

Collect replication metadata from customer

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Issue

Some issues with Transactional Replication are caused by inconsistent replication metadata. And sometimes understanding the cause of an issue requires the analysis of the replication metadata. But the telemetry does not provide the necessary level of detail - it is only available directly in the related databases at the customer's Managed Instance.

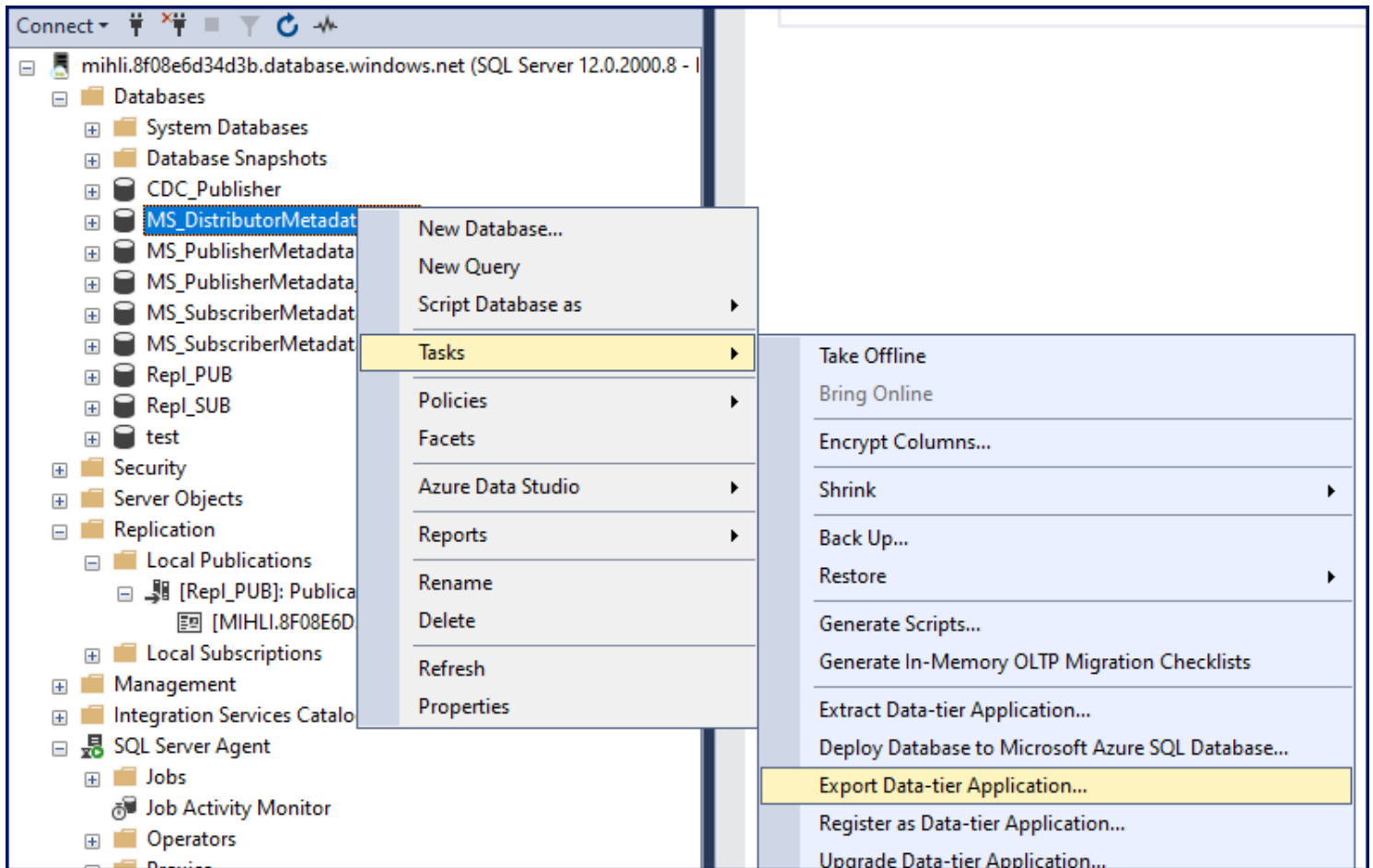
This article provides you with steps and scripts so that the customer can extract replication metadata for further analysis by CSS or PG.

How it works

The scripts below are using the following approach:

- you provide the customer with the scripts, which the customer executes against their Distribution, Publisher, and Subscriber databases
- the scripts create a new database each, named "MS_XXXXXMetadata", as a target database
- it sets the database context either to the target database, or the Publisher/Subscriber database (this is a compromise regarding safety vs. usability)
- the script then runs a `Select Into` for the relevant replication system tables into the target database
- single commands might fail, but as each command is executed in its own batch, the remaining commands can still proceed

After the scripts have executed, the customer can provide us with the content of the target databases. The easiest way to do this is by exporting them from SSMS into BACPAC files:
right-click on the database - **Tasks** - **Export Data Tier Application...**, like this:



Collect Distribution Metadata

Depending on the size of the tables, it might take a long time to extract the TOP 500 rows from `MSrepl_transactions` or `MSrepl_commands`. You may then cancel the script execution, because all other important metadata has already been extracted.

```
/*  
-----  
-- Distribution Database Replication Metadata Collection Script  
-- Execute On Distributor  
-- Assumes Distribution database names is 'distribution'  
-----*/  
  
use master  
go  
-- drop database [MS_DistributorMetadata]  
CREATE DATABASE [MS_DistributorMetadata]  
go  
  
use tempdb -- safeguard in case the create had failed  
go  
  
use [MS_DistributorMetadata]  
go  
set nocount on  
go  
  
-- server names and database details  
select * into dist_sys.servers from master..sys.servers  
go  
select * into dist_sys.databases from master..sys.databases  
go  
  
-- Transactional Replication system tables  
select * into MSarticles from distribution..MSarticles  
go  
select * into MScached_peer_lsns from distribution..MScached_peer_lsns  
go  
select * into MSdistribution_agents from distribution..MSdistribution_agents  
go  
select * into MSdistribution_history from distribution..MSdistribution_history  
go  
select * into MSlogreader_agents from distribution..MSlogreader_agents  
go  
select * into MSlogreader_history from distribution..MSlogreader_history  
go  
select * into MSpublication_access from distribution..MSpublication_access  
go  
select * into MSpublications from distribution..MSpublications  
go  
select * into MSpublicationthresholds from distribution..MSpublicationthresholds  
go  
select * into MSPublisher_databases from distribution..MSPublisher_databases  
go  
select * into MSrepl_backup_lsns from distribution..MSrepl_backup_lsns  
go  
select * into MSrepl_errors from distribution..MSrepl_errors  
go  
select * into MSrepl_identity_range from distribution..MSrepl_identity_range  
go  
select * into MSrepl_originators from distribution..MSrepl_originators  
go  
select * into MSrepl_version from distribution..MSrepl_version  
go  
select * into MSreplication_monitordata from distribution..MSreplication_monitordata  
go  
select * into MSSnapshot_agents from distribution..MSSnapshot_agents  
go  
select * into MSSnapshot_history from distribution..MSSnapshot_history  
go  
select * into MSsubscriber_info from distribution..MSsubscriber_info  
go  
select * into MSsubscriber_schedule from distribution..MSsubscriber_schedule  
go
```

```
select * into MSsubscriptions from distribution..MSsubscriptions
go
select * into MSsync_states from distribution..MSsync_states
go
select * into MStracer_history from distribution..MStracer_history
go
select * into MStracer_tokens from distribution..MStracer_tokens
go
select * into sysschemaarticles from distribution..sysschemaarticles
go
select top 500 * into MSrepl_transactions_OLDEST from distribution..MSrepl_transactions with (nolock) order by
select top 500 * into MSrepl_transactions_NEWEST from distribution..MSrepl_transactions with (nolock) order by
go
select top 500 * into MSrepl_commands_OLDEST from distribution..MSrepl_commands with (nolock) order by xact_se
select top 500 * into MSrepl_commands_NEWEST from distribution..MSrepl_commands with (nolock) order by xact_se
go

use master
go

-- export the "MS_DistributorMetadata" database to BACPAC
```

Collect Publisher Metadata

The customer needs to change the name of the Publisher database on the `use` command to make the script work as intended:

```

/*****
-- Publisher Replication Metadata Collection Script
-- Execute on the Publisher database:
--   set the USE command to match your published database
--
-- Note: Some errors may appear as not all tables may exists on all publishers
*****/

use master
go

-- drop database [MS_PublisherMetadata]
CREATE DATABASE MS_PublisherMetadata
go

use tempdb -- safeguard in case the USE below fails
go

/*****
/*   Replace "PublisherDB_Name" below with your Publisher database name   */
*****/
USE PublisherDB_Name
go

set nocount on
go

-- server names and database details
select * into [MS_PublisherMetadata].dbo.pub_syssservers from master..syssservers with (nolock)
go
select * into [MS_PublisherMetadata].dbo.pub_sysdatabases from master..sysdatabases with (nolock)
go
select * into [MS_PublisherMetadata].dbo.pub_sysobjects from dbo.sysobjects with (nolock)
go
select * into [MS_PublisherMetadata].dbo.pub_syscolumns from dbo.syscolumns with (nolock)
go
select * into [MS_PublisherMetadata].dbo.pub_sysforeign_keys from sys.foreign_keys with (nolock)
go
select * into [MS_PublisherMetadata].dbo.pub_systriggers from sys.triggers with (nolock)
go

-- Transactional Replication system tables
select * into [MS_PublisherMetadata].dbo.sysreplservers from dbo.sysreplservers with (nolock)
go
select * into [MS_PublisherMetadata].dbo.syspublications from dbo.syspublications with (nolock)
go
select * into [MS_PublisherMetadata].dbo.syssubscriptions from dbo.syssubscriptions with (nolock)
go
select * into [MS_PublisherMetadata].dbo.sysarticles from dbo.sysarticles with (nolock)
go
select * into [MS_PublisherMetadata].dbo.sysarticlecolumns from dbo.sysarticlecolumns with (nolock)
go
select * into [MS_PublisherMetadata].dbo.sysschemaarticles from dbo.sysschemaarticles with (nolock)
go
select * into [MS_PublisherMetadata].dbo.systranschemas from dbo.systranschemas with (nolock)
go
select * into [MS_PublisherMetadata].dbo.sysarticleupdates from dbo.sysarticleupdates with (nolock)
go
select * into [MS_PublisherMetadata].dbo.MSpub_identity_range from dbo.MSpub_identity_range with (nolock)
go

-- export the "MS_PublisherMetadata" database to BACPAC

```

Collect Subscriber Metadata

The customer needs to change the name of the Subscriber database on the `USE` command to make the script work as intended:

```

/*****/
-- Subscriber Replication Metadata Collection Script
-- Execute on the Subscriber database:
--     set the USE command to match your Subscriber database
--
-- Note: Some errors may appear as not all tables may exists on all subscribers
/*****/

use master
go

-- drop database [MS_SubscriberMetadata]
CREATE DATABASE [MS_SubscriberMetadata]
go

use tempdb -- safeguard in case the USE below fails
go

/*****/
/*   Replace "SubscriberDB_Name" below with your subscriber database name   */
/*****/
USE SubscriberDB_Name
go

set nocount on
go

-- Server details:
select * into [MS_SubscriberMetadata].dbo.sub_syssservers from master..syssservers
go
select * into [MS_SubscriberMetadata].dbo.sub_sysdatabases from master..sysdatabases
go
select * into [MS_SubscriberMetadata].dbo.sub_sysobjects from dbo.sysobjects
go
select * into [MS_SubscriberMetadata].dbo.sub_syscolumns from dbo.syscolumns
go
select * into [MS_SubscriberMetadata].dbo.sub_sysforeign_keys from sys.foreign_keys
go
select * into [MS_SubscriberMetadata].dbo.sub_systriggers from sys.triggers
go

--Transactional Replication system tables
select * into [MS_SubscriberMetadata].dbo.MSreplication_subscriptions from dbo.MSreplication_subscriptions with
go
select * into [MS_SubscriberMetadata].dbo.MSsubscription_agents from dbo.MSsubscription_agents with (nolock)
go
select * into [MS_SubscriberMetadata].dbo.MSreplication_objects from dbo.MSreplication_objects with (nolock)
go
select * into [MS_SubscriberMetadata].dbo.MSsnapshotdeliveryprogress from dbo.MSsnapshotdeliveryprogress with
go
select * into [MS_SubscriberMetadata].dbo.MSsubscription_properties from dbo.MSsubscription_properties with (n
go
select * into [MS_SubscriberMetadata].dbo.MSsub_identity_range from dbo.MSsub_identity_range with (nolock)
go

-- export the "MS_SubscriberMetadata" database to BACPAC

```

How good have you found this content?

