How to configure replication using replication support only

To configure the transactional replication using snapshot, we need to configure the distributor, Publisher and Subscriber. Also we need to handshake each server with another one. Below are the detailed steps for configuring replication from scratch.

Note: Change the variables and location according to env.

Lets assume below are the server details and default instance of SQL server is installed on each server.
1. SQLNodeDist = Distributor Server
2. SQLNodeSubs = Subscriber Server
3. SQLNodePubl = Publisher Server

Step 1: Configure Distributor
Connect SSMS on Distributor Server and execute below command

```
USE MASTER
GO
 --Declaring variables
DECLARE @DistributorServer SYSNAME, @DistributorAdminDBPassword VARCHAR(60)
SELECT @DistributorServer = 'SQLNodeDist'
SELECT @DistributorAdminDBPassword = 'Test123$'
--Set the name and then print the name of the distributor.
DECLARE @DistributorServer_msg varchar (50)
SET @DistributorServer_msg = ' The name of the distributor server is '
PRINT char (10) + char (13) + @DistributorServer_MSG + @DistributorServer + Char (10)
+ Char (13) SELECT @DistributorServer as DistributionServer,  @DistributorAdminDBPassw
ord as DistributorAdminDBPassword
EXEC SP_ADDDISTRIBUTOR    @distributor = @DistributorServer, @password = @DistributorA
dminDBPassword
GO
```

Step 2: Add Distribution database on distributor server
Connect SSMS on Distributor Server and execute below command

```
USE MASTER
GO
DECLARE @DistributorAdminDBPassword varchar(60)
DECLARE @dataFolder varchar(1000)
DECLARE @logFolder varchar(1000)
DECLARE @dataFileSize INT
DECLARE @LOGFileSIze INT
SELECT @DistributorAdminDBPassword = 'Test123$'
SELECT @dataFolder = 'E:\SQLDATA\'
SELECT @logFolder = 'F:\SQLLOG\'
SELECT @dataFileSize = '200'
SELECT @LOGFileSIze = '10'
SELECT 'Configuration values are',@DistributorAdminDBPassword
DistributorAdminDBPassword ,@dataFolder dataFolder,  @logFolder
logFolder , @dataFileSize dataFileSize ,@LOGFileSIze LOGFileSIze
--needs to be change as per ENV
EXEC SP_ADDDISTRIBUTIONDB
 @database = N'distribution'
```

```
,@data_folder = @dataFolder
,@data_file = N'distribution.MDF'
,@data_file_size = @dataFileSize
,@log_folder = @logFolder
,@log_file = N'distribution.LDF'
,@log_File_Size = @LOGFileSize
,@min_distretention = 0
,@max_distretention = 72
,@history_retention = 48
,@security_mode = 1
--,@login = @DistributorAgent
,@Password = @DistributorAdminDBPassword
GO
```

Step 3: Add Remote Publishers(Telling the Distributor server that these are your possible publishers)
Connect SSMS on Distributor Server and execute below command

```
DECLARE @PublisherServer sysname,@AltSnapshotFolder varchar(600)
SELECT @PublisherServer = 'SQLNodePubl'
SELECT @AltSnapshotFolder = '\\SQLNodedist HYPERLINK
"file://sqlnodedist/ReplSnapshot/"\ReplSnapshot\'
SELECT @PublisherServer PublisherServer ,@AltSnapshotFolder AltSnapshotFolder
EXEC sp_adddistpublisher @publisher = @PublisherServer, @distribution_db = N'distribut
ion', @security_mode = 1, @working_directory = @AltSnapshotFolder
, @trusted = N'false', @thirdparty_flag = 0, @publisher_type = N'MSSQLSERVER'
GO
```

Step 4: Add Remote Distributor on Publisher server(Telling the publisher server that this is your distributor)
Connect SSMS on Publisher Server and execute below command

```
USE MASTER
DECLARE @DistributorServer VARCHAR(500)
SELECT @DistributorServer = 'SQLNodeDist'
DECLARE @DistributorAdminPassword varchar (500)
SELECT @DistributorAdminPassword = 'Test123$'
SELECT @DistributorAdminPassword As DistributorAdminPassword , @DistributorServer AS
DistributorServer
EXEC sp_adddistributor @distributor = @DistributorServer, @password = @DistributorAdmi
nPassword
GO
```

Step 5: Add Remote Distributor on Publisher server(Telling the publisher server that this is your distributor)
Connect SSMS on Publisher Server and execute below command

```
USE MASTER
DECLARE @SubscriberServer varchar(500)
SELECT @SubscriberServer = 'SQLNodeSubs'
SELECT @SubscriberServer as  SubscriberServer
EXEC SP_ADDSUBSCRIBER @subscriber = @SubscriberServer, @type = 0, @description = N''
GO
```

Initial setup of relationship between Distributor, Publisher and Subscriber is complete.

Step 6: Add Pull subscritions.
Connect SSMS on Subscriber Server and execute below command

```
----- Adding the Subscribers. Connect to the first Subscriber first, execute it.
Repeat the same process for the second Subscriber again.
USE Reporting_Subscriber
```

```
GO
EXEC SP_ADDPULLSUBSCRIPTION @publisher = 'SQLNodePubl'
, @publication = 'Trans_Publication_PublisherDB'
, @publisher_db = 'Publisherdb' , @independent_agent = N'True'
, @subscription_type = N'pull', @description = N'', @update_mode = N'read only'
, @immediate_sync = 0
--- Adding the job for the subscriber.
EXEC sp_addpullsubscription_agent @publisher = 'SQLNodePubl', @publisher_db = 'Publish
erDB', @publication = 'Trans_Publication_PublisherDB', @distributor = 'SQLNodeDist' ,
@distributor_security_mode = 1, @distributor_login = N'', @distributor_password = N'',
 @enabled_for_syncmgr = N'False', @frequency_type = 64, @frequency_interval = 0, @freq
uency_relative_interval = 0, @frequency_recurrence_factor = 0, @frequency_subday = 0,
@frequency_subday_interval = 0, @active_start_time_of_day = 0, @active_end_time_of_day
 = 235959, @active_start_date = 20150627, @active_end_date = 99991231, @alt_snapshot_f
older = '\\SQLNodedist\ReplSnapshot\', @working_directory = N'', @use_ftp = N'False',
@job_login = null, @job_password = null, @publication_type = 0
GO
```

Step 7: Create publications
Connect SSMS on Publisher Server and execute below command

```
USE PublisherDB
GO
EXEC sp_replicationdboption @dbname = 'PublisherDB'
              ,@optname = 'Publish'
              ,@value = 'true'
GO
exec [Publisherdb].sys.sp_addlogreader_agent @job_login = null, @job_password = null,
@publisher_security_mode = 1
GO
exec [Publisherdb].sys.sp_addqreader_agent @job_login = null, @job_password = null, @f
rompublisher = 1
GO
---- Adding the transactional publication
USE Publisher
GO
EXEC sp_addpublication @publication = 'Trans_Publication_PublisherDB'
              , @description = N'Transactional publication'
              , @sync_method = N'concurrent'
              , @retention = 0, @allow_push = N'true', @allow_pull = N'true'
              , @allow_anonymous = N'false', @enabled_for_internet = N'false'
              , @snapshot_in_defaultfolder = N'false'
              ,@alt_snapshot_folder = '\\SQLNodedist\ReplSnapshot\'
              , @compress_snapshot = N'false', @ftp_port = 21
              , @ftp_login = N'anonymous'
              , @allow_subscription_copy = N'false'
              , @add_to_active_directory = N'false', @repl_freq = N'continuous'
              , @status = N'active', @independent_agent = N'true'
              , @immediate_sync = N'false', @allow_sync_tran = N'false'
              , @autogen_sync_procs = N'false'
              , @allow_queued_tran = N'false', @allow_dts = N'false'
              , @replicate_ddl = 1, @allow_initialize_from_backup = N'false'
              , @enabled_for_p2p = N'false', @enabled_for_het_sub = N'false'

GO

EXEC SP_ADDPUBLICATION_SNAPSHOT
              @publication = 'Trans_Publication_PublisherDB'
              , @frequency_type = 4
              , @frequency_interval = 1
              , @frequency_relative_interval = 0, @frequency_recurrence_factor = 0
```

```
, @frequency_subday = 8, @frequency_subday_interval = 4
, @active_start_time_of_day = 0
, @active_end_time_of_day = 235959
, @active_start_date = 0
, @active_end_date = 0
, @job_login = null, @job_password = null
, @publisher_security_mode = 1
```

Publication has been setup now
THE NEXT STEP IS TO ADD AN ARTICLE TO THE PUBLICATION and after adding an article we need to run the sp_addsubscription proc on the Publisher

Step 8: Add article
Connect SSMS on Publisher Server and execute below command

```
use [Publisherdb]
exec sp_addarticle @publication = N'Trans_Publication_PublisherDB', @article = N'UserP
asswords', @source_owner = N'dbo', @source_object = N'UserPasswords', @type = N'logbas
ed', @description = N'', @creation_script = N'', @pre_creation_cmd = N'drop', @schema_
option = 0x00000000080350DF, @identityrangemanagementoption = N'none', @destination_ta
ble = N'UserPasswords', @destination_owner = N'dbo', @status = 24, @vertical_partition
 = N'false', @ins_cmd = N'CALL [dbo].[sp_MSins_dboUserPasswords]', @del_cmd = N'CALL
[dbo].[sp_MSdel_dboUserPasswords]', @upd_cmd = N'SCALL
[dbo].[sp_MSupd_dboUserPasswords]'
GO
use [Publisherdb]
GO
EXEC SP_ADDSUBSCRIPTION @publication = 'Trans_Publication_PublisherDB', @subscriber =
'SQLNodeSubs', @destination_db = 'Reporting_Subscriber', @subscription_type = N'Pull',
 @sync_type = N'replication support only', @article = N'ALL', @update_mode = N'read
only', @subscriber_type = 0
--EXEC SP_REFRESHSUBSCRIPTIONS @publication = N'Trans_Publication_PublisherDB'
```

SP_ADDSUBSCRIPTION proc has a parameter @sync_type. This particular parameter accepts different values depending upon the way you want your subscriptions to be initialized.
In replication support only, we need to make sure published table should be in sync on publisher and subscriber.

Step 8: Verify the status and schedule of replication agents jobs and modify as per requirement.

Step 9: Once the previous article added, we can add more article to the publication and now this time after adding article we only need to refresh the subscrition as it is already created in first time.

```
use [Publisherdb]
exec sp_addarticle @publication = N'Trans_Publication_PublisherDB', @article = N'UserP
asswords', @source_owner = N'dbo', @source_object = N'UserPasswords', @type = N'logbas
ed', @description = N'', @creation_script = N'', @pre_creation_cmd = N'drop', @schema_
option = 0x00000000080350DF, @identityrangemanagementoption = N'none', @destination_ta
ble = N'UserPasswords', @destination_owner = N'dbo', @status = 24, @vertical_partition
 = N'false', @ins_cmd = N'CALL [dbo].[sp_MSins_dboUserPasswords]', @del_cmd = N'CALL
[dbo].[sp_MSdel_dboUserPasswords]', @upd_cmd = N'SCALL
[dbo].[sp_MSupd_dboUserPasswords]'
GO
```

```
EXEC SP_REFRESHSUBSCRIPTIONS @publication = N'Trans_Publication_PublisherDB'
```