

[Sort By Topic](#)[Search](#)

Troubleshooting SQL Server Replication

By: [Ahmad Yaseen](#)

In the previous article, [Setting Up and Configuring SQL Server Replication](#), we discussed in-depth, the SQL Server Replication concept, its components, types and how to configure the SQL Transactional Replication step by step. It is highly recommended to go through the previous article and understand the replication concept and its components before reading this article. In this article, we will see how to troubleshoot an existing SQL Server Replication site.

Troubleshooting Overview

The main goal of the SQL Server Replication is keeping the data in the Publisher and the Subscriber synchronized. In the happy scenario, if a transaction is performed and committed at the publication database, it will be copied to the distribution database then synchronized and applied to all Subscribers connected to that Publisher. If an issue occurs at any step of this process, the Publisher changes will not be available at the Subscriber side. In this case, we need to troubleshoot and fix that issue as soon as possible before ending up with an expired SQL Replication site that should be synchronized again from scratch or a database with its transaction log file runs out of free space, pausing all database transactions.

Identifying at which step the replication synchronization is failing and allocating an indicative error message that leads to fix the issue, is the most challenging part of the SQL Server Replication troubleshooting process. Also, checking the last synchronization time and what changes performed at/after that time that may cause this failure, can also help in troubleshooting the replication synchronization failure.

Understanding the role of the SQL Server Replication agent will help in identifying at which step the synchronization fails. Recall that there are three replication agents that are common between most of the SQL Server Replication types. The **Snapshot Agent** is responsible for creating the initial synchronization snapshot. The **Log Reader Agent** is responsible for reading the changes from the database transaction log file and copy it to the distribution database and finally, the **Distribution** agent that is responsible for synchronizing the changes to the Subscribers.

In this article, we will take advantage of the **Replication Monitor** and **Job Activity Monitor** windows in monitoring the SQL Server Replication status and getting information about any synchronization failure error.

Subscribe for Weekly Updates

Sign up for weekly database performance monitoring insights, tips and news.

Enter your email for up

[Subscribe](#)

Webinars & Events

Pinal Dave Webinar - Optimize Server Performar
MSSQL Tips Webinar - Monitoring SQL Server - F
Denny Cherry- Top ways to deal with blocking in
Pinal Dave - Get the Max Out of SQL Server Engir

Topics

What is DTU in Azure SQL Database and How to Figure Out How Much We Need
Optimizing TempDB: Avoiding Bottlenecks and Performance Issues
Troubleshooting SQL Server Always On Availability Groups

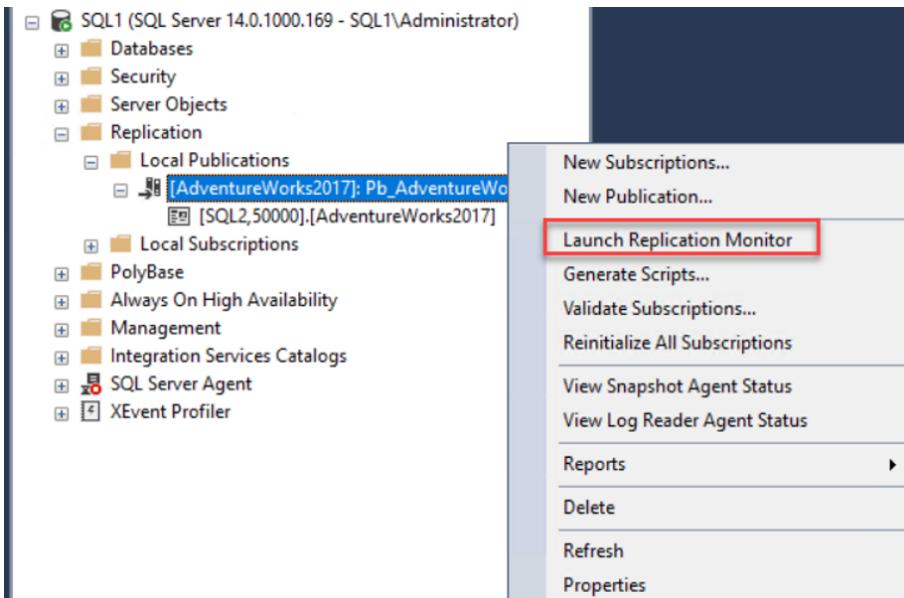


issue. Let us start discussing the scenarios one by one.

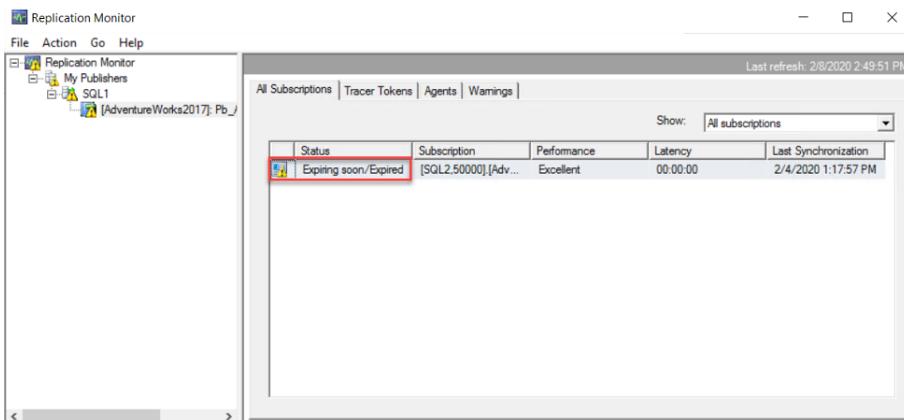
SQL Server Agent Service Issue

The SQL Server Agent service plays a vital role in the SQL Server Replication synchronization process. This is due to the fact that each replication agent will run under a SQL agent job.

Being a proactive database administrator, you need to check the SQL replication site status on a daily basis. To check the replication site status, right-click on the Publication, under the Replication -> Local Publications node, and choose the **Launch Replication Monitor** option, as shown below:



From the Replication Monitor window, you can see a warning message, showing that the replication will be expiring soon or already expired, without seeing any indicative error message, as below:

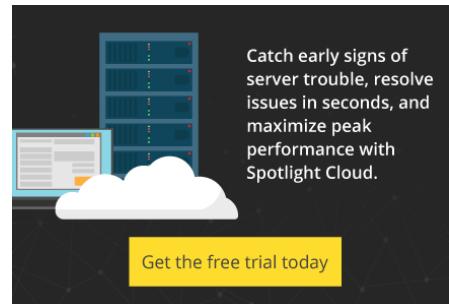


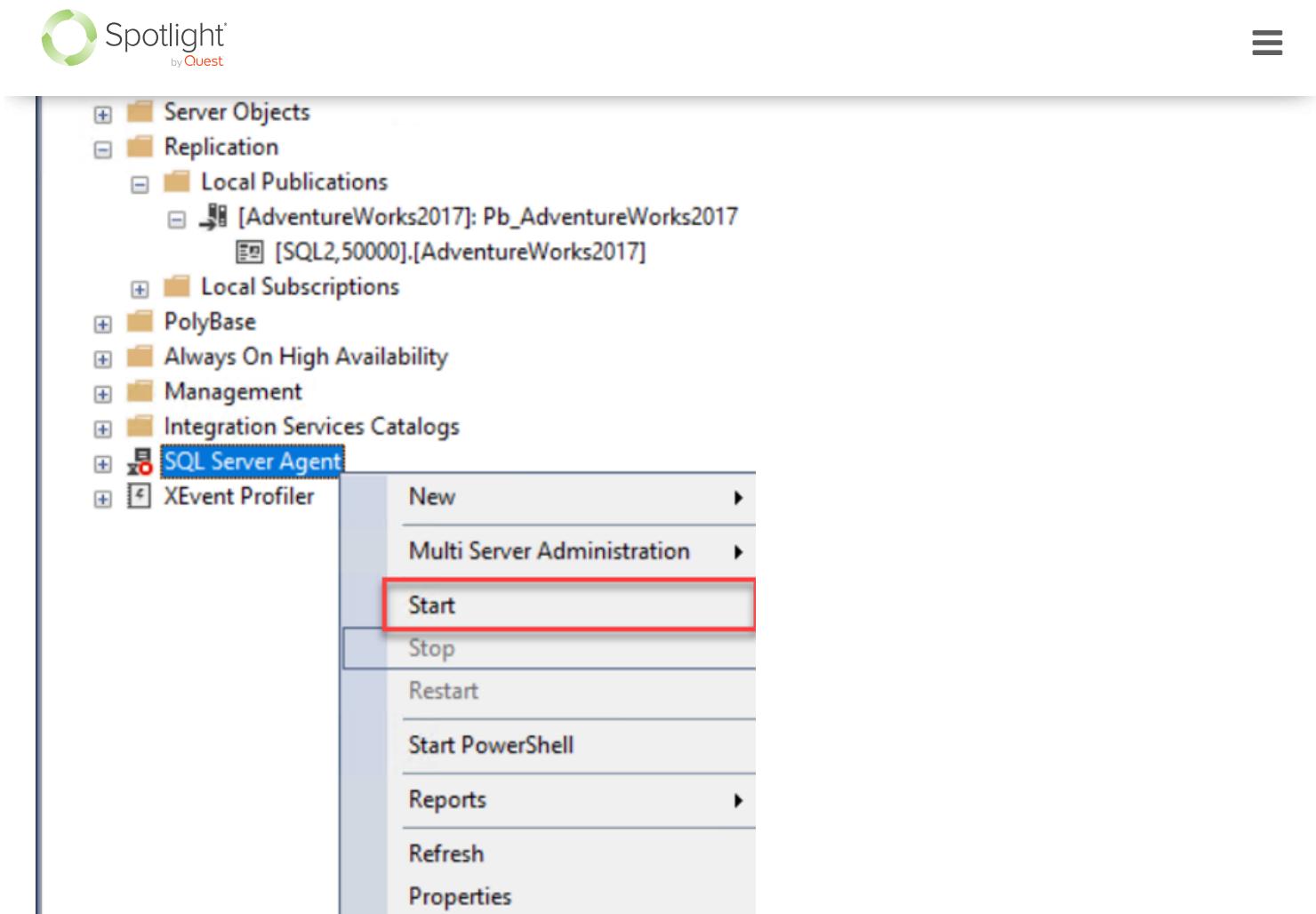
If the Replication Monitor window provides us with no useful information about why the replication site is expiring soon, the next step is to check the **Job Activity Monitor** under the SQL Server Agent node. Visiting the SQL Server Agent node, you will see directly that the SQL Server Agent Service is not running (from the red circle beside it). If the SQL Server Agent Service is not running, this means that all the jobs created under that instance are not working, including the replication agent jobs. As a result, the overall replication site is not working.

To fix that issue, we need to start the SQL Server Agent service from the SQL Server Management Studio directly or using the SQL Server Configuration Manager (recommended), as shown below:

ENTER YOUR EMAIL FO

SUBMIT





After starting the SQL Server Agent service, check the Replication Monitor again and make sure that the Subscriber status is **Running** and all the pending transactions are synchronized with the Subscriber successfully. You can check these steps one by one, by checking that the records are copied from the Publisher to Distributor section:

The screenshot shows the Replication Monitor tool. In the main pane, under 'My Publishers', there is a 'Subscription' entry for 'SQL2,50000[AdventureWorks2017]:Pb_AdventureWorks2...'. The 'Status' column for this subscription is highlighted with a red box and shows 'Running'. Below this, the 'Publisher To Distributor History' tab is selected in the sub-pane, showing a table of log reader agent sessions. One session is listed with a status of 'Running' and a duration of 222.46:40. At the bottom of the sub-pane, the 'Action Message' table shows a message: 'No replicated transactions are available.' This message is also highlighted with a red box.

Then synchronized from the Distributor to the Subscriber successfully, as below:



Action Message	Action Time
No replicated transactions are available	2/8/2020 2:52:36 PM
Initialising	2/8/2020 2:52:36 PM
Starting agent.	2/8/2020 2:52:28 PM

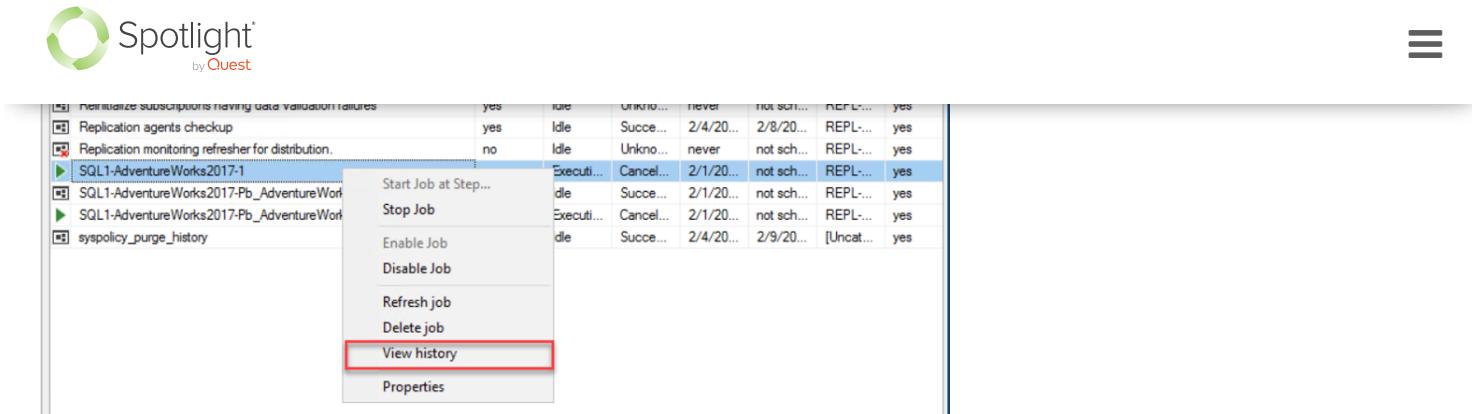
And finally make sure that there is no undistributed transaction from the last tab, as shown below:

Show:	All subscriptions			
Status	Subscription	Performance	Latency	Last Synchronization
Running	[SQL2.50000] [Adv...]	Excellent	00:00:00	2/8/2020 2:55:50 PM

After that, we need to make sure that the replication agents jobs are up and running with no issue. The SQL Agent jobs can be checked by expanding the SQL Server Agent node under the SSMS Object Explorer and view the Job Activity monitor then check if the Log Reader Agent and Distributor agent are running, taking into consideration that the Snapshot Agent will work only during the snapshot creation process, as shown below:

Name	Enabled	Status	Last Run...	Next Run	Category	Runnable	
Agent history clean up; distribution	yes	Idle	Succes...	2/4/20...	REPL...	yes	
Distribution clean up; distribution	yes	Idle	Succes...	2/8/20...	REPL...	yes	
Expired subscription clean up	yes	Idle	Succes...	2/4/20...	REPL...	yes	
Reinitialize subscriptions having data validation failures	yes	Idle	Unkno...	never	not sch...	REPL...	yes
Replication agents checkup	yes	Idle	Succes...	2/4/20...	REPL...	yes	
Replication monitoring refresh refresher fdt; distribution.	no	Idle	Unkno...	never	not sch...	REPL...	yes
SQL1-AdventureWorks2017-1	yes	Executing...	Cancel...	2/1/20...	not sch...	REPL...	yes
SQL1-AdventureWorks2017-Pb_AdventureWorks2017-1	yes	Idle	Succes...	2/1/20...	REPL...	yes	
SQL1-AdventureWorks2017-Pb_AdventureWorks2017-SQL2.50000-2	yes	Executing...	Cancel...	2/1/20...	not sch...	REPL...	yes
syspolicy_purge_history	yes	Idle	Succes...	2/4/20...	2/9/20...	[Uncat...	yes

You can also review the history of the replication agents jobs and check the previous failure reason, by right-clicking on that job and choose **View History** option as below:



Where you may find an indicative error message that helps in overcoming this issue in the future, as below:

Date	Step ID	Server	Job Name	Step Name	Notification	Message
2/1/2020 2:31:33 PM		SQL1	SQL1-AdventureWorks2017-1			In progress
2/1/2020 2:26:28 PM		SQL1	SQL1-AdventureWorks2017-1			The job was stopped prior to completion by User
2/1/2020 2:20:57 PM		SQL1	SQL1-AdventureWorks2017-1			The job was stopped prior to completion by User
2/1/2020 2:18:34 PM		SQL1	SQL1-AdventureWorks2017-1			The job was stopped prior to completion by User
2/1/2020 2:14:48 PM		SQL1	SQL1-AdventureWorks2017-1			The job was stopped prior to completion by User
2/1/2020 2:04:19 PM		SQL1	SQL1-AdventureWorks2017-1			The job was stopped prior to completion by User
2/1/2020 2:02:25 PM		SQL1	SQL1-AdventureWorks2017-1			The job was stopped prior to completion by User
2/1/2020 1:56:45 PM		SQL1	SQL1-AdventureWorks2017-1			The job was stopped prior to completion by User
2/1/2020 1:55:33 PM		SQL1	SQL1-AdventureWorks2017-1			The job was stopped prior to completion by Shut
2/1/2020 1:53:03 PM		SQL1	SQL1-AdventureWorks2017-1			The job was stopped prior to completion by User
2/1/2020 1:51:05 PM		SQL1	SQL1-AdventureWorks2017-1			The job was stopped prior to completion by User
2/1/2020 1:44:57 PM		SQL1	SQL1-AdventureWorks2017-1			The job was stopped prior to completion by Shut
2/1/2020 1:44:43 PM		SQL1	SQL1-AdventureWorks2017-1			The job was stopped prior to completion by User
2/1/2020 1:42:49 PM		SQL1	SQL1-AdventureWorks2017-1			The job was stopped prior to completion by User

To overcome the previous issue, the SQL Server Agent service startup mode should be changed from Manual to Automatic, in this way you will make sure that the service will start automatically when the hosting server is rebooted.

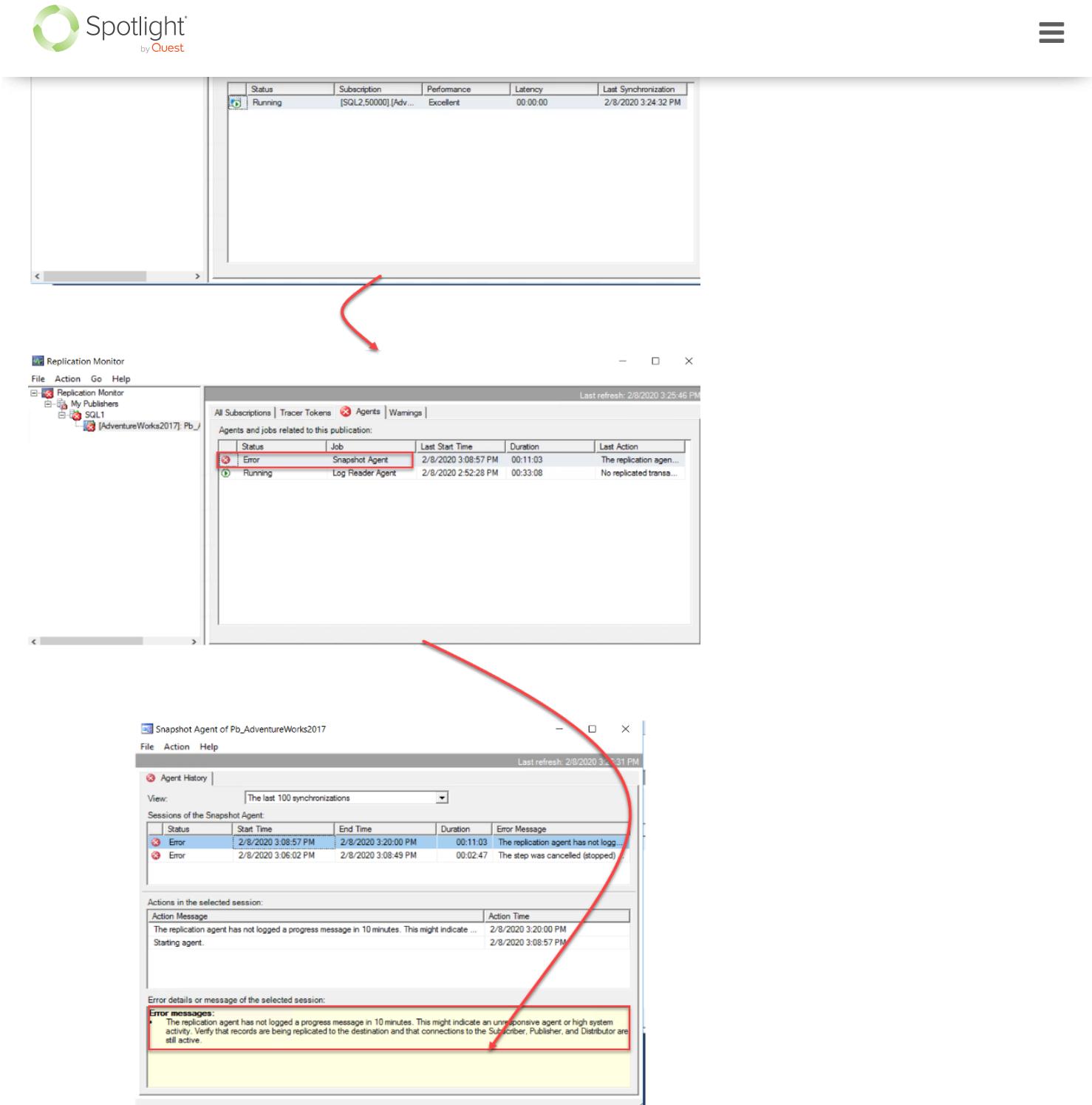
Snapshot Agent Permission Issue

Assume that while checking the SQL Server Replication status, using the Replication Monitor, you noticed that there is a replication failure, from the X sign inside the red circle. And the Replication Monitor shows that the failure is from one of the replication agents, from the X sign inside the red circle at the top of the Agents tab.

To identify that replication failure, we should browse the Agents tab and check which agent is failing. From the Agents page, you will see that the Snapshot Agent is the failing one. Double-click on the Snapshot Agent and review the below error message:

The replication agent has not logged a progress message in 10 minutes. This might indicate an unresponsive agent or high system activity. Verify that records are being replicated to the destination and that connections to the Subscriber, Publisher, and Distributor are still active.

Unfortunately, this error message is generic and it shows only that the Snapshot Agent is not working without specifying the reason, as follows:



Then we need to search for useful information in another place, which is the Snapshot Agent job. From the Job Activity Monitor window, under the SQL Server Agent node, you can see that the Snapshot Agent job is failed. And from that job history, you can see that it failed recently, due to the proxy authentication problem. In other words, the credentials for the account under which the Snapshot Agent runs is not correct, as shown below:

Status

Last Refresh: 2/8/2020 3:27:57 PM
Next Refresh: Manual
Filter: None
Connection Server: SQL1

Name	Enabled	Status	Last Run
Agent history clean up: distribution	yes	Idle	Succ...
Distribution clean up: distribution	yes	Idle	Succ...
Expired subscription clean up	yes	Idle	Succ...
Reinitialize subscriptions having data validation failures	yes	Idle	Unkno...
Replication agents checkup	yes	Idle	Succ...
Replication monitoring refresher for distribution.	no	Idle	Unkno...
SQL1-AdventureWorks2017-1	yes	Executing...	Cancel...
SQL1-AdventureWorks2017-Pb_AdventureWorks2017-SQL2,50000			
syspolicy_purge_history			

Start Job at Step...
Stop Job
Enable Job
Disable Job
Refresh job
Delete job
View history
Properties

Log file summary: No filter applied

Date	Step ID	Server	Job Name	Step Name	Notification
2/8/2020 3:08:56 PM		SQL1	SQL1-AdventureWorks2017-Pb_AdventureWorks2017-1		
2/8/2020 3:18:58 ...	3	SQL1	SQL1-AdventureWorks2017-Pb_AdventureWorks2017-1	Detect n...	
2/8/2020 3:18:58 ...	2	SQL1	SQL1-AdventureWorks2017-Pb_AdventureWorks2017-1	Run agent.	
2/8/2020 3:17:58 ...	2	SQL1	SQL1-AdventureWorks2017-Pb_AdventureWorks2017-1	Run agent.	
2/8/2020 3:16:58 ...	2	SQL1	SQL1-AdventureWorks2017-Pb_AdventureWorks2017-1	Run agent.	
2/8/2020 3:15:58 ...	2	SQL1	SQL1-AdventureWorks2017-Pb_AdventureWorks2017-1	Run agent.	
2/8/2020 3:14:58 ...	2	SQL1	SQL1-AdventureWorks2017-Pb_AdventureWorks2017-1	Run agent.	
2/8/2020 3:13:58 ...	2	SQL1	SQL1-AdventureWorks2017-Pb_AdventureWorks2017-1	Run agent.	
2/8/2020 3:12:58 ...	2	SQL1	SQL1-AdventureWorks2017-Pb_AdventureWorks2017-1	Run agent.	
2/8/2020 3:11:58 ...	2	SQL1	SQL1-AdventureWorks2017-Pb_AdventureWorks2017-1	Run agent.	
2/8/2020 3:10:58 ...	2	SQL1	SQL1-AdventureWorks2017-Pb_AdventureWorks2017-1	Run agent.	
2/8/2020 3:09:57 ...	2	SQL1	SQL1-AdventureWorks2017-Pb_AdventureWorks2017-1	Run agent.	
2/8/2020 3:08:57 ...	2	SQL1	SQL1-AdventureWorks2017-Pb_AdventureWorks2017-1	Run agent.	
2/8/2020 3:08:56 ...	1	SQL1	SQL1-AdventureWorks2017-Pb_AdventureWorks2017-1	Snapshot...	
2/8/2020 3:06:01 PM		SQL1	SQL1-AdventureWorks2017-Pb_AdventureWorks2017-1		
2/1/2020 2:31:33 PM		SQL1	SQL1-AdventureWorks2017-Pb_AdventureWorks2017-1		
2/1/2020 2:26:28 PM		SQL1	SQL1-AdventureWorks2017-Pb_AdventureWorks2017-1		
2/1/2020 2:24:59 PM		SQL1	SQL1-AdventureWorks2017-Pb_AdventureWorks2017-1		
2/1/2020 2:22:50 PM		SQL1	SQL1-AdventureWorks2017-Pb_AdventureWorks2017-1		
2/1/2020 2:18:34 PM		SQL1	SQL1-AdventureWorks2017-Pb_AdventureWorks2017-1		

Selected row details:
Operator Paged
Retries Attempted 0

Message
Unable to start execution of step 2 (reason: Error authenticating proxy ay\sqladmin, system error: The user name or password is incorrect.)

To fix the Snapshot Agent credential issue, right-click on the Publication, under the Replication node -> Local Publication, and choose the **Properties** option. From the Publication Properties window, browse the **Agent Security** page and re-insert the credentials for the account under which the Snapshot Agent will run.

After refreshing the Snapshot Agent account credentials, start the Snapshot Agent job again, from the Job Activity Monitor window, and make sure that the job is working fine, as below:

The screenshot shows the Spotlight by Quest interface for troubleshooting SQL Server Replication. The main window displays a sidebar with options like Snapshot, FTP Snapshot, Subscription Options, Publication Access List, and Agent Security. The central area shows the 'Snapshot Agent Security' dialog, which is used to specify the domain or machine account under which the Snapshot Agent process will run. A red box highlights the 'Run under the following Windows account' section, where the 'Process account' is set to 'ay\sqladmin' and the 'Password' and 'Confirm Password' fields are filled. Below this, there's an option to 'Run under the SQL Server Agent service account' (which is not recommended). The 'OK' button at the bottom right of the dialog is also highlighted with a red arrow.

Below the dialog, the 'Agent Job Activity' window is open, listing various replication-related jobs. One job, 'SQL1-AdventureWorks2017-1', has a status of 'Failed'. A context menu is open over this job, with the 'Start Job at Step...' option highlighted. Another red arrow points from the 'Start Job at Step...' option to the 'Start Jobs - SQL1' window below. This window shows a summary of the job execution: 'Success' with 2 Total, 2 Success, 0 Error, and 0 Warning. The 'Details' pane shows two successful steps: 'Start Job 'SQL1-AdventureWorks...'' and 'Execute job 'SQL1-AdventureWo...''. The 'Close' button at the bottom right of the 'Start Jobs' window is also highlighted with a red arrow.

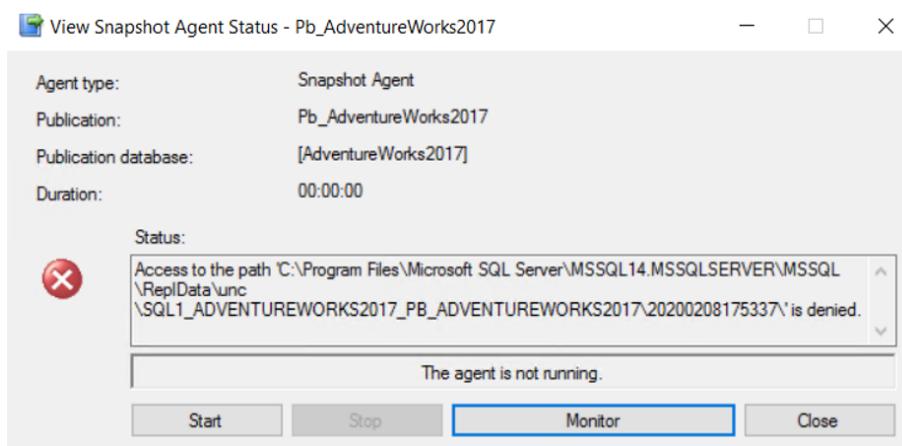
Also, check if the Snapshot Agent is working fine now, and the error message does not appear anymore under the Replication Monitor, as shown below:

The screenshot shows a table with columns: Status, Job, Last Start Time, Duration, and Last Action. There are two rows:

Status	Job	Last Start Time	Duration	Last Action
Completed	Snapshot Agent	2/8/2020 3:32:49 PM	00:00:00	[0%] A snapshot was...
Running	Log Reader Agent	2/8/2020 2:52:28 PM	00:40:44	No replicated transa...

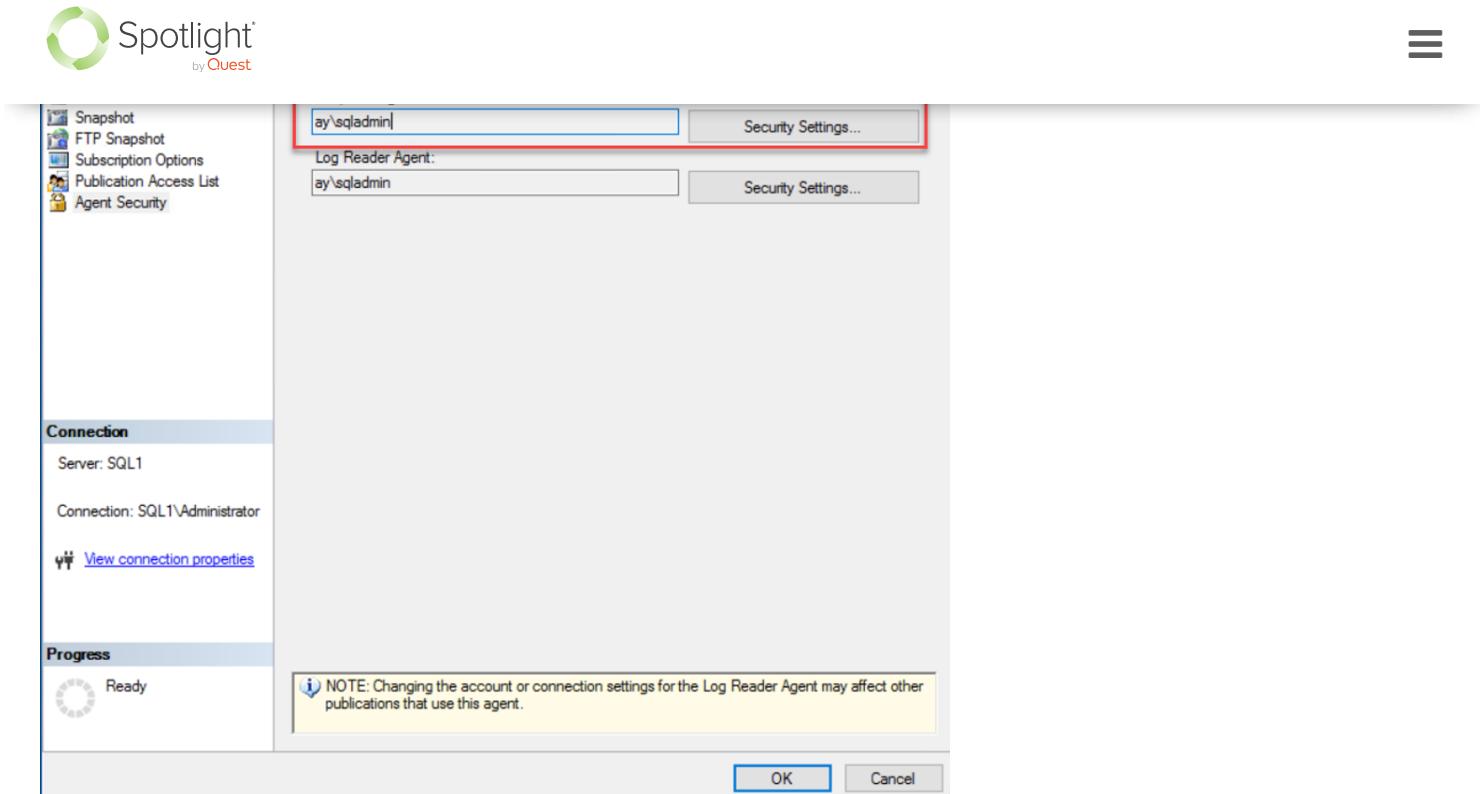
Snapshot Folder Permission Issue

Assume that, when trying to synchronize the Publisher and the Subscriber using the initial snapshot or resynchronize the Snapshot replication site using a new snapshot, the snapshot creation process failed with the access error message below:

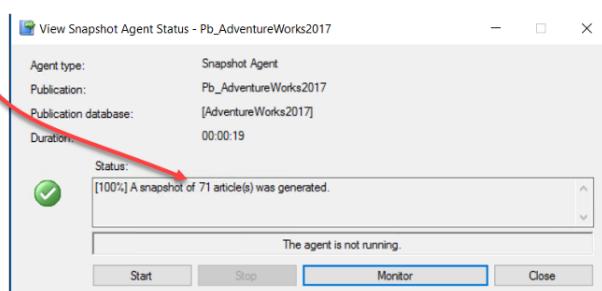
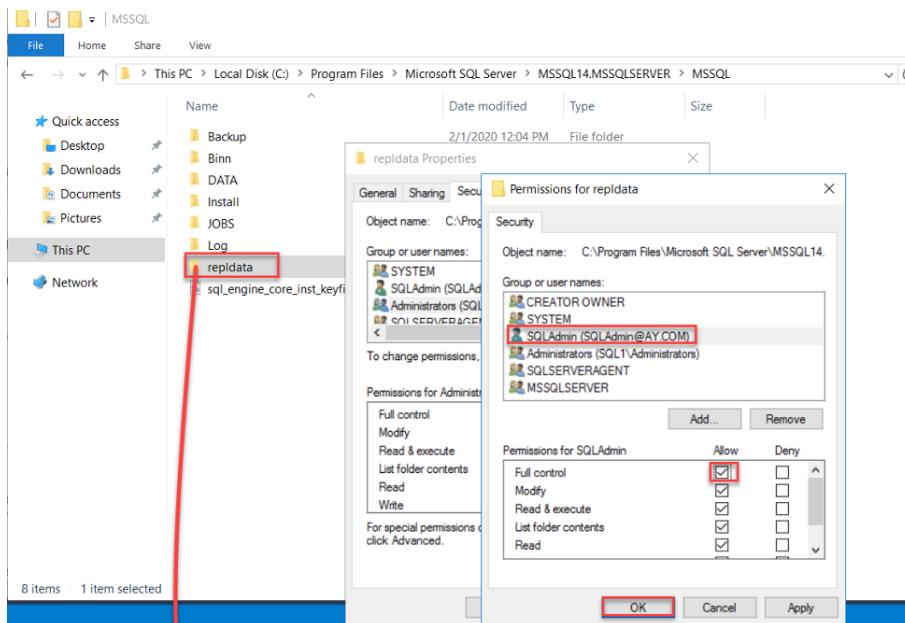


This error message shows that, the account under which the Snapshot Agent is running does not have permission to access the snapshot folder specified in the error message.

To fix that issue, we need to check the account under which the Snapshot Agent is running, from the Agent Security page of the Publication Properties window, as shown below:



Then browse the snapshot folder specified in the error message and make sure that this Snapshot account has minimum read-write permission on that folder, then run the Snapshot Agent again and see that the issue is fixed now and the synchronization snapshot is created successfully, as below:





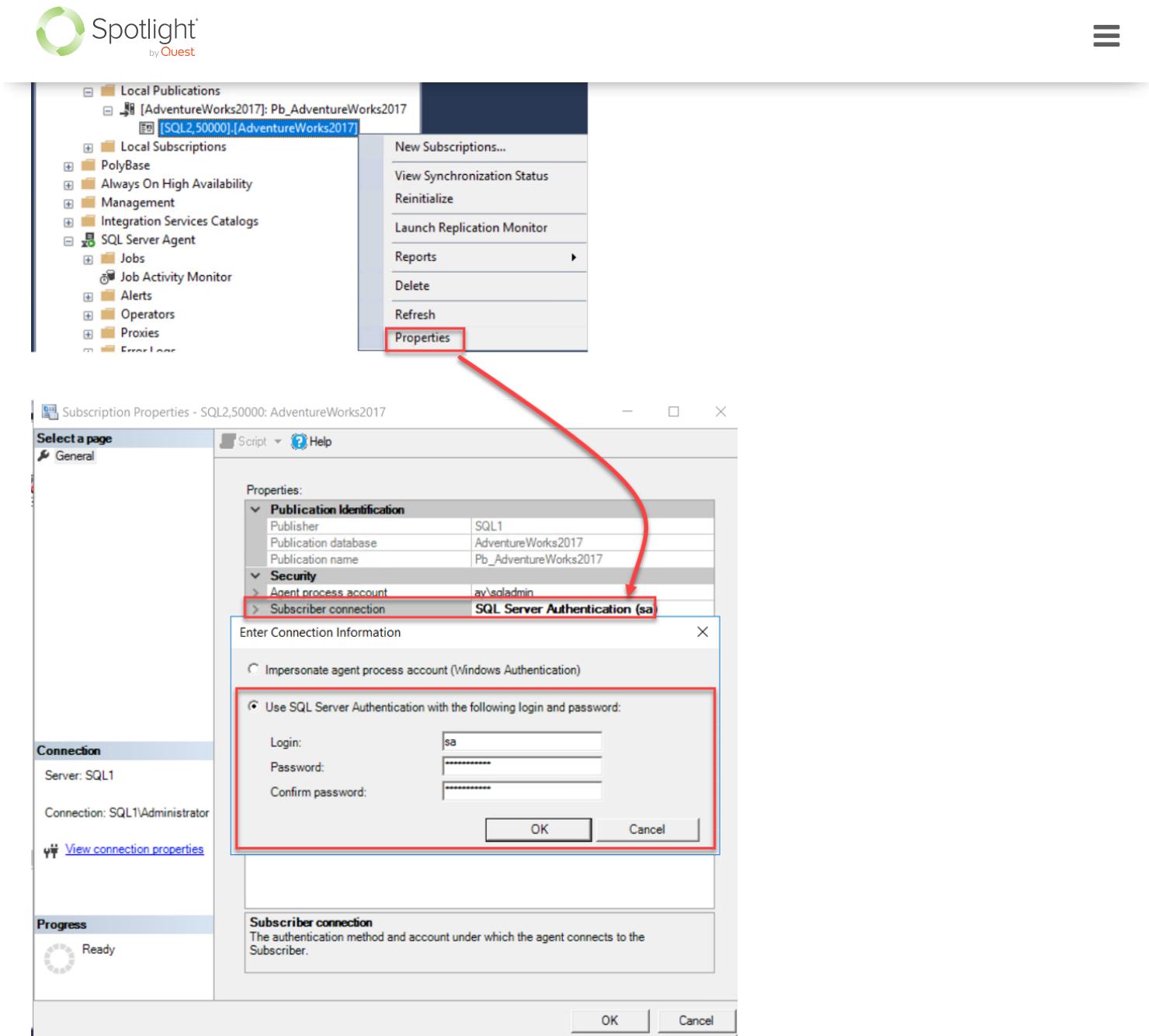
The screenshot shows the 'Replication Monitor' window. In the left pane, under 'My Publishers', there is one entry for 'SQL1'. Under 'SQL1', there is one entry for '[AdventureWorks2017] Pb...'. The main pane displays a table titled 'Retrieving data from Distributor...' with the last refresh date as '2/8/2020'. The table has columns: Status, Subscription, Performance, Latency, and Last Synchronization. A single row is shown, with the 'Status' column containing an error icon and the value '[SQL2.50000] [Adv...]', indicating a replication failure.

If you click on the error icon, you will see that the failure has occurred when trying to synchronize the transactions from the Distributor to the Subscriber. And from the error message, it is clear that the Distributor is not able to connect to the Subscriber SQL Server instance due to permission issue, as shown below:

The screenshot shows the 'Subscription SQL2,50000:AdventureWorks2017 to SQL1:AdventureWorks2017:Pb_AdventureWorks2...' window. The 'Distributor To Subscriber History' tab is selected. The 'Sessions of the Distribution Agent' table shows several synchronization sessions. One session is marked as 'Error' with a red X icon, and its details are expanded. The 'Action Message' column shows the error message: 'The process could not connect to Subscriber 'SQL2,50000''. The 'Error messages:' section at the bottom lists two items, both of which are highlighted with a red box:

- The process could not connect to Subscriber 'SQL2,50000'. (Source: MSSQL_REPL, Error number: MSSQL_REPL20084)
Get help: http://help/MSSQL_REPL20084
- Login failed for user 'sa'. (Source: MSSQLServer, Error number: 18456)
Get help: <http://help/18456>

To fix that issue, we need to check and refresh the credentials used to connect to the Subscriber instance. To check the credentials, right-click on the Subscription under the Replication node -> Local Publications -> the current Publication name and choose the Properties option. From the **Subscriber Connection** field under the Subscriber Properties window, refresh the credentials for the account that will be used to connect to the Subscriber instance, as shown below:



After that, check the replication status again from the Replication Monitor and you will see that the Subscriber connection issue is no longer available, and the replication site is running normally, as shown below:



The screenshot shows the Replication Monitor interface. At the top, there's a table with columns: Status, Subscription, Performance, Latency, and Last Synchronization. One row is highlighted with a red box, showing 'Running' status for a subscription named '[SQL2,50000] [Adv...]'.

Below this is a detailed view of the 'Subscription SQL2,50000:AdventureWorks2017 to SQL1:AdventureWorks2017:Pb_AdventureWorks2...' subscription. It includes tabs for Publisher To Distributor History, Distributor To Subscriber History, and Undistributed Commands. The 'Publisher To Distributor History' tab is selected, showing the last 100 synchronizations. A red box highlights the first entry: 'Running' at 2/8/2020 4:02:13 PM.

Further down, under 'Actions in the selected session', there's a table with Action Message and Action Time. The first entry, 'No replicated transactions are available', is highlighted with a red box.

Subscriber Not Reachable

Another SQL Server Replication failure issue you may face from the Subscriber side is that the Distributor is not able to connect to the Subscriber, showing under the Distributor to the Subscriber page that, it is not able to open connection with the Subscriber due to "Network Related ..." connectivity error, shown in the Replication Monitor window below:

This screenshot shows the Replication Monitor with a focus on a specific subscription. The main table at the top shows one row with 'Error' status for the subscription '[SQL2,50000] [Adv...]'.

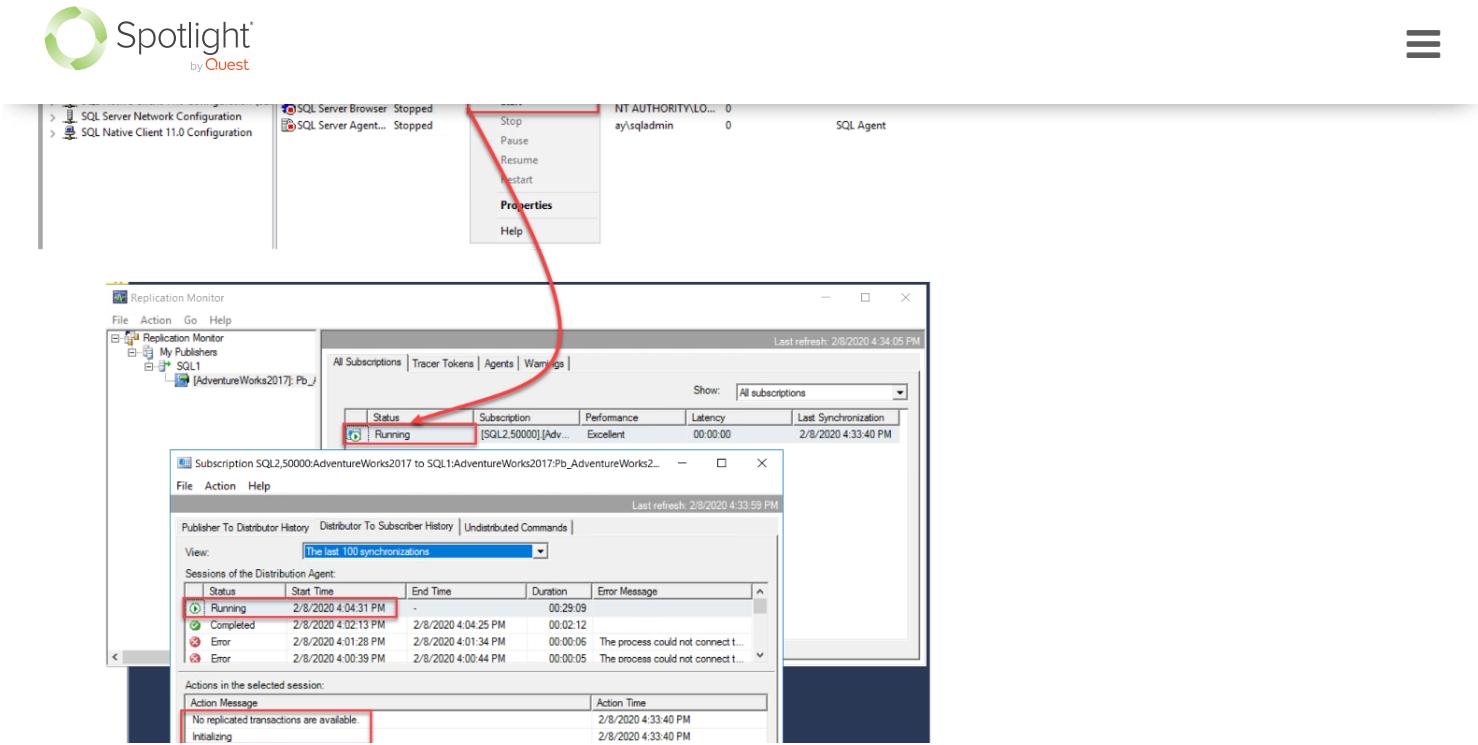
Below, the 'Distributor To Subscriber History' tab is selected, showing the last 100 synchronizations. A red box highlights the first entry: 'Retrying' at 2/8/2020 4:04:31 PM.

In the 'Actions in the selected session' table, the first entry, 'The process could not connect to Subscriber 'SQL2,50000'', is highlighted with a red box.

At the bottom, the 'Error details or message of the selected session:' section contains a list of error messages, all enclosed in a red box:

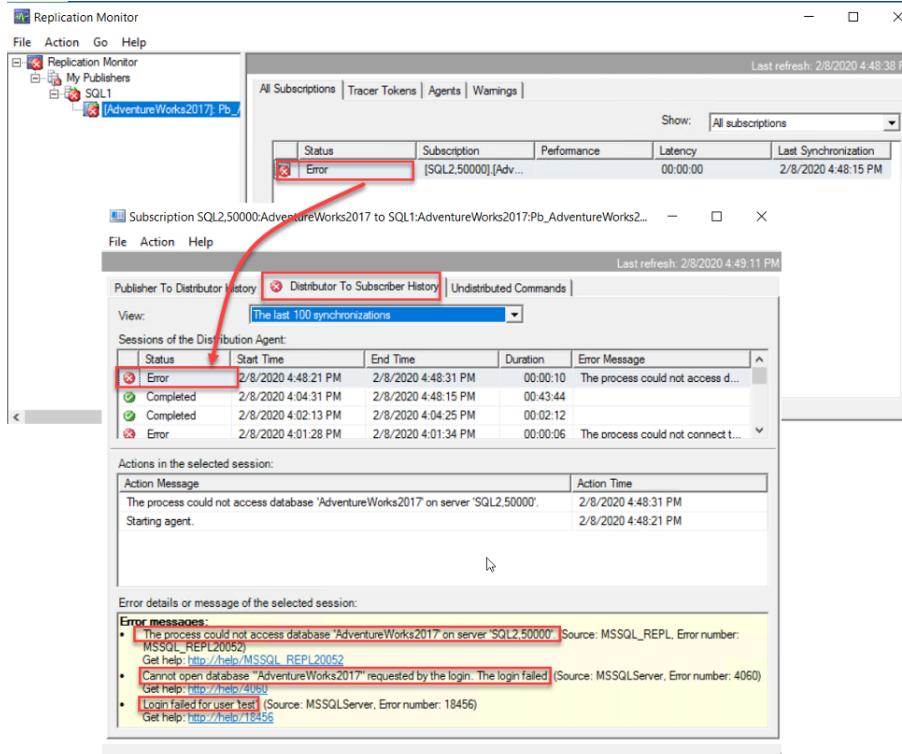
- TCP Provider: No connection could be made because the target machine actively refused it. (Source: MSSQLServer, Error number: 10061)
Get help: <http://help/10061>
- A network-related or instance-specific error has occurred while establishing a connection to SQL Server. Server is not found or not accessible. Check if instance name is correct and if SQL Server is configured to allow remote connections. For more information see SQL Server Books Online. (Source: MSSQLServer, Error number: 10061)
Get help: <http://help/10061>
- Query timeout expired, Failed Command: (Source: MSSQLServer, Error number: HYT00)

This error message is indicating that there is a connection issue between the Distributor instance and the Subscriber instance. The first and straight-forward way to check this connectivity issue is to make sure that the Subscriber SQL Server instance is online. This can be checked from the SQL Server Configuration Manager from the Subscriber side. In our situation, we can see that the SQL Server Service at the Subscriber side is stopped. To fix that issue, start the SQL Server Service and check from the Replication Monitor that the replication site is synchronized again, as shown below. For more advanced SQL connectivity issue, check the [Troubleshooting Connectivity MS document](#):

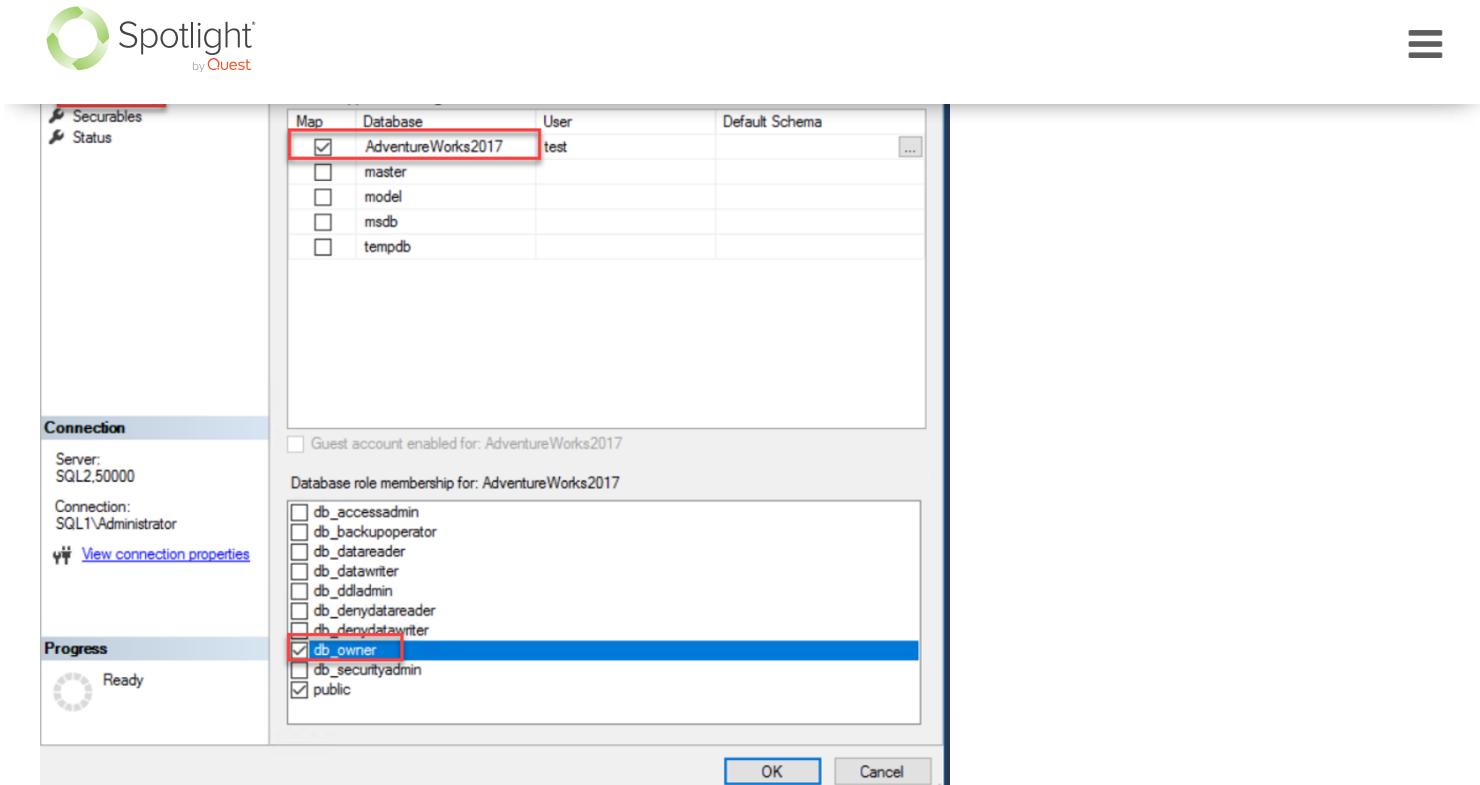


Subscriber Database Permission Issue

Assume that you are checking the SQL Server Replication synchronization status, using the Replication Monitor, and it is found that the replication is failing while trying to replicate the changes from the Distributor to the Subscriber. Clicking on the subscriber error, you will see that the Distributor is able to reach the subscriber and connect to it, but not able to connect to the Subscription database due to lack of permission issue, as shown below:



To fix that issue, connect to the Subscriber and make sure that the account that is used to connect to the Subscriber database is a member of the db_Owner database fixed role, as shown below:



After that, check the Replication Monitor again and make sure that the Distributor is able to reach the subscription database and replicate the changes, as below:

Status	Start Time	End Time	Duration	Error Message
Running	2/8/2020 4:51:50 PM	-	00:00:00	
Error	2/8/2020 4:48:21 PM	2/8/2020 4:50:47 PM	00:02:26	The process could not access d...
Completed	2/8/2020 4:04:31 PM	2/8/2020 4:48:15 PM	00:43:44	
Completed	2/8/2020 4:02:13 PM	2/8/2020 4:04:25 PM	00:02:12	

Action Message	Action Time
No replicated transactions are available	2/8/2020 4:51:50 PM
Initializing	2/8/2020 4:51:50 PM

Data Difference Issue

Assume that one of the database development teams claims that there are some changes that are performed on the Shifts table on the Publisher (SQL1) are not reflected in the daily reports that run on the Subscriber instance (SQL2), and he provided the snapshot below that shows that the changes are not replicated:

The screenshot shows two separate SSMS sessions. The top session is connected to 'SQL1 (14.0 RTM)' and the bottom session is connected to 'SQL2,5000 (14.0 RTM)'. Both sessions run the same SELECT statement against the 'Shift' table.

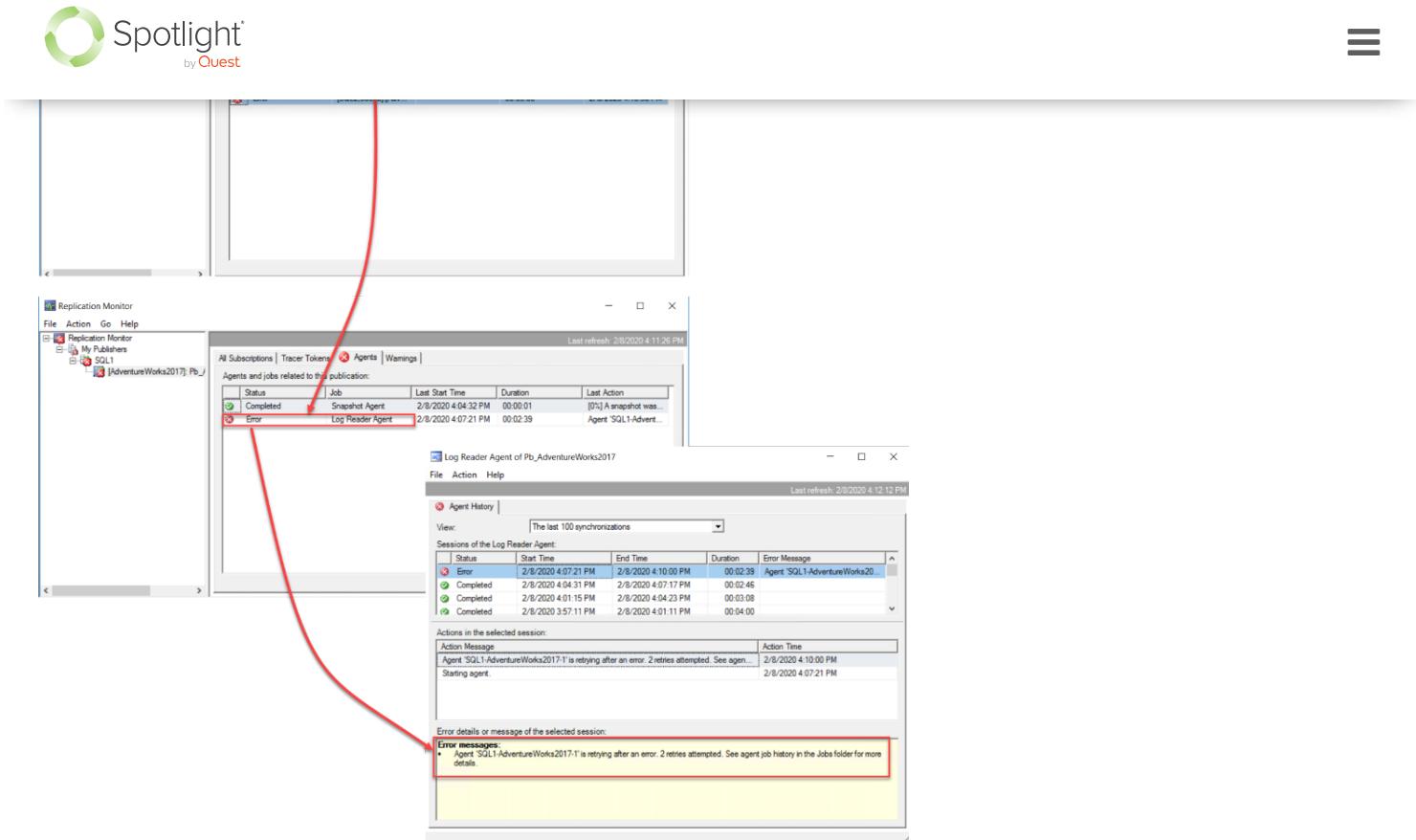
SQL1 (14.0 RTM) Results:

ShiftID	Name	StartTime	EndTime	ModifiedDate
1	Day	07:30:00.0000000	15:30:00.0000000	2008-04-30 00:00:00.000
2	Evening	15:30:00.0000000	23:30:00.0000000	2008-04-30 00:00:00.000
3	Night	23:30:00.0000000	07:30:00.0000000	2008-04-30 00:00:00.000

SQL2,5000 (14.0 RTM) Results:

ShiftID	Name	StartTime	EndTime	ModifiedDate
1	Day	07:00:00.0000000	15:00:00.0000000	2008-04-30 00:00:00.000
2	Evening	15:00:00.0000000	23:00:00.0000000	2008-04-30 00:00:00.000
3	Night	23:00:00.0000000	07:00:00.0000000	2008-04-30 00:00:00.000

The first step in checking the replication synchronization issue is opening the Replication Monitor and find at which step it is failing. From the Replication Monitor, you can see that the Log Reader Agent is failing, as the changes are not replicated from the Distributor to the Subscriber, but no clear message is returned from that agent, as shown below:



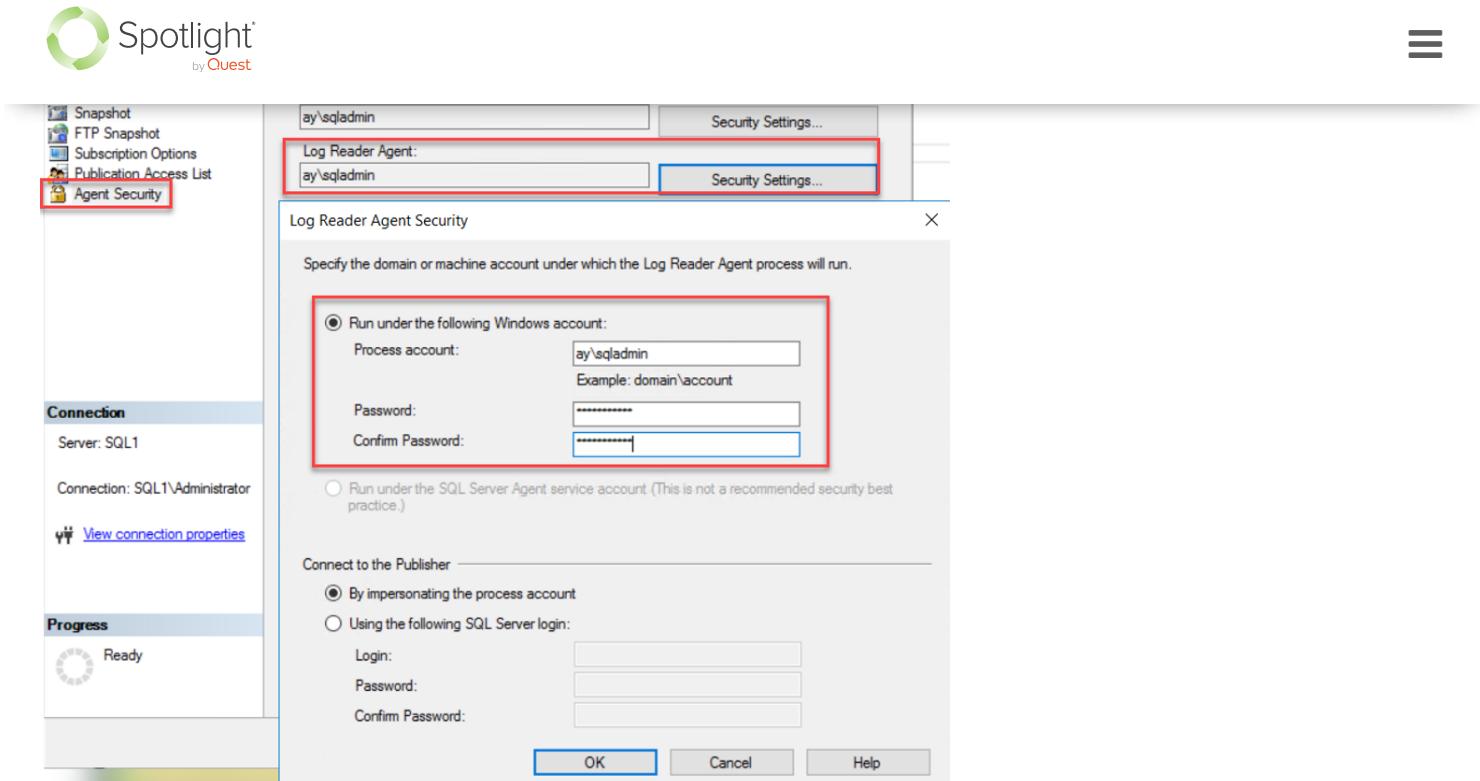
As we cannot find meaningful error message from the Replication Monitor, we will check the history of the Log Reader Agent job, using the Job Activity Monitor, which shows that, the credentials for the account under which the Log Reader Agent is running, is incorrect, as shown below:

The screenshot shows the Log File Viewer interface for SQL1. A context menu is open over a row in the log file summary table, specifically for the second step of the 'SQL1-AdventureWorks2017-1' job. The menu options are: Start Job at Step..., Stop Job, Enable Job, Disable Job, Refresh job, Delete job, View history (which is highlighted with a red box), and Properties.

A red arrow points from the 'View history' option in the context menu to a message box at the bottom of the screen. The message box contains the following text:

```
Message
Unable to start execution of step 2 (reason: Error authenticating proxy ay\sqladmin, system error: The user name or password is incorrect.)
```

To fix the Log Reader Agent credentials issue, browse the Agent Security page of the Publication Properties window, and refresh the Log Reader Agent credentials with a valid one, as below:



Checking the Replication Monitor again, you will see that the changes are replicated successfully and that the data is updated with the new shifts changes, as shown below:

The screenshot shows two windows side-by-side. The left window is the 'Replication Monitor' tool from Spotlight by Quest. It displays a table with columns: Status, Subscription, Performance, Latency, and Last Synchronization. A row for 'Running' is highlighted with a red box. Below this is a list of synchronization sessions, with the first session also highlighted in red. The right window is a SQL Server Management Studio (SSMS) query window titled 'SQLQuery1.sql - SQ...Administrator (54)'. It contains a T-SQL script to select top 1000 rows from the 'Shift' table. The results grid shows three rows of shift data. A red arrow points from the 'Error' message in the Replication Monitor to the 'EndTime' column of the third shift record in the SSMS results grid, which is currently set to '07:00:00'. The status bar at the bottom of the SSMS window indicates 'Query executed successfully.' and 'SQL2,50000 (14.0 RTM)'.

Row Not Found at Subscriber

Let us look at the issue from another side. Let's say, there is a change performed in the shifts table as shown below:

SQL1.AdventureWor...anResources.Shift					
	ShiftID	Name	StartTime	EndTime	ModifiedDate
1	1	Day	07:30:00	15:30:00	2008-04-30 00:00:00...
2	2	Evening	15:30:00	23:30:00	2008-04-30 00:00:00...
▶	3	Night	23:30:00	07:00:00	2008-04-30 00:00:00...
*	NULL	NULL	NULL	NULL	NULL

But this change is not replicated to the Subscriber and the overall SQL Server Replication site is failed. From the Replication Monitor, you can see that it is failing while trying to make the change from the Distributor to the Subscriber, and failed due to the fact that it is not able to update that specific record with ID equal to 3, because this record is not available at the Subscriber database table, as shown below:



The screenshot shows the 'Sessions of the Distribution Agent' table with one error row:

Status	Start Time	End Time	Duration	Error Message
Err	2/8/2020 5:48:39 PM	2/8/2020 6:01:41 PM	00:13:02	The row was not found at the Sub... 2/8/2020 5:48:39 PM
Running	2/8/2020 5:08:07 PM	-	00:40:21	

Below the table, the 'Actions in the selected session' section shows a list of actions with their times. A red box highlights the first action: 'Error executing a batch of commands. Retrying individual commands...'.

At the bottom, the 'Error messages' section also contains the same error message as the table: 'The row was not found at the Subscriber when applying the replicated UPDATE command for Table [HumanResources].[Shift] with Primary Key(s) [ShiftID] = 3 (Source: MSSQLServer, Error number: 2058)'.

Checking that record at the Subscriber side (SQL2), you will see that the record is not available, as below:

```
***** Script for SelectTopNRows command from SSMS *****/
SELECT *
FROM [AdventureWorks2017].[HumanResources].[Shift]
WHERE [ShiftID] = 3
```

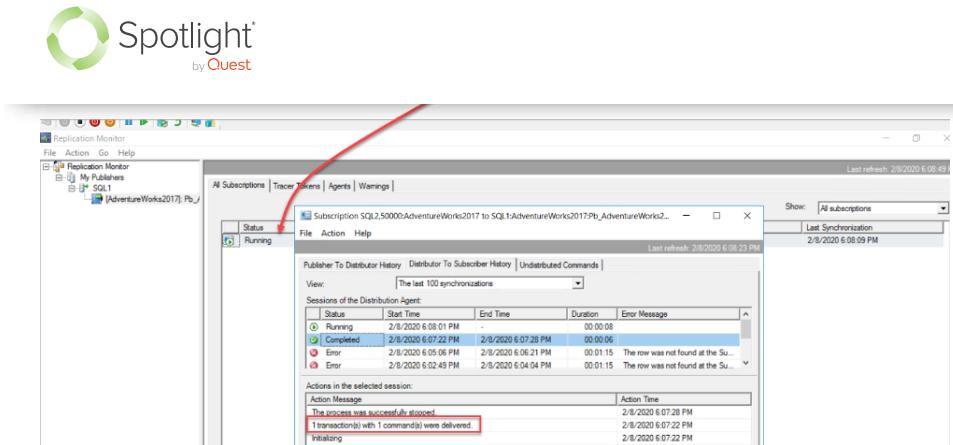
Results grid (empty):

ShiftID	Name	StartTime	EndTime	ModifiedDate
---------	------	-----------	---------	--------------

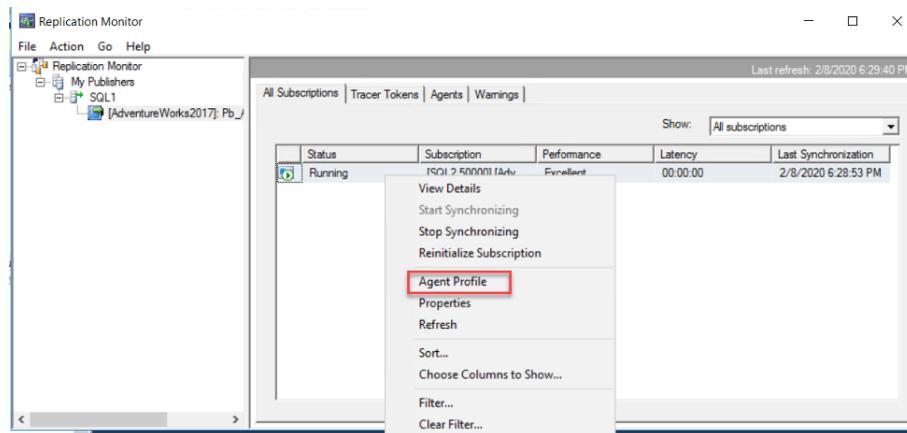
Query status: **Query executed successfully.**

Execution stats: **SQL2,50000 (14.0 RTM)**

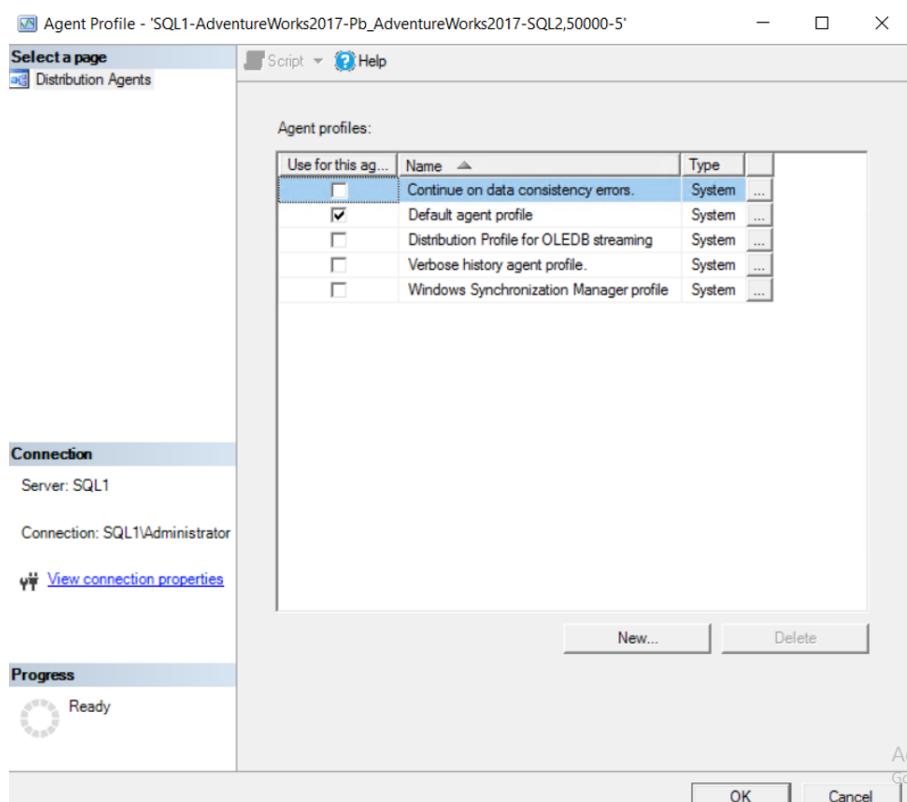
To overcome this issue, we need to insert that record again to the Subscriber database table and let the Distributor try to update it again, fixing the replication synchronization failure issue, as shown below:



SQL Server provides us with an option to let the replication site continue working even though a data inconsistency issue is found, where you can manually fix this inconsistency issue later. To do so, from the Replication Monitor, right-click on the Subscriber and choose **Agent Profile** option, as shown below:

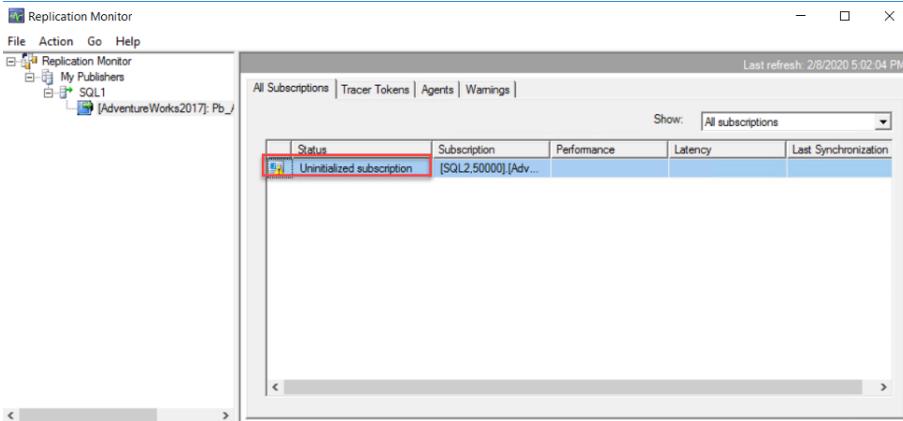


From the displayed window, you can update the Log Reader Agent profile and allow it to continue replicating data changes in case there is data inconsistency issue, as shown below:

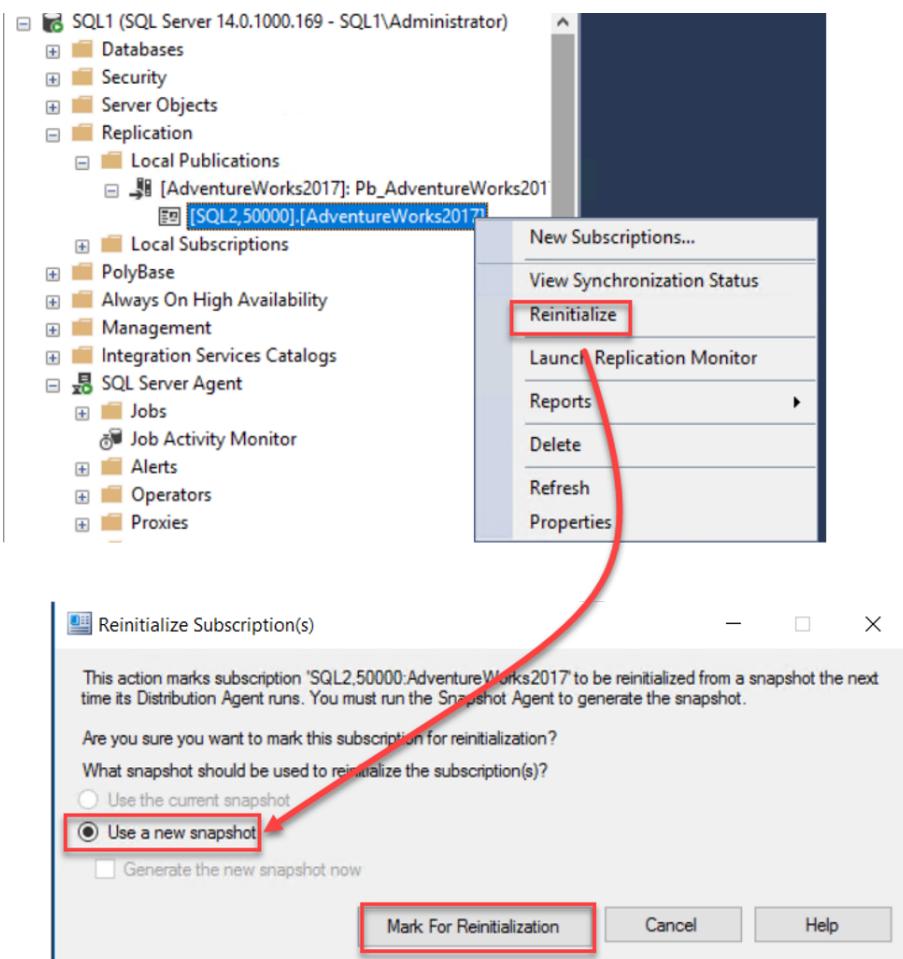




be marked as uninitialized, waiting to be reinitialized again using a new snapshot. The same scenario can be faced when creating a new Subscription without initializing it, as shown below:



To fix that issue, we should reinitialize that Subscription, by right-clicking on the Subscription under the Replication node -> Local Publications and expand the Publication, then choose the Reinitialize option and mark this Subscription for Initialization and make it ready to receive a new snapshot, as shown below:



If the Subscription status stays Uninitialized after reinitializing it, check the Snapshot Agent job, using the Job Activity Monitor window, and see why it is failing. From the Snapshot Agent job history, you will see that the job failed due to an issue determining the owner of that agent job, as shown below:



Job History context menu options:

- Start Job at Step...
- Stop Job
- Enable Job
- Disable Job
- Refresh job
- Delete job
- View history** (highlighted)
- Properties

Log File Viewer - SQL1

Select logs

Job History

- Agent history clean up: distribution
- Distribution clean up: distribution
- Expired subscription clean up
- Reinitialize subscriptions having data
- Replication agents checkup
- Replication monitoring refresher for d
- SQL1-AdventureWorks2017-1
- SQL1-AdventureWorks2017-Pb_Adv
- SQL1-AdventureWorks2017-Pb_Adv
- syspolicy_purge_history

SQL Server Agent

Database Mail

Status

Last Refresh: 2/8/2020 5:06:24 PM

Filter: None

Log file summary: No filter applied

Date	Step ID	Server	Job Name
2/8/2020 5:04:47 PM		SQL1	SQL1-AdventureWorks2017-Pb_AdventureW
2/8/2020 5:01:46 PM		SQL1	SQL1-AdventureWorks2017-Pb_AdventureW

Selected row details:

2/8/2020 5:04:47 PM
Job History (SQL1-AdventureWorks2017-Pb_AdventureWorks2017-SQL2.50000-5)

Step ID	Server	Job Name
SQL1	SQL1	SQL1-AdventureWorks2017-Pb_AdventureWorks2017-SQL2.50000-5

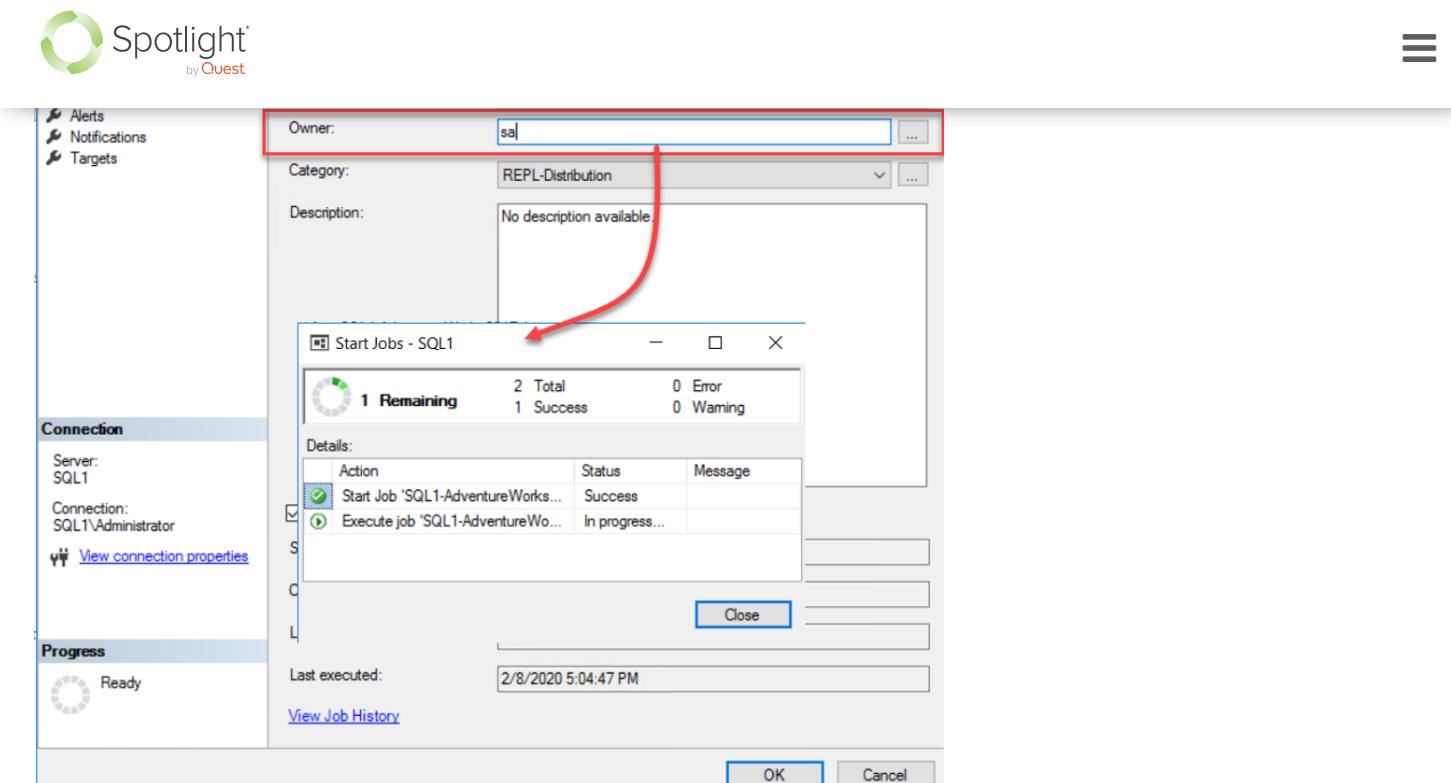
Step Name: **SQL1-AdventureWorks2017-Pb_AdventureWorks2017-SQL2.50000-5**

Duration: 00:00:00
Sql Severity: 0
Sql Message ID: 0
Operator Emailed: 0
Operator Net sent: 0
Operator Paged: 0
Retries Attempted: 0

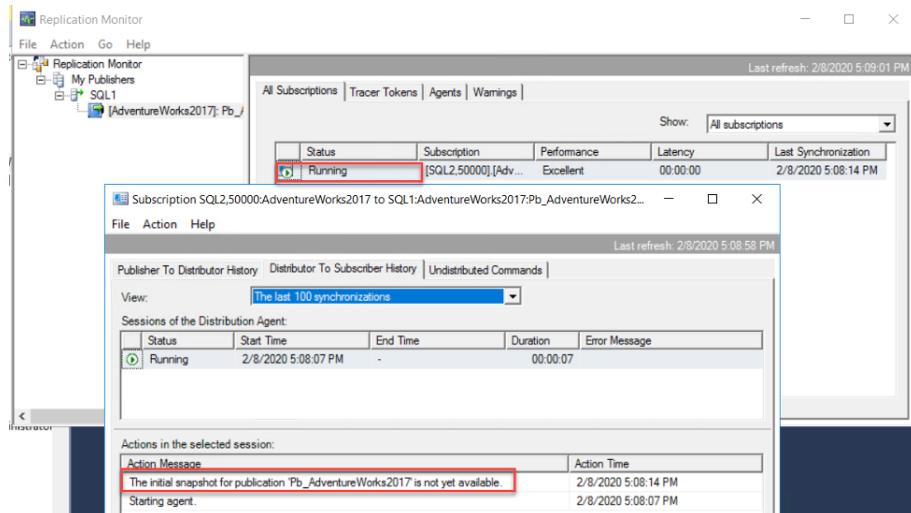
Message

The job failed. Unable to determine if the owner (WIN-B86LVO380TG\Administrator) of job SQL1-AdventureWorks2017-Pb_AdventureWorks2017-SQL2.50000-5 has server access (reason: Could not obtain information about Windows NT group/user 'WIN-B86LVO380TG\Administrator', error code 0x534. [SQLSTATE 42000] (Error 15404)).

To overcome this issue, open the Snapshot Agent job and change the owner of the job to SA or any valid administrator user, and the job will run successfully, as below:

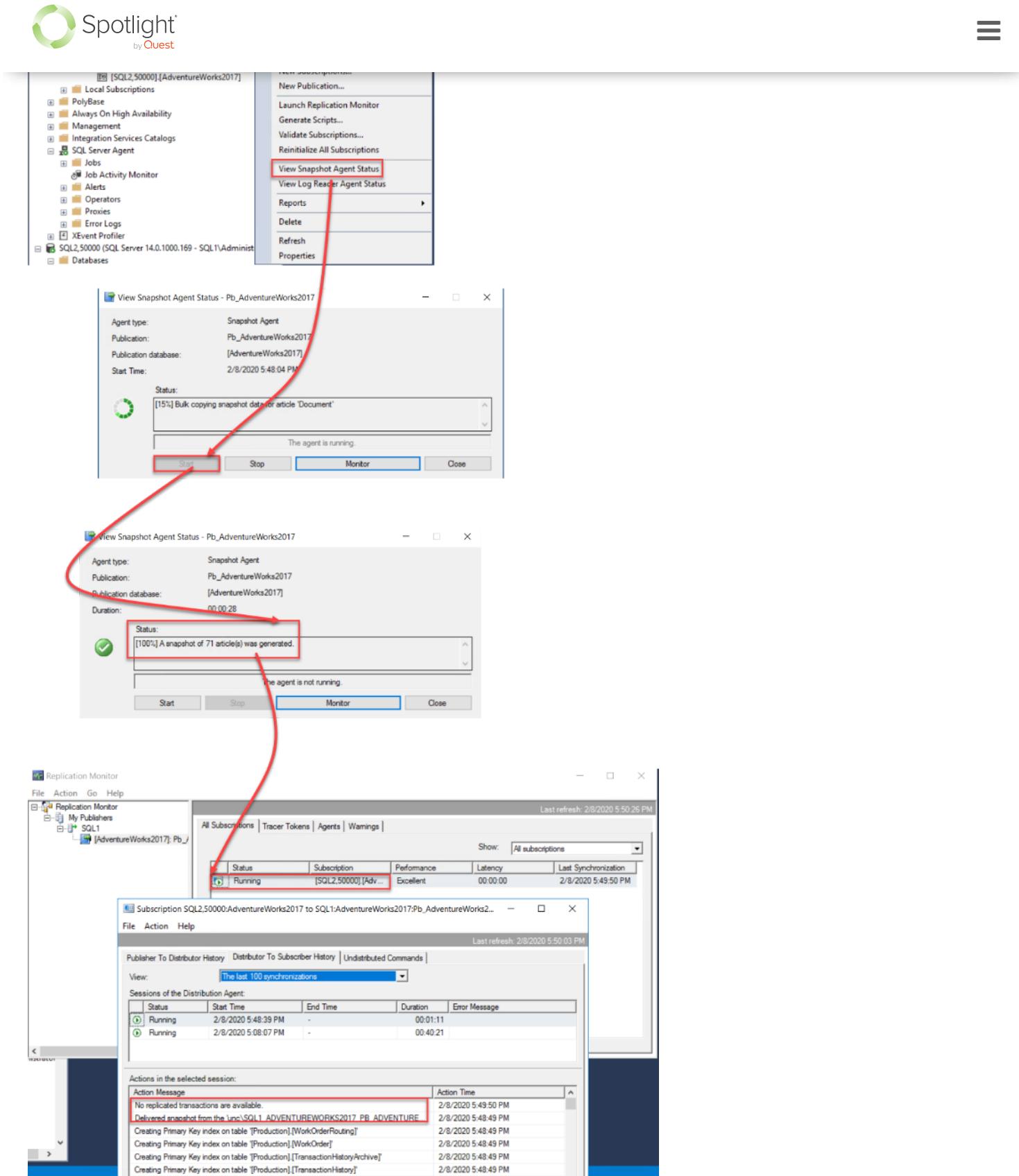


Now you will see that the Subscription status changed to Running, giving that it is waiting for the initial snapshot to start the synchronization process, as shown below:



To generate a new snapshot, right-click on the Publication, under the Replication node-> Local Publications, and select **View Snapshot Agent Status** option.

From the opened window, click on the Start button to start the snapshot creating process. When the snapshot that contains all the Publisher articles created successfully, open the Replication Monitor again and check the status of the Subscription, where you will see that the snapshot is applied to the Subscriber and synchronized with the Publisher, as shown below:



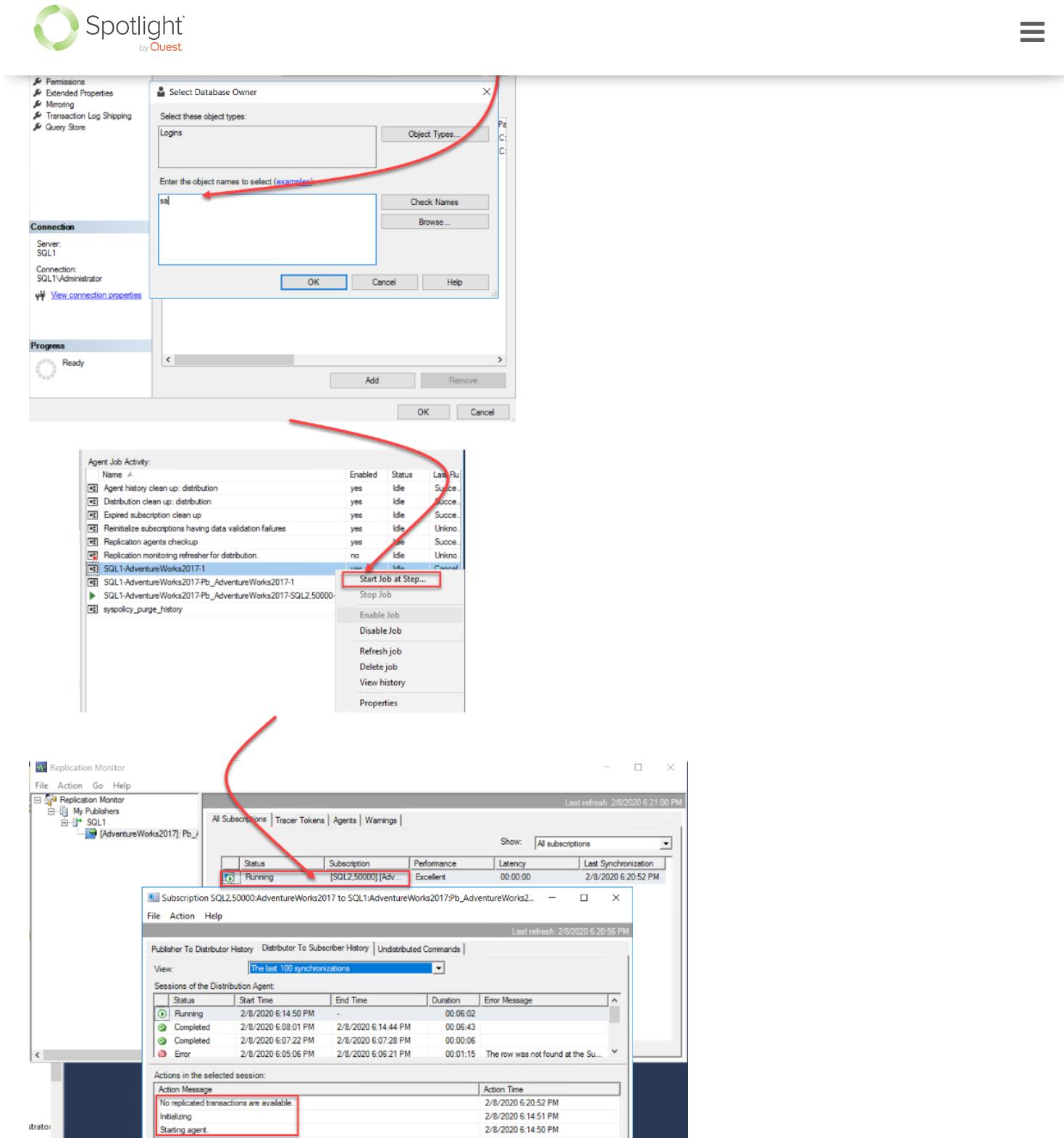
Publisher Database Owner Issue

Assume also that, when checking the status of the SQL Server Replication site, using the Replication Monitor, the replication site was failed and the failure detected at the Log Reader Agent. Checking the error message returned from that agent, it is found that there is an issue determining the current owner of the Publication database, as shown below:

The screenshot shows three windows related to SQL Server Replication:

- Top Window:** A table titled "Status" showing one row with "Error" status, "Subscription [SQL2,50000] [Adv...]", "Performance 00:00:00", and "Last Synchronization 2/8/2020 6:14:51 PM".
- Middle Window:** "Replication Monitor" window. Under "My Publishers", it shows "SQL1" and "[AdventureWorks2017] Pb...". The "Agents" tab is selected, showing two rows: "Completed" (Snapshot Agent) and "Error" (Log Reader Agent). The "Error" row is highlighted with a red box.
- Bottom Window:** "Log Reader Agent of Pb_AdventureWorks2017" window. It shows "Agent History" with four sessions: three errors and one completed. The error sessions all mention failing to execute 'sp_replcmds' on 'SQL1'. The "Error details or message of the selected session" section at the bottom also lists these errors, with the first one highlighted by a red box.

To fix that issue, we need to update the current publication database owner, by replacing it with a valid database user, using the **SP_changedbowner** system stored procedure, or simply from the database properties window. After that, run the Log Reader Agent job again, using the Job Activity Monitor window, then validate if the agent issue is no longer available, using the Replication Monitor, as shown below:



Conclusion

In this article, we demonstrated different issues that you may face while using the SQL Server Replication feature to copy data between different sites, and how to fix these issues.

It is highly recommended to keep the SQL Server Engine up to date, with the latest SPs and CUs, so all bugs related to the SQL Server Replication features will be fixed automatically. Lastly, as a proactive SQL Server database administrator, keep an eye on your replication site to fix any issue from the beginning before it becomes larger and harder to fix.

**March 26, 2020 6:30:00 AM PDT**[Tweet](#) [Share](#) [Like 1](#) [Share](#) Written by [Ahmad Yaseen](#)

Ahmad Yaseen is a SQL Server database administration leader at Aramex International Company with a bachelor's degree in computer engineering as well as .NET development experience. He is a Microsoft Certified Professional with a good experience in SQL Server development, administration, performance tuning, monitoring and high availability and disaster recovery technologies. Also, he is contributing with his SQL tips in many blogs.

[0 Comments](#) [spotlightcloud](#) [🔒 Disqus' Privacy Policy](#)[1 Login](#)[Heart Recommend](#)[Twitter Tweet](#)[Facebook Share](#)[Sort by Best](#)

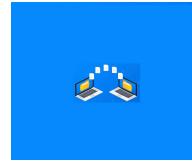
Start the discussion...

[LOG IN WITH](#)[OR SIGN UP WITH DISQUS](#) Name

Be the first to comment.

[✉ Subscribe](#) [>Add Disqus to your site](#) [Add Disqus](#) [▲ Do Not Sell My Data](#)

OTHER POSTS YOU MIGHT LIKE

**CLOUD MONITORING SMARTER**[Why Cloud Database Monitoring Tools for SQL Server are Valuable](#)**MONITORING SMARTER**[How to Use SQL Server AlwaysOn Features](#)**MONITORING SMARTER**[What Is the Purpose of Data Replication?](#)

Spotlight Products

- [Spotlight Cloud](#)
- [Spotlight Tuning Pack](#)
- [Spotlight Mobile](#)
- [Spotlight on Oracle](#)



Collective Intelligence

SQL Server Community

Oracle Community

Documentation

Spotlight Cloud Help

Spotlight Mobile Help

Spotlight Tuning Pack Help

Frequently Asked Questions

Data Handling and Security

Contact

Contact Sales

Spotlight Status

Feedback

Terms of Use

Software Transaction Agreement

Software as a Service Addendum

Privacy Statement

Quest

©2020 Quest Software Inc. ALL RIGHTS RESERVED.

