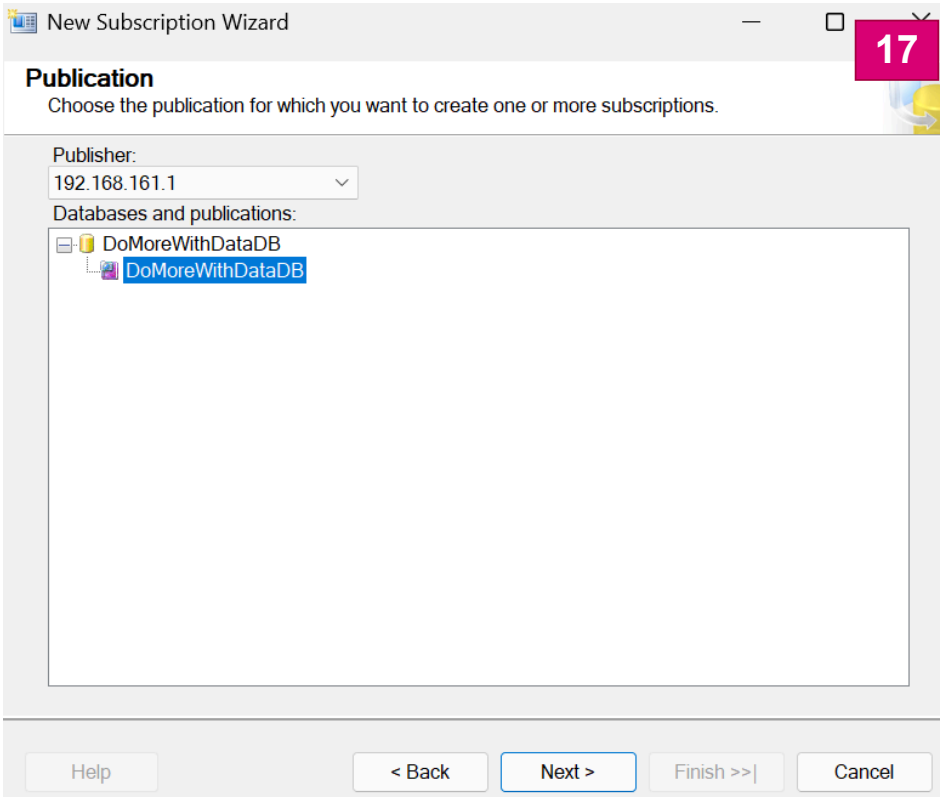

New Publication Wizard
Snapshot Agent
Specify when to run the Snapshot Agent.
12
Subscriptions are initialized with a snapshot of publication schema and data. The Snapshot Agent creates the snapshot.
Create a snapshot immediately and keep the snapshot available to initialize subscriptions
Schedule the Snapshot Agent to run at the following times:
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.
Help
< Back
Next >
Finish >>|
Cancel

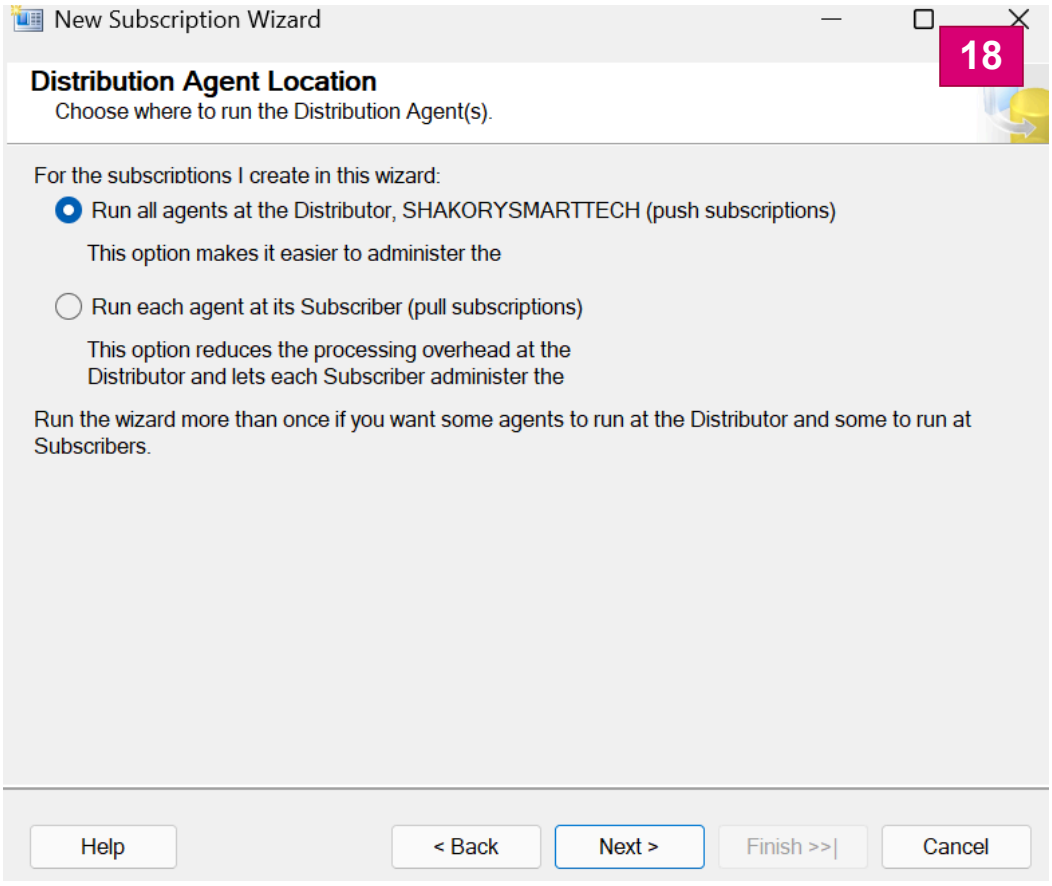

New Publication Wizard
Agent Security
For each agent, specify the account under which it will run and its connection settings.
Snapshot Agent:
Security Settings

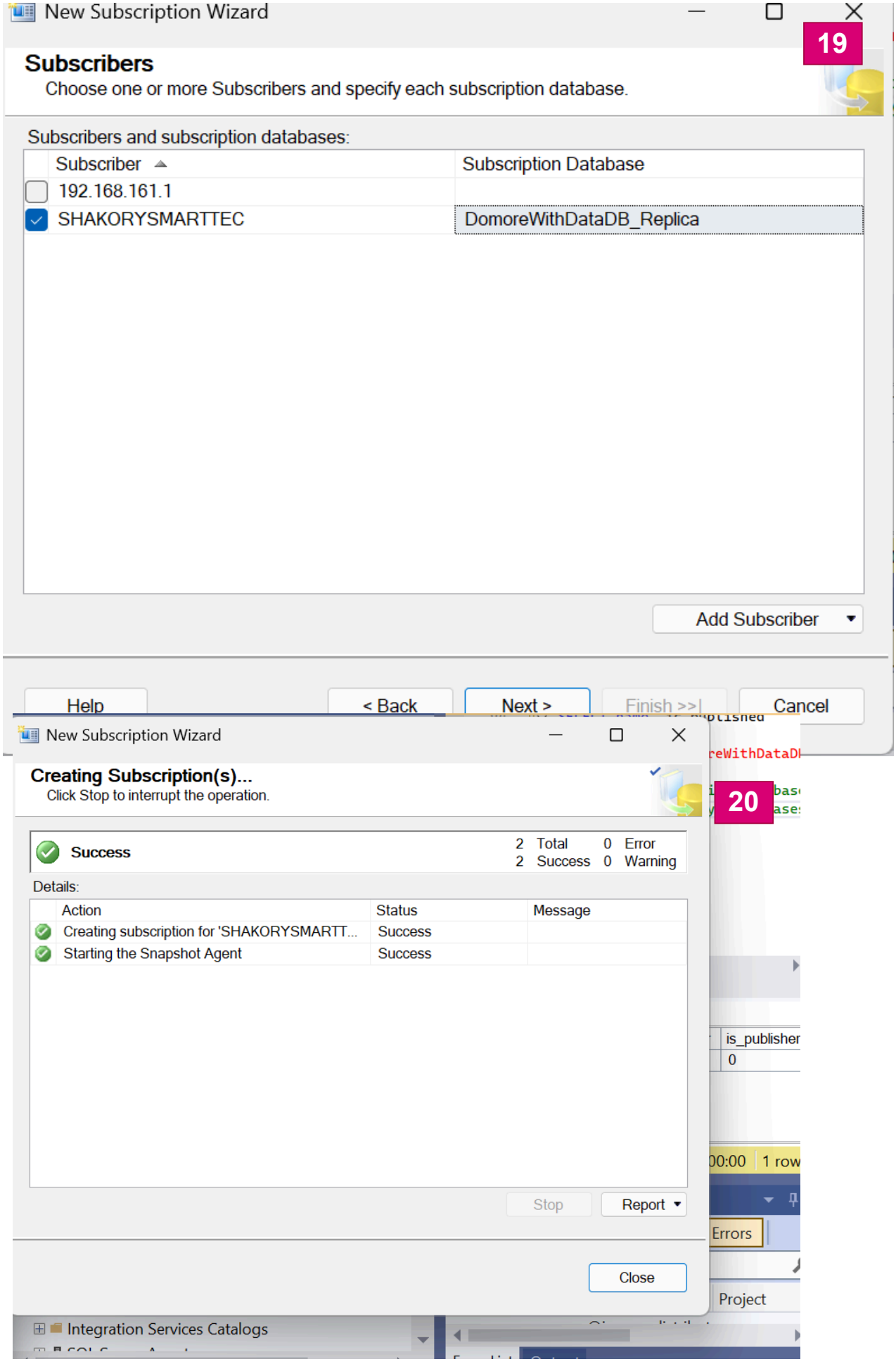

New Publication Wizard
14
Complete the Wizard
Verify the choices made in the wizard and click Finish.
Publication name: DoMoreWithDataDB
Click Finish to perform the following actions:
Create the publication.
A publication will be created with the following options:
Create a snapshot publication from database 'DoMoreWithDataDB'.
The Snapshot Agent process will run under the 'SQL Server Agent service' account.
The publication compatibility level will support Subscribers that are servers running SQL Server 20
later.
Publish the following tables as articles:
'staff'
'students'
Create a snapshot of this publication immediately after the publication is created.
Help
< Back
Next >
Finish
Cancel

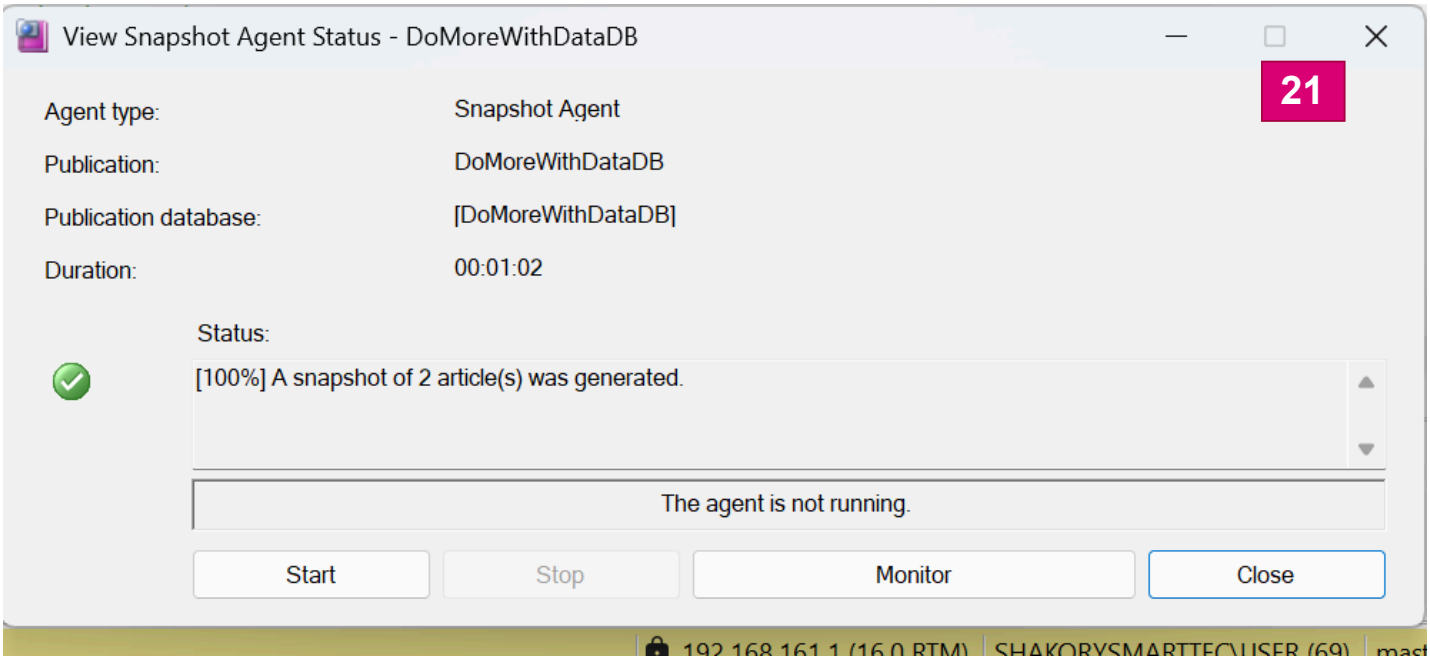

New Publication Wizard
15
Creating Publication
Click Stop to interrupt the operation.
Success
3 Total 0 Error
3 Success 0 Warnin
Details:
Action
Status
Message
Creating Publication 'DoMoreWithDataDB'
Success
Adding article 2 of 2
Success
Starting the Snapshot Agent
Success
Stop
Report
Close


Security
Server Objects
Replication
Local Publications
[DoMoreWithDataDB]: DoMoreWithDataDB
Local Subscriptions
Always On High Availability
Management
Integration Services Catalogs
16
RYSMARTTEC\USER
Error List
Entire Solution
Search Error List
Code
Error List
Output


New Subscription Wizard
17
Publication
Choose the publication for which you want to create one or more subscriptions.
Publisher:
192.168.161.1
Databases and publications:
DoMoreWithDataDB
DoMoreWithDataDB
Help
< Back
Next >
Finish >>|
Cancel


New Subscription Wizard
18
Distribution Agent Location
Choose where to run the Distribution Agent(s).
For the subscriptions I create in this wizard:
Run all agents at the Distributor, SHAKORYSMARTTECH (push subscriptions)
This option makes it easier to administer the
Run each agent at its Subscriber (pull subscriptions)
This option reduces the processing overhead at the Distributor and lets each Subscriber administer the
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
19
Subscribers
Choose one or more Subscribers and specify each subscription database.
Subscribers and subscription databases:
Subscriber
Subscription Database
192.168.161.1
SHAKORYSMARTTEC
DomoreWithDataDB_Replica
Add Subscriber
Help
< Back
Next >
Finish >>|
Cancel
New Subscription Wizard
20
Creating Subscription(s)...
Click Stop to interrupt the operation.
Success
2 Total
0 Error
2 Success
0 Warning
Details:
Action
Status
Message
Creating subscription for 'SHAKORYSMARTT...
Success
Starting the Snapshot Agent
Success
Stop
Report
Close
is_publisher
0
1 row
Errors
Project
Integration Services Catalogs


View Snapshot Agent Status - DoMoreWithDataDB
21
Agent type:
Snapshot Agent
Publication:
DoMoreWithDataDB
Publication database:
[DoMoreWithDataDB]
Duration:
00:01:02
Status:
[100%] A snapshot of 2 article(s) was generated.
The agent is not running.
Start
Stop
Monitor
Close