Enabling Replication

The following information illustrates the steps required to enable a High Availability Replicant Server.

It is assumed that you already have a functional installation of TapeTrack Server running.

All steps must be performed in the order presented to create a successful connection between the Master and Replicant Server.

IP addresses included in the instructions are for demonstration only, these must be replaced with your correct values.

You have made a **complete backup of the master database** before attempting any of these instructions to maintain the database information should you not complete the process successfully.

## Steps On Remote Server

Install the TapeTrack Framework Server software on your Replicant machine.

Stop the service on the Replicant machine.
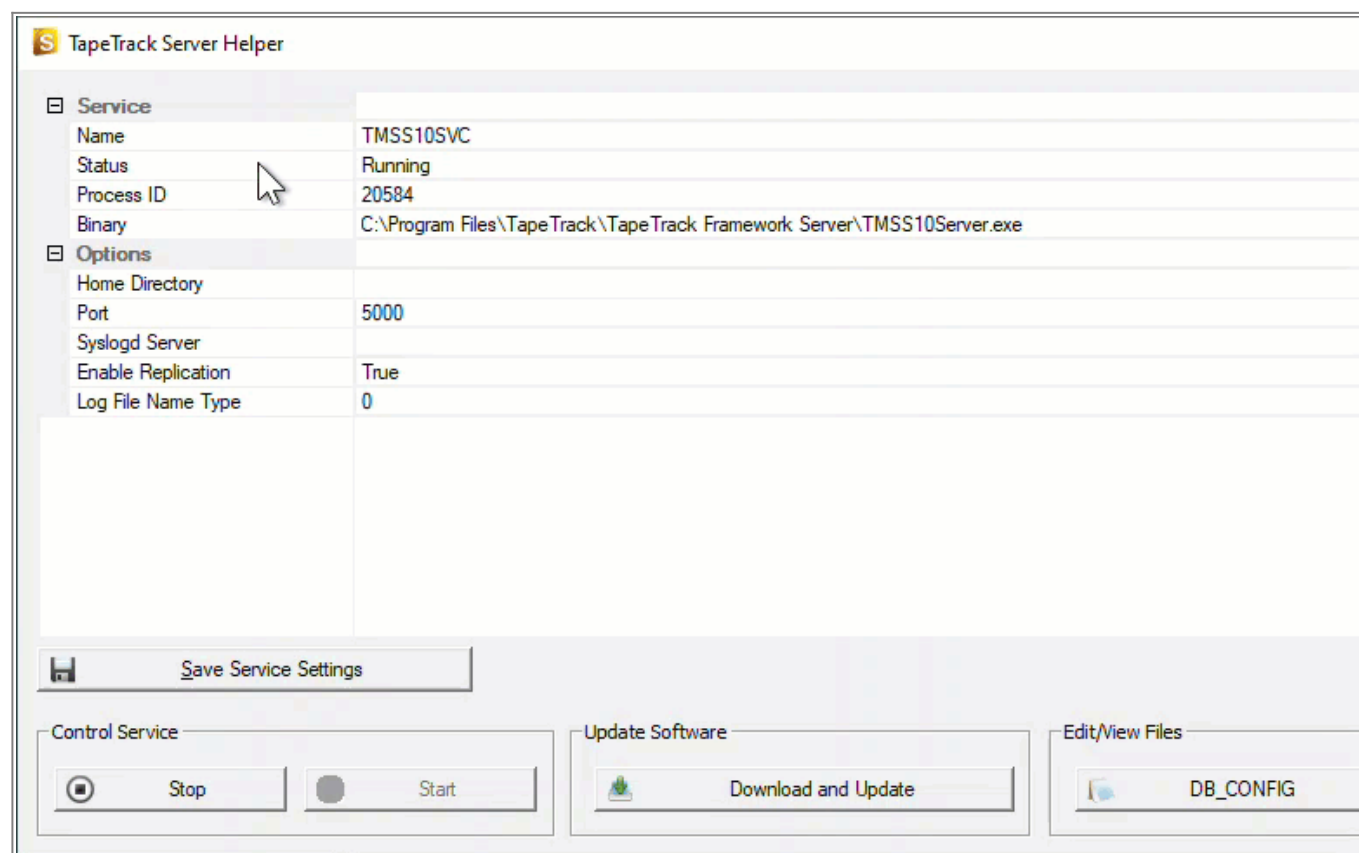
Navigate Windows File Explorer to the TapeTrack Framework Server installation directory (TapeTrack\TapeTrack Framework Server) to the var\db folder.

Delete all database files on the Replicant machine (all files in the TapeTrack\TapeTrack Framework Server\var\db directory) **EXCEPT** the DB_CONFIG file).
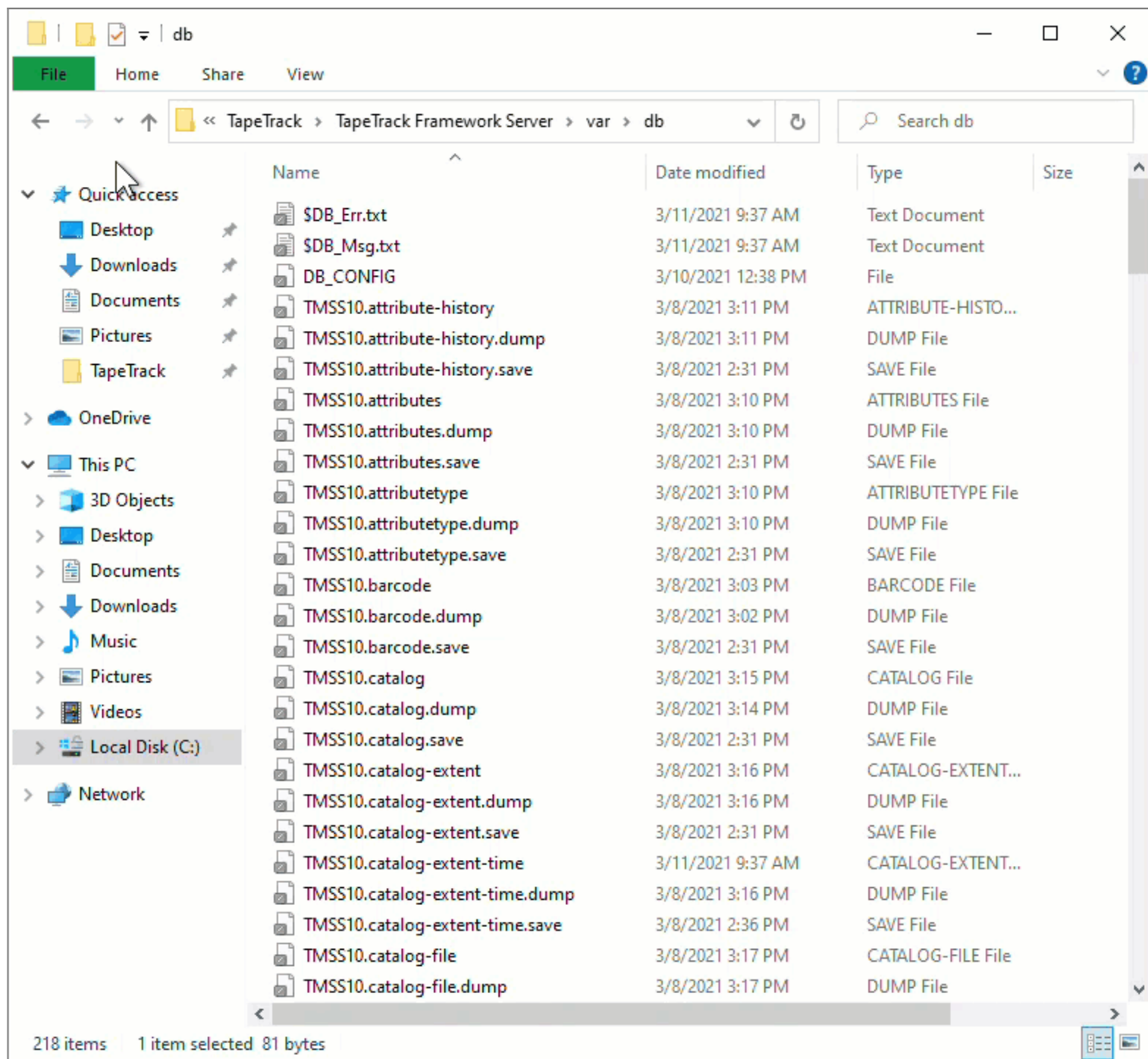
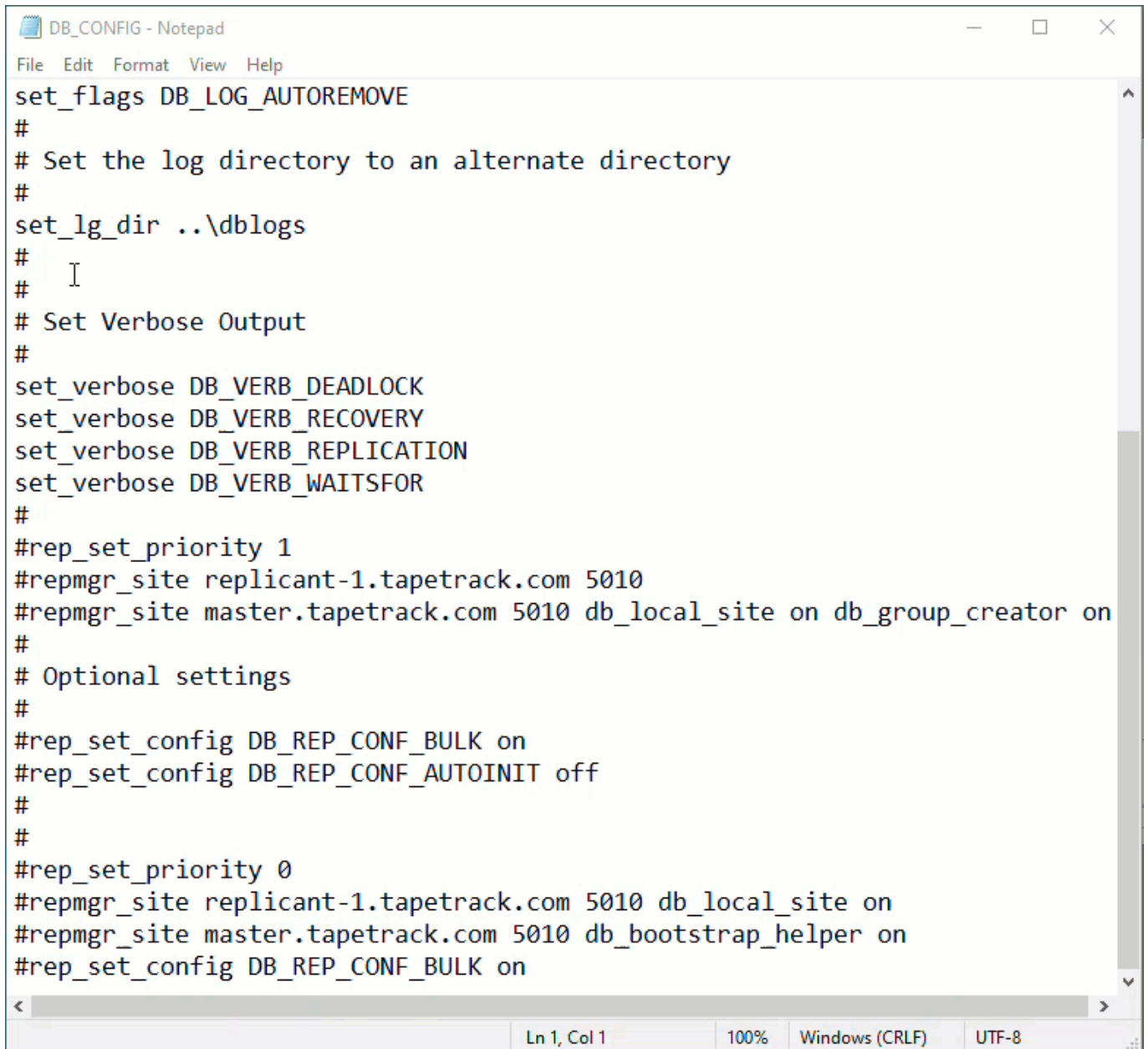Open the DB_CONFIG file in Notepad, or equivalent text editor.

Edit the TapeTrack\TapeTrack Framework Server\DB_CONFIG file to remove the comments (#'s) starting from the line **rep-set-priority 0** to make the machine a Replicant.

Edit the Replicant Server and Master Server host names in the DB_CONFIG file.

- Replace **replicant-1.tapetrack.com** with the IP address of **your** Replicant Server (your_replicant_IP_address used as Replicant IP example) and port number if not using the default 5100 value.
- Replace **master.tapetrack.com** with the IP address of **your** Master Server (your_master_IP_address used as Master IP example) and port number if not using the default 5100 value.

> ⚠ Ensure you use the IP4 address for the Master and Replicant Server as using the domain name can cause issues with the IP6 address replacing the IP4 address, stopping the Master and Replicant communication.

```
DB_CONFIG - Notepad                                         —    □    ×
File  Edit  Format  View  Help
set_flags DB_LOG_AUTOREMOVE
#
# Set the log directory to an alternate directory
#
set_lg_dir ..\dblogs
#
#      I
#
# Set Verbose Output
#
set_verbose DB_VERB_DEADLOCK
set_verbose DB_VERB_RECOVERY
set_verbose DB_VERB_REPLICATION
set_verbose DB_VERB_WAITSFOR
#
#rep_set_priority 1
#repmgr_site replicant-1.tapetrack.com 5010
#repmgr_site master.tapetrack.com 5010 db_local_site on db_group_creator on
#
# Optional settings
#
#rep_set_config DB_REP_CONF_BULK on
#rep_set_config DB_REP_CONF_AUTOINIT off
#
#
#rep_set_priority 0
#repmgr_site replicant-1.tapetrack.com 5010 db_local_site on
#repmgr_site master.tapetrack.com 5010 db_bootstrap_helper on
#rep_set_config DB_REP_CONF_BULK on

                              Ln 1, Col 1        100%   Windows (CRLF)   UTF-8
```

> 💡 Ensure that the replication TCP/IP ports specified in the DB_CONFIG file are open for inbound connections.

Steps On Master Server
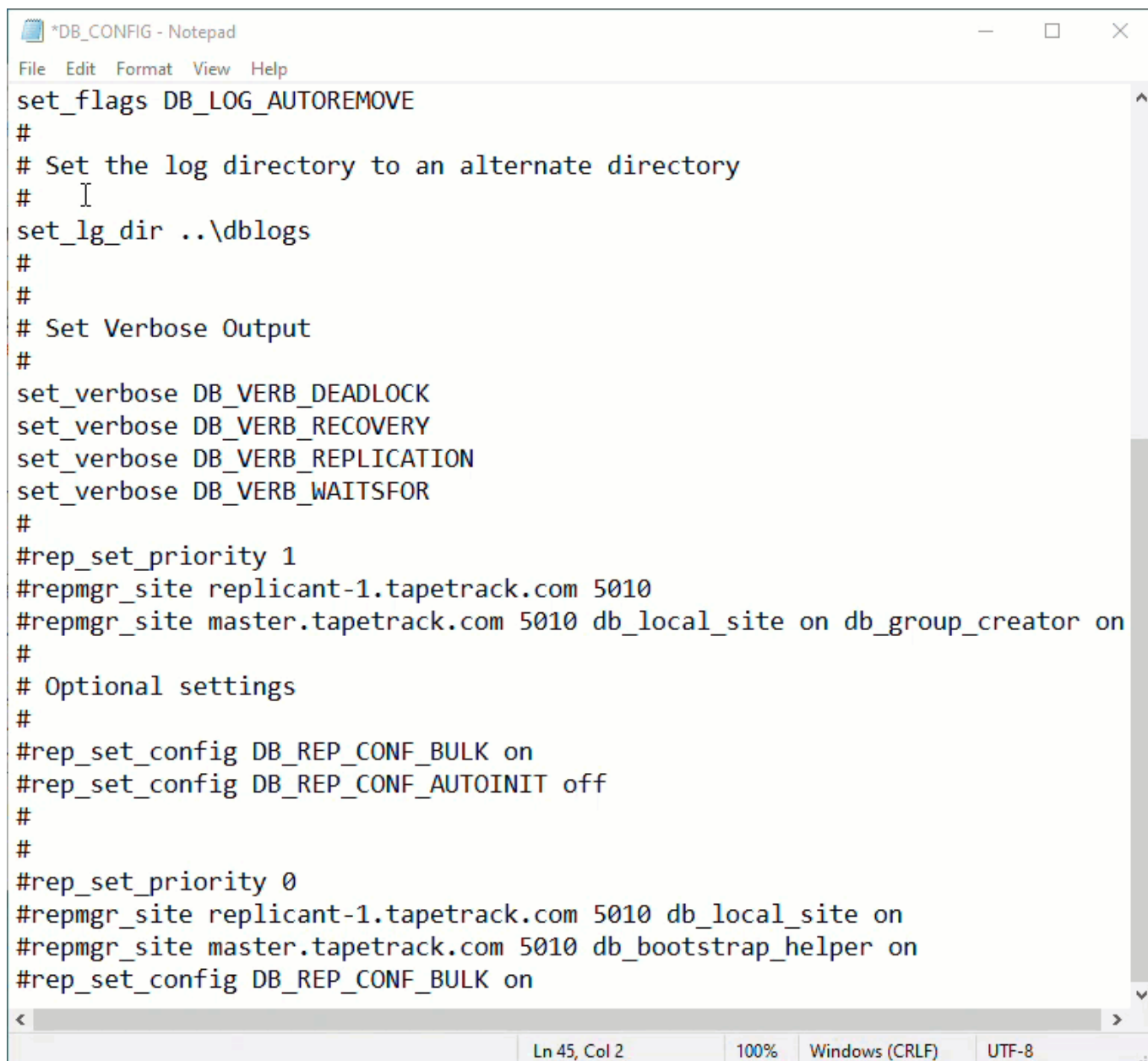
Stop the TapeTrack service on the master TapeTrack server.

Edit the TapeTrack\TapeTrack Framework Server\DB_CONFIG file and remove the comments (#'s) starting from the line **rep-set-priority 1** to make the machine a master server.

Edit the DB_CONFIG file to define the local and remote server. Edit the Replicant Server and Master Server host names in the DB_CONFIG file.

- Replace **replicant-1.tapetrack.com** with the domain name (or IP address) of **your** Replicant Server (your_replicant_IP_address used as Replicant IP example).

- Replace **master.tapetrack.com** with the domain name (or IP address) of **your** Master Server (your_master_IP_address used as Master IP example).

```
*DB_CONFIG - Notepad
File  Edit  Format  View  Help
set_flags DB_LOG_AUTOREMOVE
#
# Set the log directory to an alternate directory
#
set_lg_dir ..\dblogs
#
#
# Set Verbose Output
#
set_verbose DB_VERB_DEADLOCK
set_verbose DB_VERB_RECOVERY
set_verbose DB_VERB_REPLICATION
set_verbose DB_VERB_WAITSFOR
#
#rep_set_priority 1
#repmgr_site replicant-1.tapetrack.com 5010
#repmgr_site master.tapetrack.com 5010 db_local_site on db_group_creator on
#
# Optional settings
#
#rep_set_config DB_REP_CONF_BULK on
#rep_set_config DB_REP_CONF_AUTOINIT off
#
#
#rep_set_priority 0
#repmgr_site replicant-1.tapetrack.com 5010 db_local_site on
#repmgr_site master.tapetrack.com 5010 db_bootstrap_helper on
#rep_set_config DB_REP_CONF_BULK on

                              Ln 45, Col 2        100%   Windows (CRLF)   UTF-8
```

Delete all, and only, the files starting with `_db.` and `db.rep.`. This step is made easier if you sort the files in ascending order of file names to group them all together.
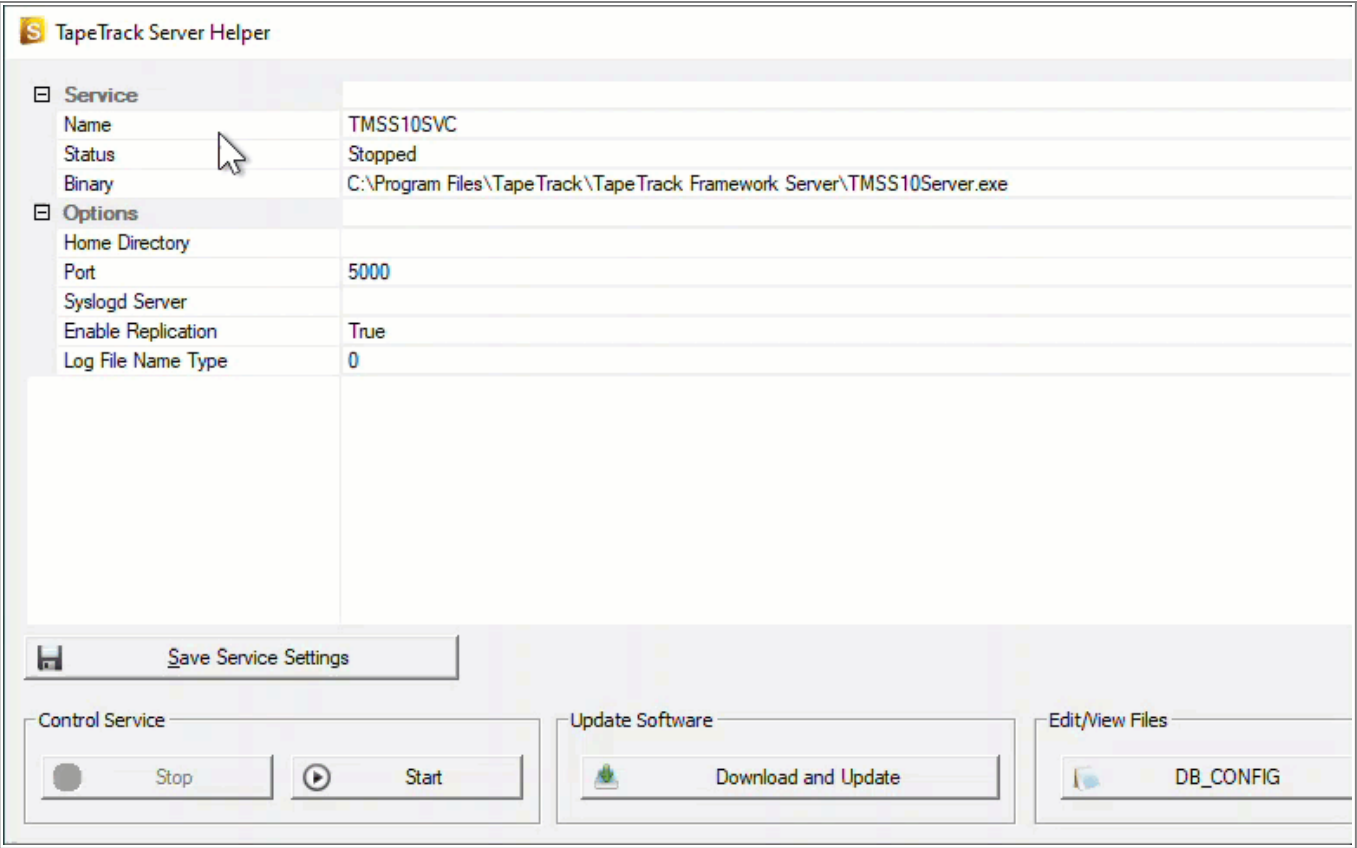
These files will be rebuilt when the server is restarted using the information of the new master and replicant details.
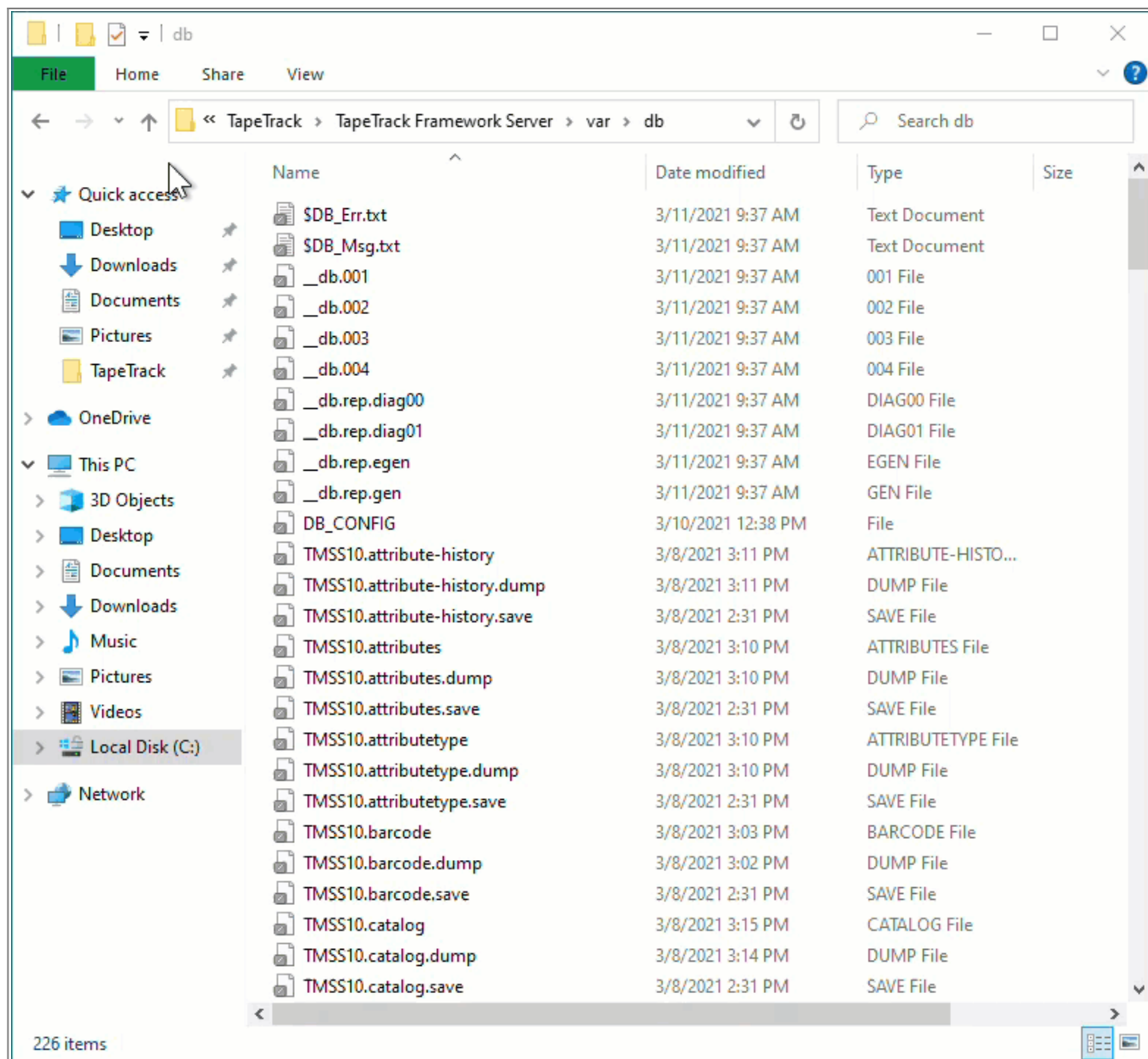
💡 Ensure that the replication TCP/IP ports are open for inbound/outbound connections.
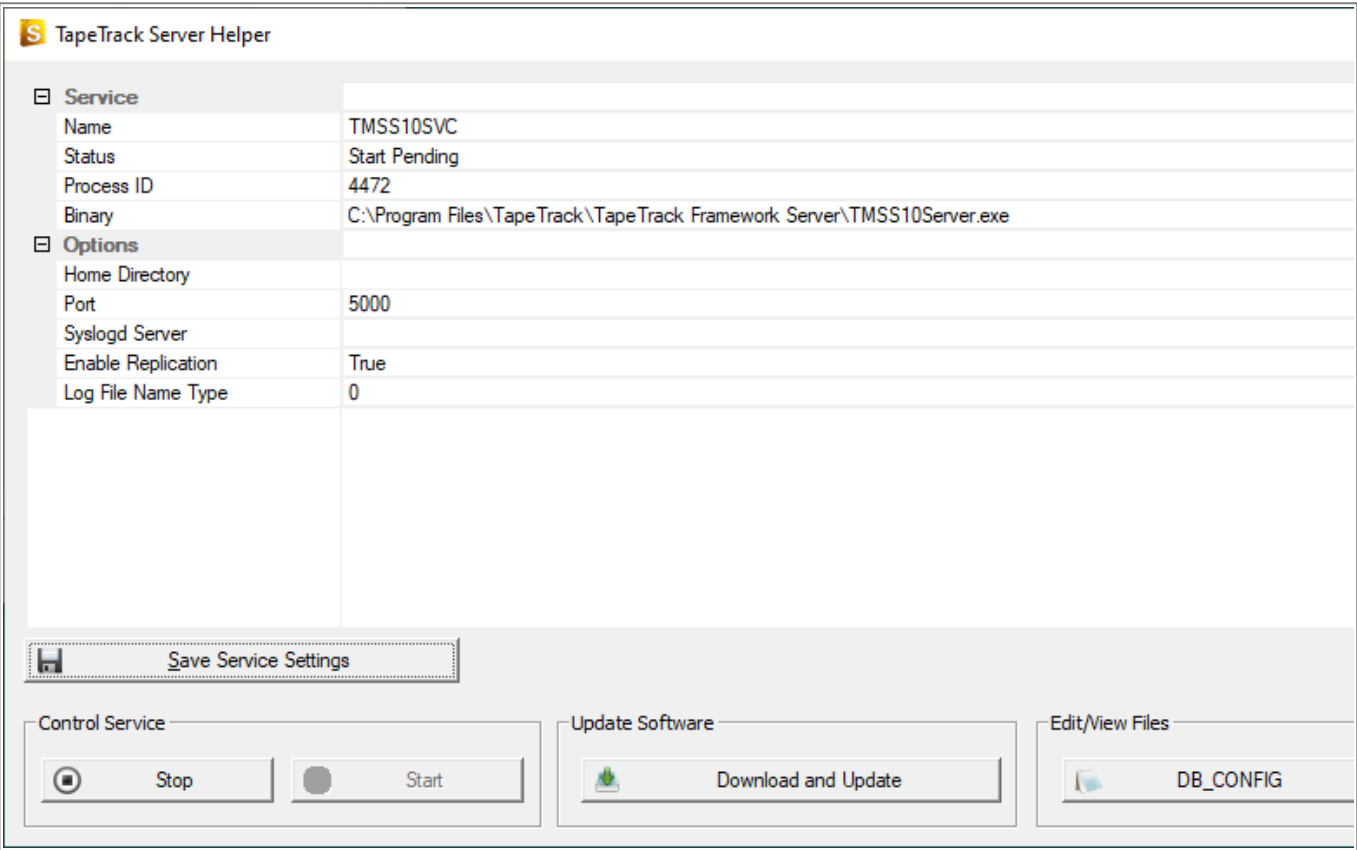
Start The Servers

Start the master TapeTrack Server.

Once the master server is running, start the TapeTrack service on the remote machine.

The replicant server will prepare the database for connection to the master server and move into `Start Pending` mode while waiting for the master server to respond.

The master server will now connect to the replicant server and load the database information across

the connection. This may take time depending on the database size.

Once the database is fully replicated the replicant server will now display running.

Confirming Functionality Of Primary And Replicant Servers

Open $DB_Msg.txt file (in the var/db directory) on both the primary and replicant server to ensure that replication is functional.

> 💡 Ensure that all firewall ports are open to allow the replication traffic to pass between the replicants.

Master $DB_Msg.txt file showing connection between master and replicant and the process of sending database information.

```
$DB_Msg.txt - Notepad                                                    —   □   ×
File  Edit  Format  View  Help
2021-03-11 11:52:55 BDB1519 Maximum transaction ID 0 recovery checkpoint [1][2209496]
2021-03-11 11:52:55 [77781:703000][16880/18164] REP_UNDEF: set membership for 192.168.120.96:5010 4 (wa
2021-03-11 11:54:48 [77894:671000][9420/14500] REP_UNDEF: EID 0 is assigned for site 192.168.0.197:5010
2021-03-11 11:54:48 [77894:671000][9420/14500] REP_UNDEF: EID 1 is assigned for site 192.168.0.96:5010
2021-03-11 11:54:48 BDB2526 Finding last valid log LSN: file: 1 offset 2232154
2021-03-11 11:54:48 BDB1518 Recovery complete at Thu Mar 11 11:54:48 2021
2021-03-11 11:54:48 BDB1519 Maximum transaction ID 0 recovery checkpoint [1][2232098]
2021-03-11 11:54:48 [77894:703000][9420/14500] REP_UNDEF: set membership for 192.168.0.96:5010 4 (was 0
2021-03-11 11:54:48 [77894:718000][9420/14500] REP_UNDEF: New master gen 1, egen 2
2021-03-11 11:54:48 [77894:718000][9420/14500] MASTER: rep_start: Old log version was 19
2021-03-11 11:54:48 [77894:718000][9420/14500] MASTER: var/db rep_send_message: msgv = 7 logv 19 gen =
2021-03-11 11:54:48 [77894:718000][9420/14500] MASTER: restore_prep: No prepares. Skip.
2021-03-11 11:54:48 [77894:718000][9420/14500] MASTER: var/db rep_send_message: msgv = 7 logv 19 gen =
2021-03-11 11:54:48 [77894:718000][9420/14500] MASTER: var/db rep_send_message: msgv = 7 logv 19 gen =
2021-03-11 11:54:48 [77894:718000][9420/14500] MASTER: var/db rep_send_message: msgv = 7 logv 19 gen =
2021-03-11 11:54:48 [77894:718000][9420/14500] MASTER: var/db rep_send_message: msgv = 7 logv 19 gen =
2021-03-11 11:54:48 [77894:734000][9420/14500] MASTER: var/db rep_send_message: msgv = 7 logv 19 gen =
2021-03-11 11:54:48 [77894:734000][9420/14500] MASTER: var/db rep_send_message: msgv = 7 logv 19 gen =
2021-03-11 11:54:48 [77894:734000][9420/14500] MASTER: var/db rep_send_message: msgv = 7 logv 19 gen =
2021-03-11 11:54:48 [77894:734000][9420/14500] MASTER: var/db rep_send_message: msgv = 7 logv 19 gen =
2021-03-11 11:54:48 [77894:734000][9420/14500] MASTER: var/db rep_send_message: msgv = 7 logv 19 gen =
2021-03-11 11:54:48 [77894:734000][9420/14500] MASTER: var/db rep_send_message: msgv = 7 logv 19 gen =
2021-03-11 11:54:48 [77894:734000][9420/14500] MASTER: var/db rep_send_message: msgv = 7 logv 19 gen =
2021-03-11 11:54:48 [77894:734000][9420/14500] MASTER: var/db rep_send_message: msgv = 7 logv 19 gen =
2021-03-11 11:54:48 [77894:734000][9420/14500] MASTER: var/db rep_send_message: msgv = 7 logv 19 gen =
2021 03 11 11 54 48 [77894 734000][9420/14500] MASTER  / b                          7 1      10
                                               Ln 1, Col 1        100%   Windows (CRLF)   UTF-8
```

Replicant $DB_Msg.txt file showing connection between master and replicant, validation of connection and receiving database information.

Another way of testing the replication is correct and functioning is to create a connection to the replicant database through Tapemaster using the replicants IP address. Remember to use the replicants connection port (usually 5000) and not the replication data port (5010).

As this database is a replication of the master server, all user-ID's from the master are functional in the replicant server for login purposes.

When you connect to the replicant database you will receive a popup reminding you the server is Read Only. While you can view Customer, Media and Volume information, any attempted updates will be blocked by security protocols.
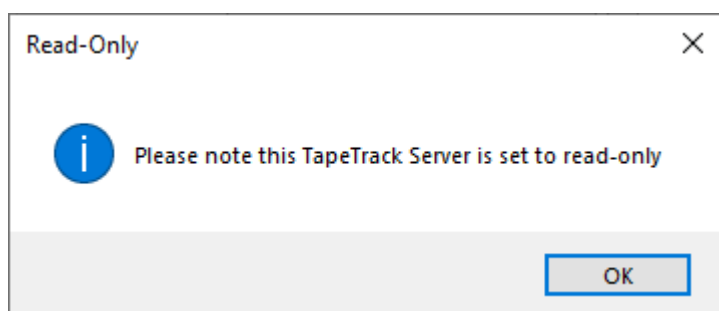
The replication communications are not encrypted so if replication is enabled you should ensure that all machines that are replicated are in a trusted network or connected via a secure VPN connection.

[Server replication troubleshooting](#)

See Also

[Restoring replicant server to master server status](#)

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Last update: **2025/01/21 22:07**