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.

S	TapeTrack Server He	lper					
1.1							
	Service						
	Name		TMSS10SVC				
	Status		Running				
	Process ID	15	20584				
	Binary		C:\Program Files\TapeTi	ack\TapeTrack	Framework Serve	er\TMSS10Server.exe	
	Options						
	Home Directory						
	Port		5000				
	Syslogd Server						
	Enable Replication		True				
	Log File Name Type		0				
k	<u>Save Se</u>	ervice Setting	js				
Control Service				Update Softw	are		Edit/View Files
	Stop		Start	*	Download an	d Update	DB_CONFIG

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).

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File Home Share	View			~ ?
← → · ↑ 📙 « Ta	peTrack > TapeTrack Framework Server > var >	db ~ Ō	, Search db	
V A Quick Sccess	Name	Date modified	Туре	Size ^
Desktop 🖈	SDB_Err.txt	3/11/2021 9:37 AM	Text Document	
	SDB_Msg.txt	3/11/2021 9:37 AM	Text Document	
	DB_CONFIG	3/10/2021 12:38 PM	File	
🖆 Documents 🖈	TMSS10.attribute-history	3/8/2021 3:11 PM	ATTRIBUTE-HISTO	
📰 Pictures 🛛 🖈	TMSS10.attribute-history.dump	3/8/2021 3:11 PM	DUMP File	
📑 TapeTrack 🛛 🖈	TMSS10.attribute-history.save	3/8/2021 2:31 PM	SAVE File	
> 🦱 OneDrive	TMSS10.attributes	3/8/2021 3:10 PM	ATTRIBUTES File	
> oneDrive	TMSS10.attributes.dump	3/8/2021 3:10 PM	DUMP File	
🗸 💻 This PC	TMSS10.attributes.save	3/8/2021 2:31 PM	SAVE File	
> 🧊 3D Objects	TMSS10.attributetype	3/8/2021 3:10 PM	ATTRIBUTETYPE File	
> Desktop	TMSS10.attributetype.dump	3/8/2021 3:10 PM	DUMP File	
> 🛱 Documents	TMSS10.attributetype.save	3/8/2021 2:31 PM	SAVE File	
	TMSS10.barcode	3/8/2021 3:03 PM	BARCODE File	
> 🕂 Downloads	TMSS10.barcode.dump	3/8/2021 3:02 PM	DUMP File	
> 🎝 Music	TMSS10.barcode.save	3/8/2021 2:31 PM	SAVE File	
> 📰 Pictures	TMSS10.catalog	3/8/2021 3:15 PM	CATALOG File	
> 🚪 Videos	TMSS10.catalog.dump	3/8/2021 3:14 PM	DUMP File	
> 🚔 Local Disk (C:)	TMSS10.catalog.save	3/8/2021 2:31 PM	SAVE File	
	TMSS10.catalog-extent	3/8/2021 3:16 PM	CATALOG-EXTENT	
> 💣 Network	TMSS10.catalog-extent.dump	3/8/2021 3:16 PM	DUMP File	
	TMSS10.catalog-extent.save	3/8/2021 2:31 PM	SAVE File	
	TMSS10.catalog-extent-time	3/11/2021 9:37 AM	CATALOG-EXTENT	
	TMSS10.catalog-extent-time.dump	3/8/2021 3:16 PM	DUMP File	
	TMSS10.catalog-extent-time.save	3/8/2021 2:36 PM	SAVE File	
	TMSS10.catalog-file	3/8/2021 3:17 PM	CATALOG-FILE File	
	TMSS10.catalog-file.dump	3/8/2021 3:17 PM	DUMP File	¥
	<			>
218 items 1 item selecter	d 81 bytes			:== E

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

```
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               1
```

```
File Edit Format View Help
set flags DB LOG AUTOREMOVE
#
# Set the log directory to an alternate directory
#
set lg dir ..\dblogs
#
    Ι
#
# 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
<
                                                   100%
                                                                     UTF-8
                                    Ln 1, Col 1
                                                        Windows (CRLF)
```

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
#
    Τ
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
<
                                                        Windows (CRLF)
                                    Ln 45, Col 2
                                                  100%
                                                                     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.

📕 🛃 🖓 🖛 db			_	\Box ×
File Home Share	View			~ ()
← → × ↑ 📙 « Ta	peTrack > TapeTrack Framework Server > var	v db ↔		
✓	Name	Date modified	Туре	Size ^
Desktop	SDB_Err.txt	3/11/2021 9:37 AM	Text Document	
	\$DB_Msg.txt	3/11/2021 9:37 AM	Text Document	
🕂 Downloads 🖈	🚽db.001	3/11/2021 9:37 AM	001 File	
🔮 Documents 🖈	db.002	3/11/2021 9:37 AM	002 File	
Note: Pictures 📌	db.003	3/11/2021 9:37 AM	003 File	
📙 TapeTrack 🛛 🖈	🚽 _db.004	3/11/2021 9:37 AM	004 File	
	db.rep.diag00	3/11/2021 9:37 AM	DIAG00 File	
> 🔷 OneDrive	ᡖdb.rep.diag01	3/11/2021 9:37 AM	DIAG01 File	
🗸 💻 This PC	db.rep.egen	3/11/2021 9:37 AM	EGEN File	
> 🧊 3D Objects	ᡖdb.rep.gen	3/11/2021 9:37 AM	GEN File	
> Desktop	DB_CONFIG	3/10/2021 12:38 PM	File	
> 🛱 Documents	TMSS10.attribute-history	3/8/2021 3:11 PM	ATTRIBUTE-HISTO	
_	TMSS10.attribute-history.dump	3/8/2021 3:11 PM	DUMP File	
> 🕂 Downloads	TMSS10.attribute-history.save	3/8/2021 2:31 PM	SAVE File	
> 🎝 Music	TMSS10.attributes	3/8/2021 3:10 PM	ATTRIBUTES File	
> 📰 Pictures	TMSS10.attributes.dump	3/8/2021 3:10 PM	DUMP File	
> 📑 Videos	TMSS10.attributes.save	3/8/2021 2:31 PM	SAVE File	
> 🚔 Local Disk (C:)	TMSS10.attributetype	3/8/2021 3:10 PM	ATTRIBUTETYPE File	
	TMSS10.attributetype.dump	3/8/2021 3:10 PM	DUMP File	
> 💣 Network	TMSS10.attributetype.save	3/8/2021 2:31 PM	SAVE File	
	TMSS10.barcode	3/8/2021 3:03 PM	BARCODE File	
	TMSS10.barcode.dump	3/8/2021 3:02 PM	DUMP File	
	TMSS10.barcode.save	3/8/2021 2:31 PM	SAVE File	
	TMSS10.catalog	3/8/2021 3:15 PM	CATALOG File	
	TMSS10.catalog.dump	3/8/2021 3:14 PM	DUMP File	
	TMSS10.catalog.save	3/8/2021 2:31 PM	SAVE File	~
	<			>
226 items				

Ensure that the replication TCP/IP ports are open for inbound/outbound connections.

Start The Servers

Start the master TapeTrack Server.

S	TapeTrack Server Helper	
	Service	
	Name	TMSS10SVC
		Stopped
	Binary	C:\Program Files\TapeTrack\TapeTrack Framework Server\TMSS10Server.exe
Ξ	Options	
	Home Directory	
1	Port	5000
	Syslogd Server	
	Enable Replication	True
	Log File Name Type	0
	Save Service Setting	s
Co	ontrol Service	Update Software
	Stop	Start Download and Update DB_CONFIG

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.

S	TapeTrack Server Helper	
Ξ	Service	
	Name	TMSS10SVC
	Status	Start Pending
	Process ID	4472
	Binary	C:\Program Files\TapeTrack\TapeTrack Framework Server\TMSS10Server.exe
Ξ	Options	
	Home Directory	
	Port	5000
	Syslogd Server	
	Enable Replication	True
	Log File Name Type	0
ŀ	Save Service Setting	S
C C	ontrol Service	Update Software Edit/View Files
	Stop	Start Download and Update DB_CONFIG

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.

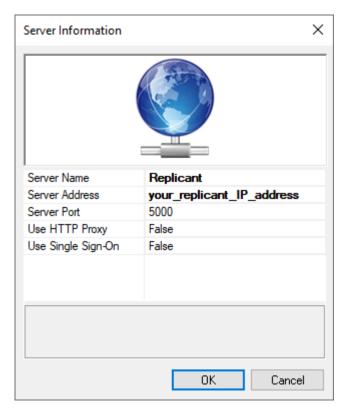
Master \$DB_Msg.txt file showing connection between master and replicant and the process of sending database information.

-				
SDB_Msg.txt - Notepad		_		×
File Edit Format View Help				
2021-03-11 11:52:55 BDB1519 Maximum transaction ID 0 recovery checkpoint [1][220				^
2021-03-11 11:52:55 [77781:703000][16880/18164] REP_UNDEF: set membership for 19				
2021-03-11 11:54:48 [77894:671000][9420/14500] REP_UNDEF: EID 0 is assigned for	site 192.	168.0.1	197:50	010
2021-03-11 11:54:48 [77894:671000][9420/14500] REP_UNDEF: EID 1 is assigned for	site 192.	168.0.9	96:501	10
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][22	32098]			
2021-03-11 11:54:48 [77894:703000][9420/14500] REP_UNDEF: set membership for 19	2.168.0.96	5:5010 4	4 (was	s Ø
2021-03-11 11:54:48 [77894:718000][9420/14500] REP_UNDEF: New master gen 1, ege	n 2			
2021-03-11 11:54:48 [77894:718000][9420/14500] MASTER: rep_start: Old log version	on was 19			
2021-03-11 11:54:48 [77894:718000][9420/14500] MASTER: var/db rep_send_message:	msgv = 7	logv 19	9 gen	= 1
2021-03-11 11:54:48 [77894:718000][9420/14500] MASTER: restore_prep: No prepare	s. Skip.	_		
2021-03-11 11:54:48 [77894:718000][9420/14500] MASTER: var/db rep_send_message:	msgv = 7	logv 19	9 gen	= 1
2021-03-11 11:54:48 [77894:718000][9420/14500] MASTER: var/db rep_send_message:	msgv = 7	logv 19	9 gen	= 1
2021-03-11 11:54:48 [77894:718000][9420/14500] MASTER: var/db rep_send_message:	msgv = 7	logv 19	9 gen	= 1
2021-03-11 11:54:48 [77894:718000][9420/14500] MASTER: var/db rep_send_message:	msgv = 7	logv 19	9 gen	= 1
2021-03-11 11:54:48 [77894:718000][9420/14500] MASTER: var/db rep_send_message:	msgv = 7	logv 19	9 gen	= 1
2021-03-11 11:54:48 [77894:734000][9420/14500] MASTER: var/db rep_send_message:	msgv = 7	logv 19	9 gen	= 1
2021-03-11 11:54:48 [77894:734000][9420/14500] MASTER: var/db rep_send_message:	msgv = 7	logv 19	9 gen	= 1
2021-03-11 11:54:48 [77894:734000][9420/14500] MASTER: var/db rep_send_message:	msgv = 7	logv 19	9 gen	= 1
2021-03-11 11:54:48 [77894:734000][9420/14500] MASTER: var/db rep_send_message:	msgv = 7	logv 19	9 gen	= 1
2021-03-11 11:54:48 [77894:734000][9420/14500] MASTER: var/db rep_send_message:	msgv = 7	logv 19	9 gen	= 1
2021-03-11 11:54:48 [77894:734000][9420/14500] MASTER: var/db rep_send_message:	msgv = 7	logv 19	9 gen	= 1
2021-03-11 11:54:48 [77894:734000][9420/14500] MASTER: var/db rep_send_message:	msgv = 7	logv 19	9 gen	= 1
2021-03-11 11:54:48 [77894:734000][9420/14500] MASTER: var/db rep_send_message:	msgv = 7	logv 19	9 gen	= 1
2021-03-11 11:54:48 [77894:734000][9420/14500] MASTER: var/db rep_send_message:	-	-		
2021-03-11 11:54:48 [77894:734000][9420/14500] MASTER: var/db rep_send_message:	msgv = 7	logv 19	9 gen	= 1
2021-03-11 11:54:48 [77894:734000][9420/14500] MASTER: var/db rep_send_message:				
		1 44	-	>
Ln 1, Col 1 1009	6 Windows (CF	RLF) UT	F-8	
				110

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

DB_Msg.txt - Notepad	-		×
File Edit Format View Help			
2021-03-11 11:56:54 [850:968000][636/12292] REP_UNDEF: Read in gen 0			^
2021-03-11 11:56:54 [850:968000][636/12292] REP_UNDEF: Read in egen 1			
2021-03-11 11:56:54 [850:968000][636/12292] REP_UNDEF: EID 0 is assigned for site 192.168.0.			
2021-03-11 11:56:54 [850:968000][636/12292] REP_UNDEF: EID 1 is assigned for site 192.168.0.	96:5	5010	
2021-03-11 11:56:54 BDB2525 No log files found			
2021-03-11 11:56:54 [850:984000][636/12292] REP_UNDEF: try join request to site site 192.168	.0.9	96:50	10
2021-03-11 11:56:54 [850:984000][636/12292] REP_UNDEF: connection established			
2021-03-11 11:56:54 [851:15000][636/12292] REP_UNDEF: set membership for 192.168.0.197:5010	4 (v	vas Ø)
2021-03-11 11:56:54 [851:15000][636/12292] REP_UNDEF: set membership for 192.168.0.96:5010 4	(Wa	as 0)	
2021-03-11 11:56:54 [851:15000][636/12292] REP_UNDEF: rep_start: Found old version log 19			
2021-03-11 11:56:54 [851:15000][636/12292] CLIENT: var/db rep_send_message: msgv = 7 logv 19	ger	n = 0	ei
2021-03-11 11:56:54 [851:15000][636/15880] CLIENT: starting election thread	-		
2021-03-11 11:56:54 [851:15000][636/12696] CLIENT: starting connector thread, eid 1			
2021-03-11 11:56:54 [851:15000][636/11468] CLIENT: accepted a new connection			
2021-03-11 11:56:54 [851:15000][636/12696] CLIENT: connecting to site 192.168.0.96:5010			
2021-03-11 11:56:54 [851:15000][636/15880] CLIENT: var/db rep_send_message: msgv = 7 logv 19	ger	1 = 0	ei
2021-03-11 11:56:54 [851:31000][636/12696] CLIENT: connection established			
2021-03-11 11:56:54 [851:31000][636/11468] CLIENT: handshake from connecting site 192.168.0.	96:5	5010	ID
2021-03-11 11:56:54 [851:31000][636/11468] CLIENT: handshake with no known master to wake el	ecti	ion tl	nre
2021-03-11 11:56:54 [851:31000][636/12696] CLIENT: connector thread is exiting			
2021-03-11 11:56:56 [853:15000][636/15880] CLIENT: var/db rep_send_message: msgv = 7 logv 19	ger	1 = 0	ei
2021-03-11 11:56:56 [853:15000][636/15896] CLIENT: var/db rep_process_message: msgv = 7 logv			
2021-03-11 11:56:56 [853:15000][636/15896] CLIENT: var/db rep_send_message: msgv = 7 logv 19		-	
2021-03-11 11:56:56 [853:15000][636/16096] CLIENT: var/db rep_process_message: msgv = 7 logv			
2021-03-11 11:56:56 [853:31000][636/16096] CLIENT: Election done; egen 1		~	
2021-03-11 11:56:56 [853:31000][636/16096] CLIENT: Updating gen from 0 to 1 from master 1			
2021-03-11 11:56:57 [853:31000][636/16096] CLIENT: egen: 2. rep version 7			
2021-03-11 11:56:57 [853:31000][636/16096] CLIENT: No commit or ckp found. Truncate log.			
	10		· · ·
Ln 40, Col 1 100% Windows (CRLF)	UTF	F-8	

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

From: https://rtfm.tapetrack.com/ - **TapeTrack Documentation**

Permanent link: https://rtfm.tapetrack.com/server/replication?rev=1634684864

Last update: 2025/01/21 22:07



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