

# **PSO TO FSM DATA REPLICATION**

This document is to show the basic setup of data replication from PSO to FSM for the purposes of reporting via Ad Hoc reporting in FSM.

In order to support the DS2 Appointment Booking Project Phase 1 reporting requirements data from PSO scheduling application must be populated in FSM to allow the Ad Hoc reporting facility in FSM to access the data. No standard interface exists therefore replication will be used to pass the data to FSM. Reporting requirements and end user reporting tools will be revisited in the next phase of the project.

# **1 USERS SETUP**

In this example a new user has been created FSM\_REPLICATION via Computer Management on the SQL Server:



# **2 REPLICATION SETUP**

## 2.1 Setup replication folder

First, we need to setup a shared folder for the replicated data initial load. Please navigate to: C:\Program Files\Microsoft SQL Server\MSSQLXX.MSSQLSERVER\MSSQL\DATA

Create a folder called repldata

When created RMC on the folder >> Properties >> 'Sharing' tab >> Advanced Sharing >> Tick 'Share this folder'.



Now select 'Permissions' >> Add >> enter 'domain\FSM\_REPLICATION' as per setup in section 1 >> click OK >> Highlight FSM\_REPLICATION >> tick 'Full Control' >> OK and close.

📕 repldata Properties 🛛 🕹	Advanced Sharing $ imes$	📜 Permissions for repldata	>
General Sharing Security Previous Versions Customize Network File and Folder Sharing repIdata Shared Network Path: VLKFVVF4764VepIdata Share.	Share this folder - Settings Share name: repldata Add Remove Limit the number of simultaneous users to: 16777.	Share Permissions Group or user names:	PE4764\FSM_REPLICATION)
Advanced Sharing Set custom permissions, create multiple shares, and set other advanced sharing options.	Comments: Permissions Caching	Permissions for Everyone Full Control Change Read	Add Remove
Close Cancel Apply	OK Cancel Apply	0K	Cancel Apply

Now select the 'Security' tab >> Edit >> Add >> enter 'domain\FSM\_REPLICATION' as per setup in section 1 >> click OK >> Highlight FSM\_REPLICATION >> tick 'Full Control' >> OK and close.

Object name: C:\Program Files\Microsoft SQL Server\MSSQL13	Object name:C\Program Files\Microsoft SDL_Server\MSS	0113
Group or user names: CREATOR OWNER SYSTEM SYSTEM Administratore (I KPV/MPE4764\FSM_REPLICATION CAMPACTION (LKPV/MPE4764\FSM_REPLICATION CAMPACTION (LKPV/MPE4764\FSM_REPLICATION)	Group or user names: CREATOR OWNER SYSTEM SYSTEM SMLREPLICATION (LKPVMPE4764\FSM_REPLICAT) Administrators (LKPVMPE4764\Administrators) SMLSERVER	ON)
Permissions for     Edit       Permissions for     FSM_REPLICATION       Allow     Deny       Full control     ✓       Modify     ✓       Read & execute     ✓       List folder contents     ✓       Write     ✓       For special permissions or advanced settings, click Advanced.     Advanced	Add     Remove       Permissions for     FSM_REPLICATION     Allow     Dereve       Full control     Image: Control image:	ve y v

#### 2.2 Setup Replication Publication

Open SSMS and run SQL script 'PSO to FSM Custom tables.sql' (To be provided by IFS)

Expand Replications >> RMC on 'Local Publications' >> select 'New Publication' >> select 'SchedulingDatabase' >> select 'Transactional publication' >> expand 'Tables' and tick tables: Allocation Plan\_break Plan\_resource

For each article selected RMC on the table >> 'Set Properties of This Table Article'



Objects to publish:	Lopy filtered nonclustered coll False
Objects to publish:	An Destination Object
	Destination object     Destination object
Activity Type (dbo)	Destination object name c_pso_anocation
Article Properties	Action if name is in use Dron existing object and create a new
Activity Type Custom URL (dbo)	Convert data tupes Ealse
Activity_Type_Part (dbo)	Convert TIMESTAMP to BINA False
Activity_Type_Skill (dbo)	Create schemas at Subscriber False
⊕ Additional_Attribute (dbo)	Convert XML to NTEXT False
Additional_Attributes (dbo)	Convert MAX data types to N° False
Aggregate_Member (dbo)     Show only checked articles in	Convert new datetime to NVA False
Aggregated_Activity (dbo)	Convert filestream to MAX dat True
🔄 🗹 🛅 Allocation (dbo)	Convert large CLR to MAX da False
👜 🔚 🛄 Allocation_Data (dbo)	Convert hierarchyld to MAX d. False
⊕ Allocation_Part (dbo)	Convert spatial to MAX data ty False
🖶 🔜 Application_Dataset (dbo)	Enable Memory Optimization False
Appointment_Offer (dbo)	Convert clustered index to nor False
	<ul> <li>Identification</li> </ul>
	Description

The SQL script run previously created three custom FSM tables. Article properties for each table should be amended to point to the appropriate custom FSM table as below:

Allocation - c\_pso\_allocation

Plan\_break - c\_pso\_plan\_break

Plan\_resource- c\_pso\_plan\_resource

The option 'Create schemas at Subscriber' should be set to False as the schemas have been setup via the SQL script. All other properties are to be left as default.

When all three tables have been configured click Next.

Click Next through the filtering Window as filtering is not required.

Tick 'Create a snapshot immediately and keep the snapshot available to initialise subscriptions' and click Next.

For BOTH Snapshot Agent and Log Reader Agent click on 'Security Settings':

Ensure 'Run under the following Windows account' is selected and enter the user details as per setup in section 1.



😚 New Publication Wizard —	$\Box$ $\times$	Snapshot Agent Security
Agent Security For each agent, specify the account under which it will run and its connection settings.	1	Specify the domain or machine account under which the Snapshot Agent process will run.
Snapshot Agent:	ALC: NO.	Run under the following Windows account:
LKPVMPE4764\FSM_REPLICATION Security Settings		Process account: LKPVMPE4764\FSM_REPLICATION Example: domain\account
Log Reader Agent:		Password: Management
Security Settings		Confirm Password:
		Plun under the SQL Server Agent service account (This is not a recommended security best practice.)
		Connect to the Publisher
		By impersonating the process account
		O Using the following SQL Server login:
		Login:
		Password:
Help <a>K Back</a> <a>K State</a>	Cancel	Confirm Password:
		OK Cancel Help

Ensure 'Create the publication' is ticked and click Next.

Name the Publication accordingly and click Finish.

N	ew Publication	Wizard			-		×
Co	weify the choice	Wizard es made in the wiza	rd and click Finish			ľ	-
Pul	blication name:	PSO_REPLICATIO	)N				
Clic	ck Finish to perfo	rm the following acti	ons:				
•	Create the pub	olication.					
•	The Log Read The publication later. Publish the foll • 'Activity_f • 'Allocation	Jer Agent process with n compatibility level lowing tables as artic Resource_Pool_Set n'	ill run under the 'Li will support Subsc cles:	KPVMPE4764\FSN ribers that are servi	4_REPLICATION ers running SQL (	l'account. Server 200	)8 or
•	Create a snap:	shot of this publicati	on immediately aft	er the publication is	created.		
	Help		< Back	Next >	Finish	Canc	el

### 2.3 User assignment

The previous steps will have created a distribution database under System Databases.

Each of the SQL databases that are involved with the replication must now be configured to allow access to the data using the user account setup in section 1.

Open SSMS >> expand Security >> RMC on Logins >> New Login



On the 'General' page, against Login Name click Search >> enter 'domain\FSM\_REPLICATION' as per setup in section 1.

Go to 'User Mapping'

📱 Login - New				_		×
Select a page	🖵 Script	🕶 😯 Help				
<ul> <li>Server Roles</li> <li>User Mapping</li> </ul>	Users maj	oped to this login:				
Securables	Мар	Database	User	Defa	ult Schem	a 🔨
Status		distribution	LKPVMPE4764\FSM_REPLICATION			
		DWConfiguration				
		DWDiagnostics				
		DWQueue				
	$\checkmark$	FSMDev	LKPVMPE4764\FSM_REPLICATION			
		master				
		model				
		msdb				
		ResourcePlanning				
	$\checkmark$	SchedulingDatabase	LKPVMPE4764\FSM_REPLICATION			
		SystemDatabase				~
Connection	<				>	•
Server: LKPVMPE4764	🗹 Guest Database	account enabled for: distril	oution			
Connection: LKPVMPE4764\MERIWW	db_accessadmin					
View connection properties	db datareader					
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For each of the three databases shown ensure the option 'db\_owner' is selected >> click OK.

#### 2.4 Setup Replication Subscription

Expand Replications >> RMC on Local Subscriptions >> New Subscription.

Select the Publication created in step 2.2

Ensure 'Run all agents at the Distributer, <server name> (push notifications)' is selected and click Next.

Tick the relevant Subscriber server and select the relevant Subscription Database, click Next.



놜 New	Subscription Wizard			_		×
Sub: Cł	s <b>cribers</b> noose one or more Subscribers and	d specify each s	subscription database.			
Subso	cribers and subscription databases	¢				-
9	Subscriber 🔺		Subscription Database	e		
	LKPVMPE4764		FSMDev			
				AJJ 0. L		
Н	əlp	< Back	Next >	Add Subscrib	er Cance	el

Click on the ellipsis button and ensure 'Run under the following Windows account' is selected.

Enter the user details as per setup in section 1, click Next.

🔄 New Subscription Wizard		- D >	Distribution Agent Security
Distribution Agent S Specify the process accou	ecurity int and connection options for each D	istribution Agent.	Specify the domain or machine account under which the Distribution Agent process will run when synchronizing this subscription.
Subscription properties:			Run under the following Windows account:      Process account:      Process account:
Agent for Subscriber 🔺	Connection to Distributor	Connection to Subscriber	Example: domain\account
LKPVMPE4764	Click () to set security op	Click () to set security opti	Password:
			Confirm Password:
			<ul> <li>Run under the SQL Server Agent service account (This is not a recommended security best practice.)</li> </ul>
			Connect to the Distributor —
			By impersonating the process account
You must specify the security security options.	y information for all subscriptions befor	e continuing the wizard. Click () to set t	e 🔿 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.
Help	< Back Next	> Finish >>  Cancel	Convertile the Schereiber
			Buimpersonation the process account
			Using the following SOL 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

On the Synchronisation Schedule screen ensure 'Agent Schedule' is set as 'Run Continuously' and click Next.

On the Initialise Subscriptions screen ensure 'Initialise' is ticked and 'Initialise When' is set as 'Immediately', click Next.



On the Wizard Actions screen ensure 'Create the subscription(s)' is ticked and click Next.

On the Complete the Wizard screen, check the summary and click Finish.

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