



M TM Master® software suite

TECHNICAL GUIDE



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CHAPTER 1: TM MASTER V2 – INSTALLATION GUIDE

This document will guide you through a complete installation of TM Master V2. First, you will need the installation files. The following files are required:

TM Master V2 Client

TMMasterInstaller_xxxxxxx.exe

→ Base TM Master V2 installation file

TM HotFix_xxxxxxx.exe

→ Latest upgrade to TM Master V2 client (not always required, depending on the base client setup file version)

TM Master V2 Service

TMMasterServerInstaller_xxxxxxx.exe

→ Base TM Master V2 Server Service installation file

TM HotFixS_xxxxxxx.exe

→ Latest upgrade to TM Master V2 Server Service (not always required, depending on the base Server setup file version)

Microsoft SQL Server

Microsoft SQL Server Management Studio

The following should be done on the computer which will function as server. This guide will assume that only one server is available, and all the software is to be installed on it. It is not a requirement that all software is installed on one computer. The SQL Server, TM Master V2 Client and TM Master V2 Server service can all be installed on separate computers. Also, for administrative purposes (upgrades etc.), we recommend installing the client on one of your servers.

All installations should be done with a Windows user with full administration user rights.

1. Install SQL Server and Management Studio

1. Install SQL Server and choose *mixed mode authentication*. Install Management Studio.
2. Both can be downloaded from the Microsoft download site.
3. We recommend enabling the "Named Pipes" and "TCP/IP" protocols in SQL Server Configuration Manager, and opening ports 1433 TCP and 1434 TCP & UDP on the server to enable the TM Master v2 Clients to connect to the database over the local network.

2. Install TM Master V2 Server service


1. Double click the TMMasterServerInstaller_xxxxxxx.exe
2. Click [Next]
3. Click [Next] again confirming the installation path.
(services should be installed on the system drive and, to simplify updates later, keep the original installation path. If you choose to alter the installation path, you must make sure future updates are also directed to the correct folder)
4. Click [Next] yet again.
5. When installation is completed click [Finish].
6. If you have a "TM HotFixS" file you should also run this before restarting the server.(The installation procedure for this file is identical to the TMMasterServerInstaller_xxxxxxx.exe)

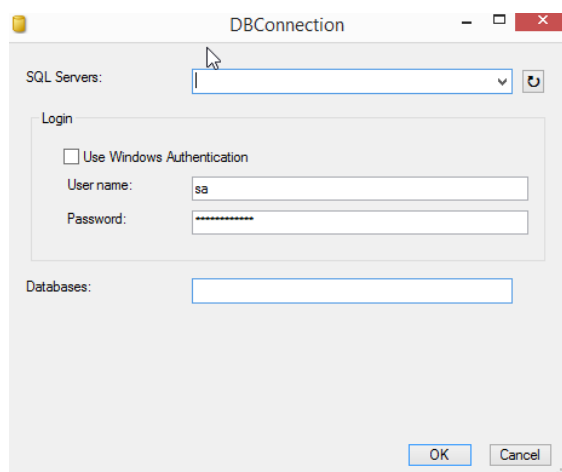
3. Install the TM Master V2 client


1. Double-click “TMMasterInstaller_xxxxxxx.exe”
2. Click [Next]
3. Click [Next] again confirming the installation path.
(To simplify updates later, keep the original installation path)
4. Click [Next] yet again.
5. When installation is completed click [Finish].

The client software has now been installed. If this is the first client installed, you will need to create a database. This is described in step 4. If you already have created the database and this is an additional client install, you will need to connect the client to the existing database. This is described in step 5.

4. Create the TM Master V2 database (done only once for each system)

1. Open the TM Master V2 program file folder in Windows explorer. Default: C:\Program Files\TM Software\TM Master v2\bin\
2. Double click the “Shortcut file “Create New DB”  Create New DB
3. The following dialog will appear (without values)



4. Click the [Browse]  button to search for available SQL servers. Choose the one you installed in step 1.
5. If you are using the predefined password provided by Tero Marine, you can leave the predefined user and password as it is.
(The predefined user and password are by default set to: sa/Astoria18591).
Otherwise enter the login info for the user you have created for this purpose (see “How to configure existing SQL server installation for TM Master V2” on page 13).
6. In the “Databases” field, type the desired name of your database, e.g. “TMMV2_BOUNTY” (try to avoid spaces in the database name)
7. Click [OK]

8. The table structure for the TM Master V2 database is created, once it is finished the TM Master V2 login form will appear. A predefined “Administrator” user is used for the first logon, the password for this user is set to: “a”. Press [Enter] to login.

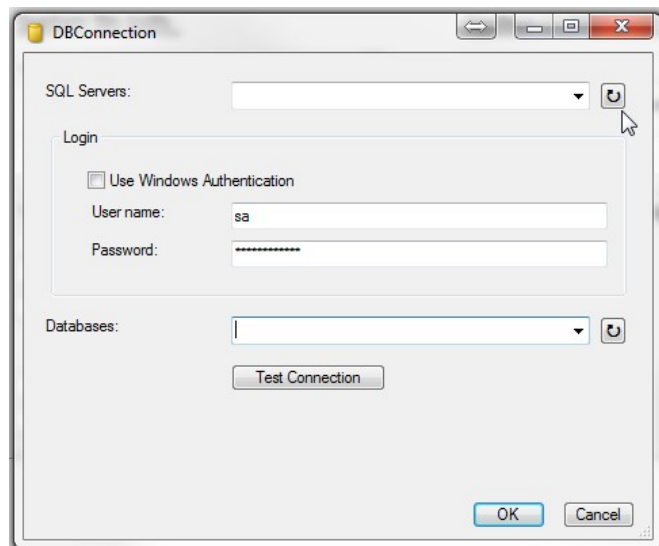


The connection information such as SQL server name, database name, username and password is stored (encrypted) in an XML file which is placed in the folder: C:\ProgramData\Tero Marine\TM Master v2\. The next time TM Master V2 is started it will load this information, so users do not need to specify where to connect, starting the application after this.

Note: ProgramData is a hidden folder. If you can't see it, type in %programdata% in the address bar.

5. Connect the TM Master V2 client application to an existing server

1. Once you have installed the application, start it by double clicking the TM Master v2 icon on the desktop or in the [Start] menu.
2. The “Connection tool” dialog will appear.
3. Click the “Browse” button next to the “SQL Servers” field.
4. Select the correct “SQL Server”
5. If you are using the predefined password provided by Tero Marine, leave the user name and password as is.
6. If you are not using the predefined password provided by Tero Marine, enter the username and password for your SQL user (created in step 18).
7. Click the “Browse” button next to the “Databases” field. If an error occurs, type in the database name manually.
8. Select the correct database
9. Click [OK]



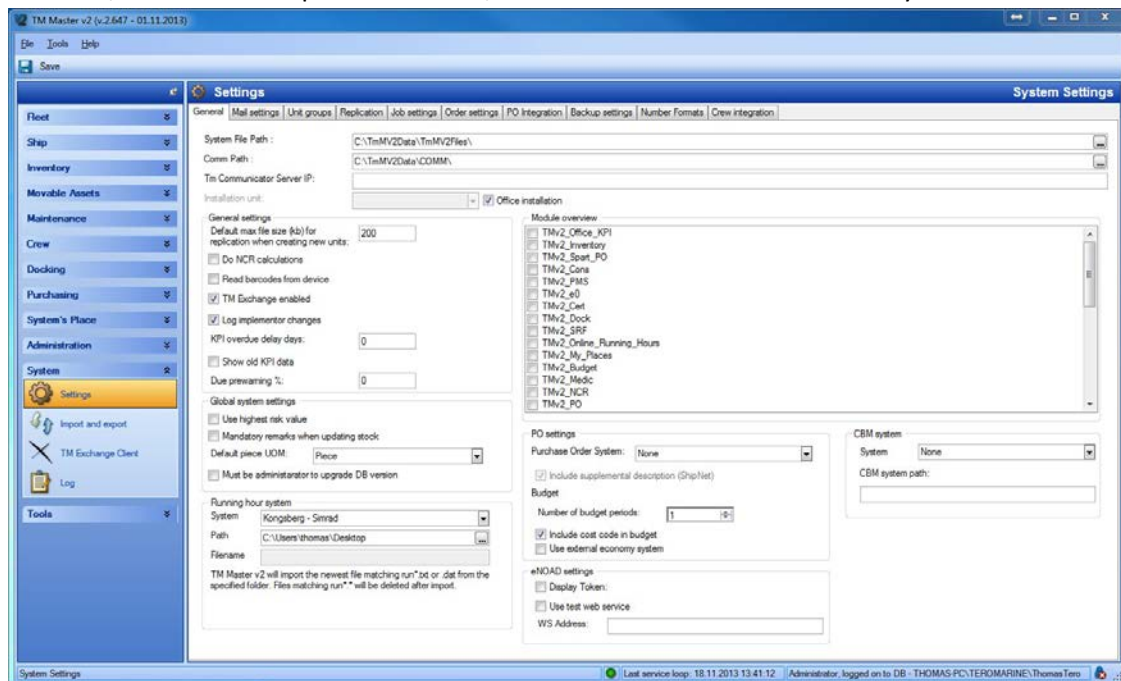
The connection information such as SQL server name, database name, username and password is stored (encrypted) in an XML file which is placed in the folder: Windows XP: C:\Documents and Settings\All Users\Application Data\Tero Marine\TM Master v2\ Windows 7: C:\ProgramData\Tero Marine\TM Master v2\. The next time TM Master V2 is started it will load this information, so users do not need to specify where to connect, starting the application after this.

6. Create “System file path” folder

1. TM Master V2 needs somewhere to store files attached to the system, such as images, documents and report templates. This area must be available to all users of TM Master V2 and should be put in a shared folder. You may use an existing shared folder. By default, this folder is set to **C:\Program Files\TM Software\TM Master v2\v2Data**. Using the absolute path C:\ will work on the server, but for other client computers connecting to the database the C: drive will be that computers C: drive.
2. Create a folder on your server hard drive, e.g. **E:\TMMV2Data**
3. Create two sub folders in this folder, e.g. **SysFiles** and **COMM**.
E:\TMMV2Data\SysFiles
E:\TMMV2Data\COMM
4. Share the folder E:\TMMV2Data\
5. Remember to give TM Master V2 users shared user rights as well as file access (users should at least be able to modify files in this folder).
6. You can now test your share by using the UNC path to it.
7. Click [Start] → [Run...]. Type: **\\[Server_name]\TMMV2Data** [Server name] should be replaced by your server’s name.
8. A Windows browser window should open containing the two subfolders you just created.

7. Configure TM Master V2 – System file and COMM path

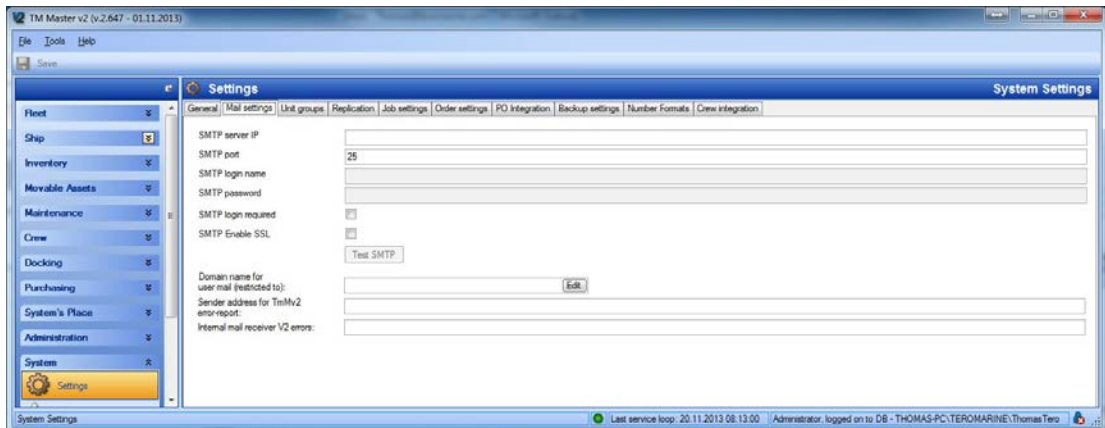
1. Log on TM Master V2 using the administrator account (administrator/a)
2. Click [System] → [Settings] → “General” tab. In the field labeled “System File Path” enter the UNC path to the “V2files” you created in step 5.3, e.g. \\[ServerName]\TMMV2Data\V2files. In the field labeled “COMM Path” enter the UNC path to the “COMM” folder you created in step 5.3, e.g. \\[ServerName]\TMMV2Data\COMM\
3. Click [Save] in the top left-hand corner. The program will now test that it is able to read/write the two specified folders, if it is not able to do this it will let you know.



8. Configure TM Master V2 – Mail configuration (not required)

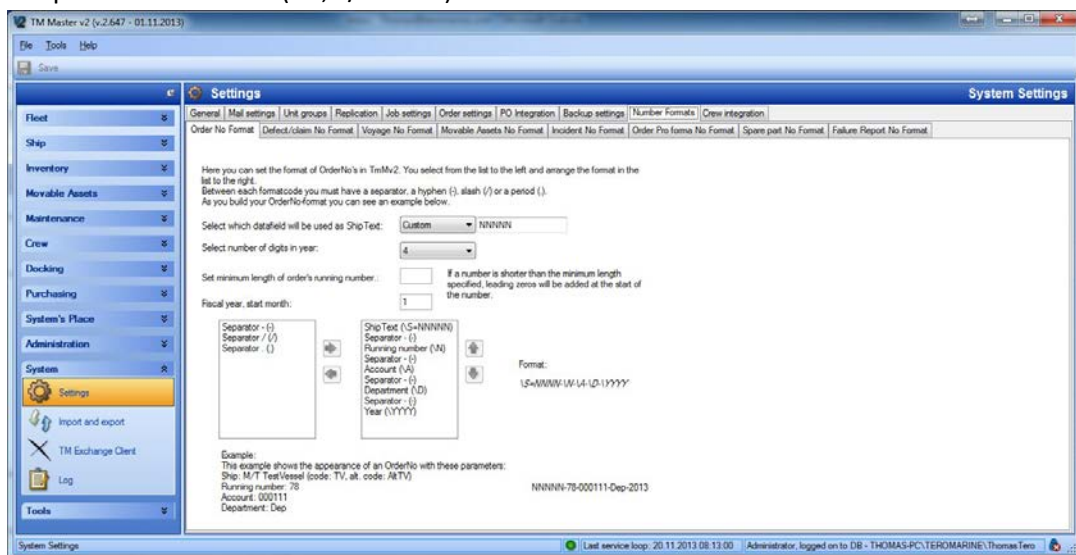
If you set up a connection to your SMTP mail server, users can send emails directly from TM Master V2, like sending reports or price inquires directly from the program.

1. Click [System] → [Settings] → “Mail Settings” tab.
2. Enter your SMTP server address and your SMTP port.
3. If your server requires SMTP authentication, tick the “SMTP login required” checkbox and add a username and password.
4. If your SMTP server supports or requires SSL, tick SMTP Enable SSL.
5. If you want to limit the allowed sender addresses to a specified mail domain, you can tick **edit** and enter the allowed sender mail domain. E.g. if you enter “teromarine.com” only sender addresses within this mail domain is allowed to send mail.



9. Configure TM Master V2 – Order No Format

1. If you are using the **TM Master V2 Procurement** module, you will need to configure the order number. This configuration must be set for each individual installation
2. Click [System] → [Settings] → “Number Formats” → “Order No Format” tab.
3. You can configure the Order number format as you prefer using the following information. Ship Text (Vessel name, or Vessel code), Year, Running number, Department and Account.
4. You can put them in any order you like but you must separate the attributes using a “separator” character (“.”, “/” or “-“)



10. Import TM Master V2 report template files

1. Click “File” → “Import” → “Import reports”
2. Select the file *Allreports.v2reports* located in the C:\Program Files (x86)\TM Software\TM Master v2\v2Data\Reports folder. This file contains all standard report templates.
3. Confirm the import when asked.

11. Import the initial office database

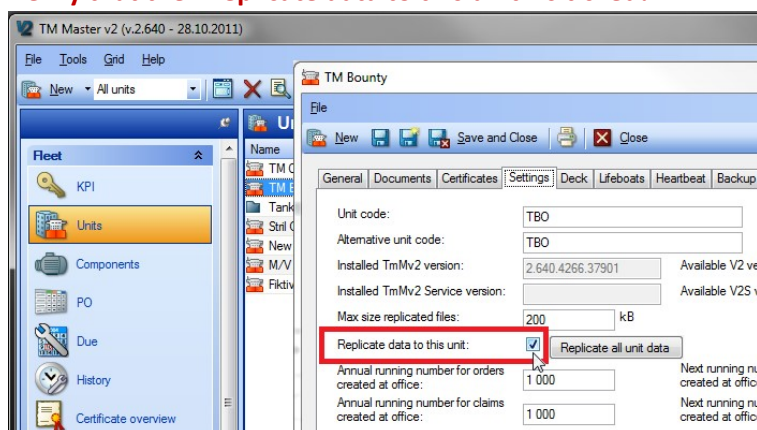
1. Click [System] → [Import & Export] → “Import Export” tab.
2. Click [Import New database]. Password: SLB
3. Select the TM Master V2 Office Database file (.v2z)
4. Confirm the import
5. Once the import has completed restart TM Master V2.
6. Log in using an admin user
7. Click [System] → [Settings] → “General tab”
8. Tick the “Office installation” check box (if not already ticked)

12. Import a vessel database into the office database

1. Click [System] → [Import & Export] → “Import_Export” tab.
2. Click [Import Single unit]
3. Select the TM Master V2 Vessel Database file (.v2z)
4. Confirm the import.
5. Restart TM Master V2.

13. Export a vessel database from the office database for import on board

1. Log on TM Master V2 using an admin enabled account.
2. Click [Fleet] → [Units] → Double click the unit you wish to export → “Settings” tab.
3. **Verify that the “Replicate data to this unit” is ticked!**




4. Click [System] → [Import & Export] → “Import Export” tab.
5. Click the [Export a Unit] button.
6. Select the Unit you wish to export.
7. Assign a name to the vessel database file.

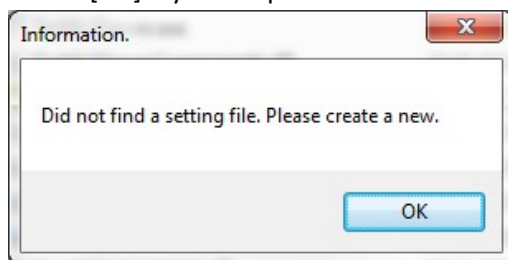
14. Import a vessel database to a vessel installation

1. Click [System] → [Import & Export] → “Import_Export” tab.
2. Click [Import New database]. Password: SLB 3. Select the TM Master V2 vessel database file (.v2z)
4. Confirm the import.
5. Once the import has completed restart TM Master V2.
6. Log in using a admin user
7. Click [System] → [Settings] → “General tab”
8. Select the vessel in the “Installation Unit” selector.
9. Save the settings using the [Save] button in the top menu.

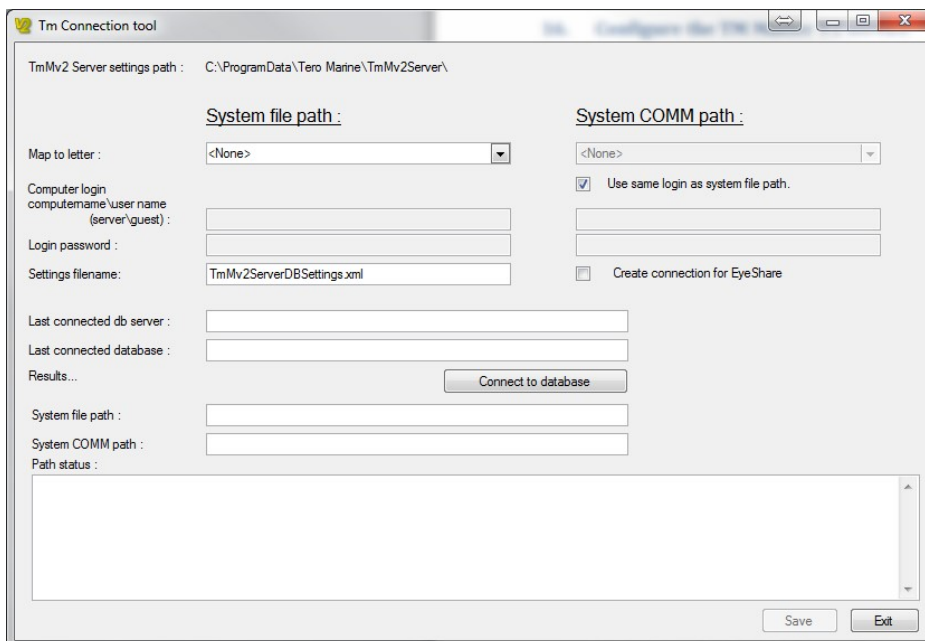
Restart TM Master V2 and verify that your vessel data is available.

15. Configure the TM Master V2 service

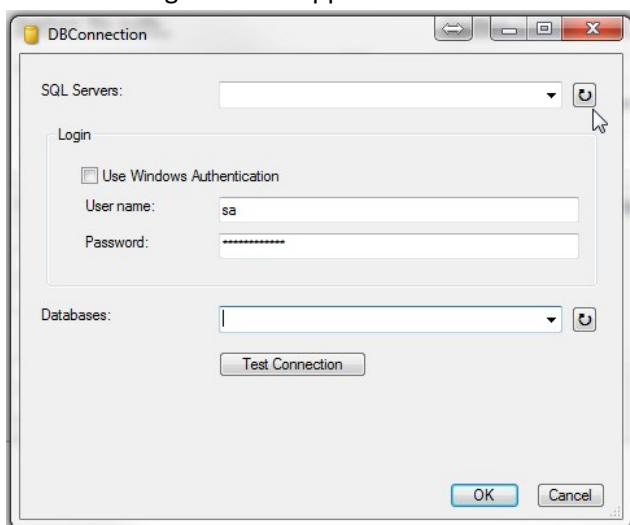
1. Start the program “TmMv2ServerConnectionTool.exe” 
Found in the folder **C:\Program Files\TM Software\TM Master v2 Server\bin**
2. Click [OK] if you are presented with the following message box.





3. You will then be presented with the following form:



4. Click [Connect to database].
5. The following form will appear:



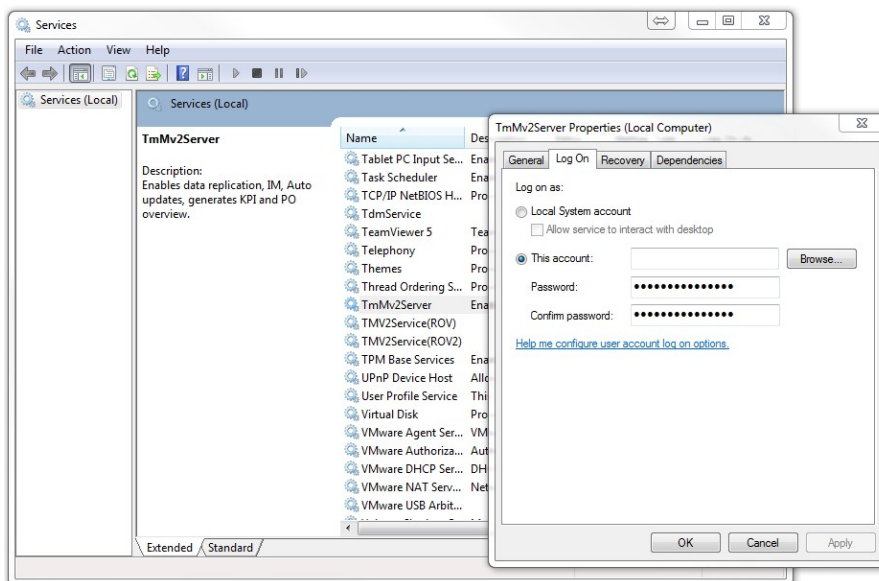
6. Click the  next to the field "SQL Servers" and select the server name, where the TM Master V2 database is created (Step 4).
7. Enter the user name and password for the database server (default: sa/Astoria18591).
8. Then click the  next to the "Database" field, and then select the TM Master V2 database. If an error occurs, type in the database name manually.
9. You can click [Test Connection] to make sure the connection is ok, then click [OK].
10. When the connection details have been saved, the connection tool retrieves the system's "System file path" and "COMM path".

11. The connection tool also checks that it has enough user rights to the shares/folders. It will tell you the result in the “Path status” field.
12. If everything is OK, click [Save] and [Exit].
13. Start the “TMMV2server” service.
 - In Windows : [Start] → [Control panel] → [Administrative tools] → [Services] - Locate the service named “TmMV2Server”, right click and select “Start”.

If the service does not start or it stops just after you have started it, this may be caused by the user running the service (by default “system”) does not have user rights to the COMM and/or the system file path. To solve this run the service with a user with correct user rights.

To change the user credentials for the service, do the following:

1. Start the “Administrative tools found on the computers control panel
2. Double click “Services”
3. Locate the service called “TmMv2Server” 4. Right click the service and select “Properties”
5. Click the “Log on” tab.
6. Tick “This account”, select the account and enter password.



16. Prepare for easier future client updates

We regularly release updates to the program. To make the process of updating all your client applications onboard a vessel or in the office easier, please do the following:

1. Create a folder in the “system file path” called “Setup”.
This is the system file path you configured in step 7.
2. Copy the “SetupUpgradeTMMv2S_XXXXXXXXXX.exe” files to this folder.
3. Start TM Master v2 on a client computer.
4. When the client application starts it checks the [system file folder] / setup folder for new updates. If it locates an update, the user must confirm that the update should be run.
5. Once confirmed the application is updated.

Contact support@teromarine.com for access to installation/upgrade files

CHAPTER 2: UPGRADE PROCEDURE

1. Upgrading within the same database version

See "[How to identify the database version](#)" (p.16) if uncertain which version you have.

PRELIMINARIES:

1. Launch the TM Master V2 client.
2. Backup the database ([Fleet -> Database backup] for the office and [Ship -> Database backup] for the ship). Alternatively - use SQL Management Studio to perform a database backup.

UPGRADE INSTRUCTIONS:

1. Stop the V2 service manually¹ and close the V2 client if it is running. Wait around 1 minute after stopping the service until you run the upgrade file.
2. Upgrade the V2 service on the server by running the SetupUpgradeTMMv2_*****.exe (only on the server).
3. Place the client upgrade file (SetupUpgradeTMMv2_*****.exe) in the System File Path² Setup folder: "[System File Path]\Setup"³.
4. Start the V2 client in order for it to upgrade.
5. Start the V2 service manually

2. Upgrading to a new database version

See "[How to identify the database version](#)" (p.16) if uncertain which version you have. **NB:** Upgrading the office database to a new version can take a lot of time, so we recommend starting these upgrade procedures after office hours to minimize downtime. The bigger your database and the slower your server, the more time the process will take. Vessel databases are typically smaller and take less time to upgrade.

PRELIMINARIES:

1. Distribute the setup files to all vessels before starting upgrade.
2. Back up the TM Master V2 database at office and vessels.
 - a. Launch the TM Master V2 client.
 - b. Backup the database ([Fleet -> Database backup] for the office and [Ship -> Database backup] for the ship). Alternatively - use SQL Management Studio to perform a database backup.

¹ See "[TM Service stop/start/restart guide](#)" (page 17).

² The System File Path is found here: [TMMV2 -> System -> Settings -> General -> System File Path].

³ All TMMV2 Clients will check the Setup folder upon startup to see if there are any upgrade files with a higher version number. The user will then be prompted to confirm the client upgrade and will be guided through the installation process - Tell the client users to just click Next -> Next -> Finish to upgrade their client.

UPGRADE INSTRUCTIONS:

Important: Make sure all users on the installation you are upgrading (either the office or the ship) have closed down their V2 clients.

1. Upgrade the office first

- a. Stop the V2 service manually³ and close the V2 client if it is running. Wait around 1 minute after stopping the service until you run the upgrade file.
- b. Upgrade the V2 service on the server by running the SetupUpgradeTMMv2S_*****.exe (only on the server).
- c. Upgrade the V2 client (run the upgrade file SetupUpgradeTMMv2_*****.exe).
- d. Place the client upgrade file (SetupUpgradeTMMv2_*****.exe) in the System File Path⁴ Setup folder: "[System File Path]\Setup"⁶.
- e. Start the V2 client and enter an administrator username and password to upgrade the database.
- f. Start the V2 Service manually

2. Once the office has been upgraded, upgrade the vessels

- a. Stop the V2 service manually¹ and close the V2 client if it is running. Wait around 1 minute after stopping the service until you run the upgrade file.
- b. Upgrade the V2 service on the server by running the SetupUpgradeTMMv2S_*****.exe (only on the server).
- c. Upgrade the V2 clients (run the upgrade file SetupUpgradeTMMv2_*****.exe).
- d. Place the client upgrade file (SetupUpgradeTMMv2_*****.exe) in the System File Path² Setup folder: "[System File Path]\Setup"³.
- e. Start the V2 client and enter an administrator username and password to upgrade the database.
- f. Start the vessel V2 service manually.

NB: It is very important that you start the TM Master V2 client and upgrade the database before you start the service again.

¹ See "[TM Service stop/start/restart guide](#)" (page 17).

² The System File Path is found here: [TMMV2 -> System -> Settings -> General -> System File Path].

³ All TMMV2 Clients will check the Setup folder upon startup to see if there are any upgrade files with a higher version number. The user will then be prompted to confirm the client upgrade and will be guided through the installation process - Tell the client users to just click Next -> Next -> Finish to upgrade their client.

3. How to identify the database version

A typical TM Master V2 version number looks like this:

2.647.5233.16428

If we break it down, the different number sequences have the following significance:

2.647.5233.16428:

This is the main version number (hence TM Master **V2**). If the main version of two installations differ, then their databases are not compatible. To upgrade requires a manual conversion of the database. Please contact us for more details if you are interested in having this done⁵.

2.647.5233.16428:

This is the database version number. To upgrade from one database version to another (for example from 647 to 652), an automated upgrade of the database is required⁶. Different database versions are not compatible for replication, so it is not possible to replicate data between an office and a vessel that have different database version numbers. This means that to perform a successful database upgrade, the entire fleet needs to be upgraded in one operation.

2.647.5233.16428:

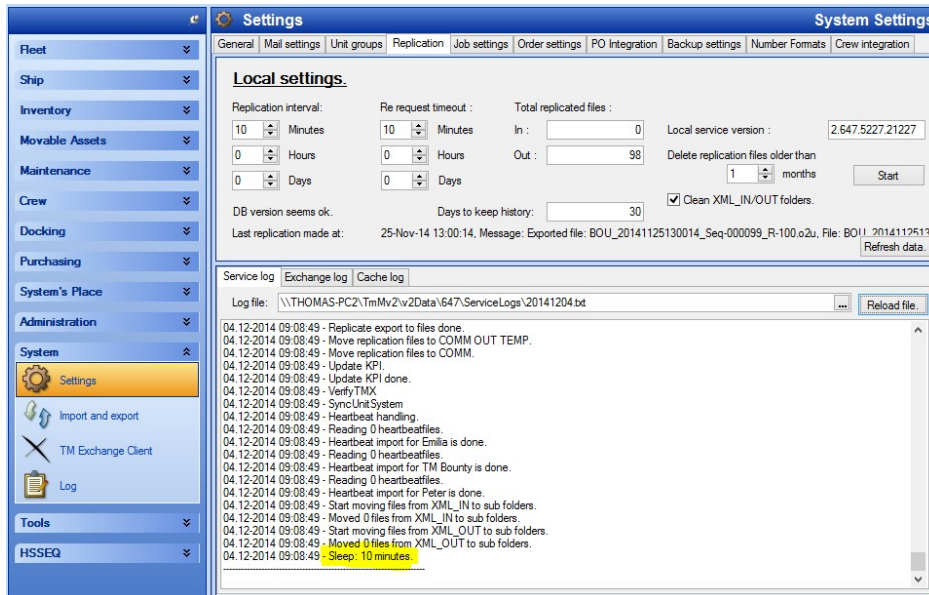
This is the internal TM Master version number which does not generally affect the structure of the database. To upgrade from one internal version to another does not require a database upgrade. Different internal versions are compatible for replication, so it is possible to replicate data between an office and a vessel that has different internal versions as long as the main and database version numbers are the same.

⁵ Contact information can be found at <http://teromarine.com/>

⁶ The database upgrade procedure can be found under the "[Upgrading to a new database version](#)" section.

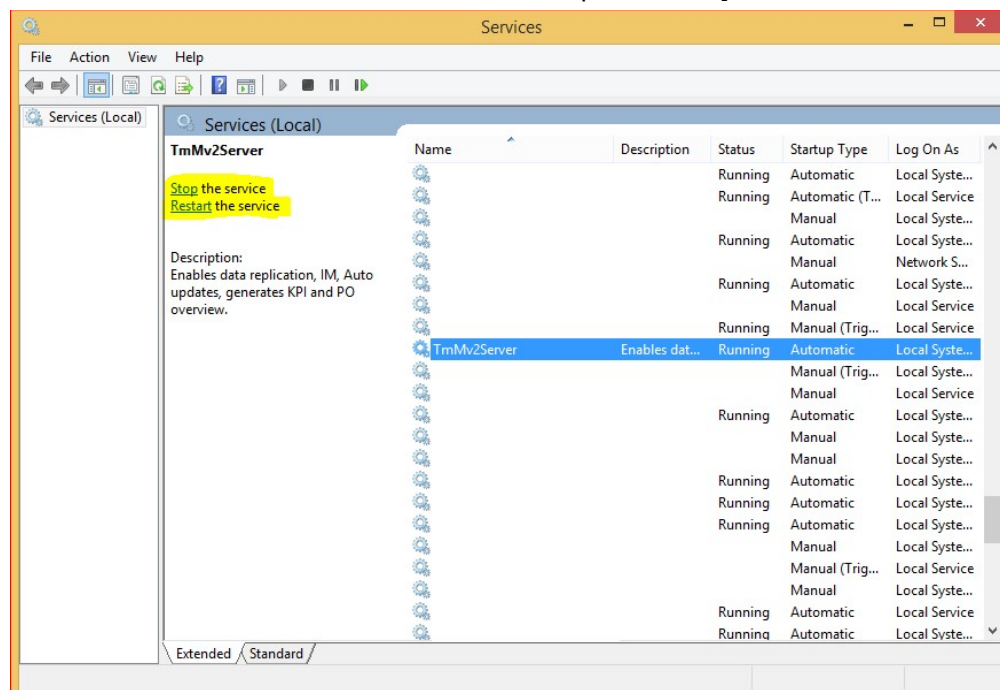
4. TM Service stop/start/restart guide

1. Check that the TMMV2 service is sleeping (via the TM Master V2 replication log under [TMMV2 -> System -> Settings -> Replication -> Service log]). Click **“Reload file”** to update the log. If the service is working or there is very little sleep time left, please wait until it has finished a work loop and goes back to sleep.

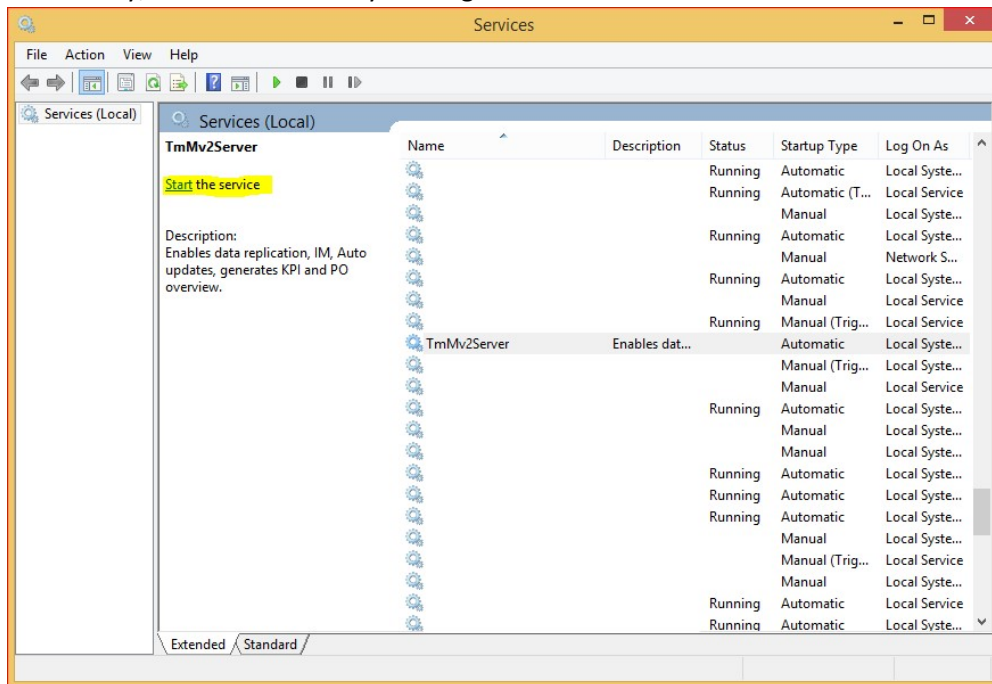


In this case, the service will sleep until 09:18:49, so it is safe to stop or restart it before that time.

2. If the service is sleeping, you can stop or restart it manually. [Start -> Administrative Tools -> Services -> select TmMv2Server -> click on Stop or Restart]



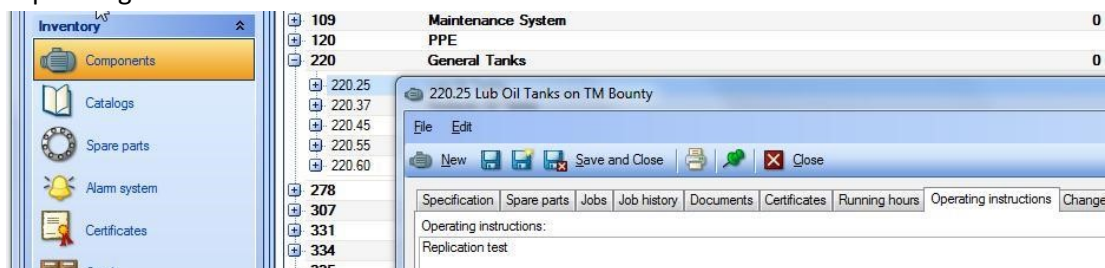
3. Once ready, start the service by clicking Start.



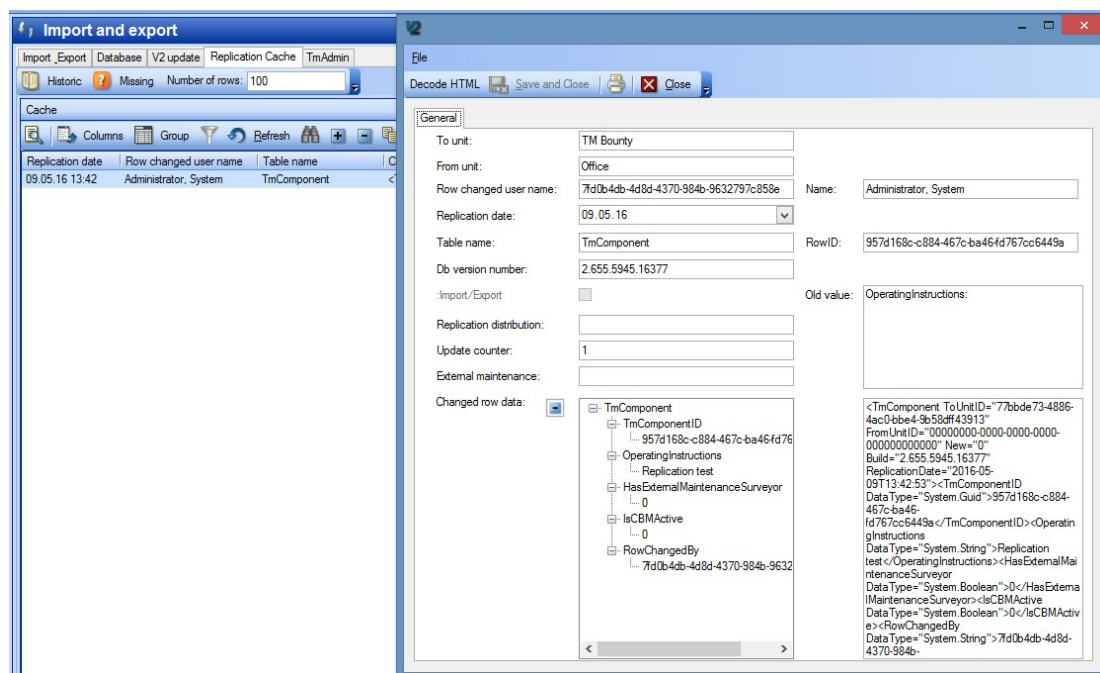
CHAPTER 3: TM MASTER V2 REPLICATION GUIDE

1. How replication files are created.

1. A change is done in TM Master V2. In this example, "Replication test" is entered into the "Operating instructions" text field.



2. The change will be added to the "Replication cache" and can be viewed in "System -> Import and export – Replication Cache (tab)". Next picture shows the changes made in TM Master V2 applied in the replication cache for the component (220.25).



3. The TM Master V2 service will run a loop on a given interval (for instance every 10 minutes); it will retrieve all changes found in the replication cache and write the changes to an xml file (next two pictures).




```

09/05-2016 13:58:56 - Replicate export to files started.
09/05-2016 13:58:56 - Exported files - summary
09/05-2016 13:58:56 - Files produced:
09/05-2016 13:58:56 - BOU_20160509135856_Seq-000912_R-913.o2u
09/05-2016 13:58:56 - Replicate export to files done.
    
```

```

BOU_20160509134235_Seq-000911_R-912.o2u - Notepad
File Edit Format View Help
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<Root>
  <TmUnit
    ToUnitID="00000000-0000-0000-0000-000000000000"
    FromUnitID="ac26b915-a0d5-494c-b512-7f423f777771"
    New="0"
    Build="2.655.5934.17781"
    ReplicationDate="2016-05-09T13:34:54">
    <TmUnitID
      DataType="System.Guid">ac26b915-a0d5-494c-b512-7f423f777771</TmUnitID>
    <UnitCode
      DataType="System.String">EML</UnitCode>
    <V2SVersion
      DataType="System.String">2.655.5934.17781</V2SVersion>
    <RowChangedBy
      DataType="System.String">sa</RowChangedBy>
  </TmUnit>
  <TmUnitReplication>
    <V2Version>20655</V2Version>
    <ReplicationFromUnit>239</ReplicationFromUnit>
    <ReplicationToUnit>912</ReplicationToUnit>
    <TmUnitID>00000000-0000-0000-0000-000000000000</TmUnitID>
  </TmUnitReplication>
</Root>
    
```

- The replication file will be put in the COMM folder for sending and in the XML_OUT folder for backup. The backup is used by the system in case of the file sent the first time becomes missing and needs to be re-sent.

 XML_IN	09.05.16 13:42	File folder	
 XML_OUT	09.05.16 13:58	File folder	
 BOU_20160509134235_Seq-000911_R-912.o2u	09.05.16 13:42	O2U File	1 KB

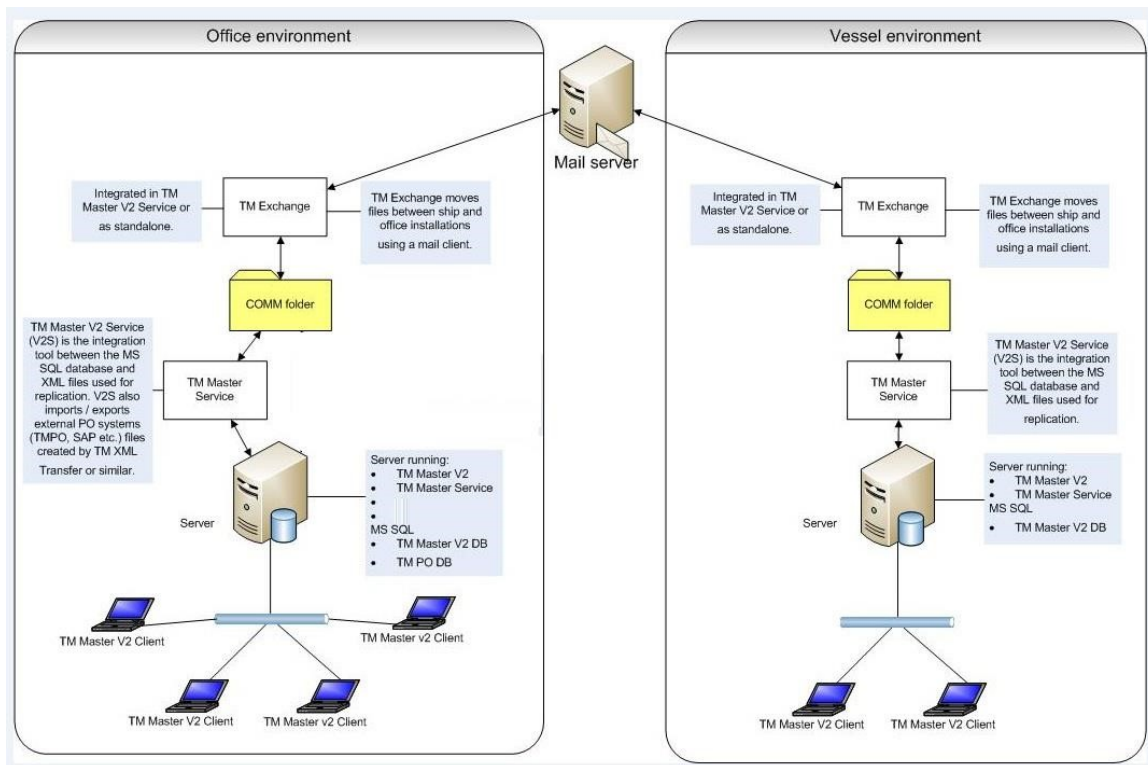
- The content of the replication cache will be moved to replication history and kept there for a given number of days (System -> Settings – Replication (tab) – “Days to keep history”). If a file goes missing and needs to be re-sent, the service will try to recreate the file from replication history. If the file cannot be recreated from history, the service will try to resend it from the XML_OUT folder.

Import and export

Import_Export Database V2 update Replication Cache TmAdmin

Historic Missing Number of rows: 100

Replication date	Row changed user name	Table name	Changed row data	Old row data	Is Export	From Unit	To Unit
09.05.16 13:42	Administrator, System	TmComponent	<TmComponent ...	OperatingInstruct...	<input checked="" type="checkbox"/>	Office	TM Bounty
09.05.16 13:42	sa	TmUnit	<TmUnit ToUnit...		<input type="checkbox"/>	Emil	All units
09.05.16 13:42	Administrator, System	TmFileReplication	<TmFileReplicati...		<input type="checkbox"/>	TM Bou...	TM Bounty



2. Troubleshooting the replication process

First, it is important to get the scope of the problem. Does it affect one ship or several/all ships in the fleet?

Problem exists on one ship:

Check service, logs and replication logs/files for that ship.

The problem exists on more than one ship in the fleet:

Check service, logs and replication logs/files in the office and the ships.

TM Master V2 contains functions that you can use to monitor the replication process.

V2 Status bar:

In the V2 status bar you will find an icon (circle). This will change color depending on the TM Master V2 service condition on the local TM Master V2 system (ex. TM Master V2 Office installation).

Green = ok

Yellow = running with error

Red = service has stopped

Heartbeat:

Every time a TM Master V2 installation on a ship is running a replication loop, it will send a heartbeat file to the office. This way the office will know if it receives replication files from that ship. You will see this under “Fleet” --> “Ships” in the office installation. The column “Last heartbeat” will show a different icon for different conditions:

A full red heart:	Office received a heartbeat before the ship’s replication loop x 2.
A broken heart:	Office received a heartbeat after the ship’s replication loop x 2.
A skull:	Office has not received a heartbeat for the last 3 replication loops on the ship.

3. Data replication from the office to the ship (step by step)

1. Changes are made in the office database.

2. The V2 Service is running a replication loop and the changes are put in an o2u file in the COMM Folder (Communication folder). A copy will be put in the XML_OUT folder.

Check if the replication files are copied to both the COMM folder and the XML_OUT folder. If not: Please check the log file under: System → Settings → Replication → Service log.

Please send a copy of the log text to support@teromarine.com.

3. TM Exchange is running on a defined interval and will send the replication file to the Ship mail account. If the file is sent successfully the file will be deleted from the COMM folder.

Check the TM Exchange log under: System → TM Exchange CLIENT → Log
You can also find this log file in a text format. The path for this log file can be found on the settings tab.

4. The mail account on the ship will receive the file. TM Exchange will log on to the mail account and retrieve the replication file and copy it to the COMM folder on the ship.

Check the COMM folder on the ship. If the replication file does not appear in the COMM folder on the ship, check the TM Exchange log or the mail account.

5. The service runs a replication loop on the ship and imports the data into the ship database.

If the import is successful there will be a copy of the replication file in the XML_IN folder and the replication file will be deleted from the COMM folder. If not, please check the log file under: System → Settings → Replication → Service log.

Please send a copy of the log text to support@teromarine.com.

4. Data replication from the ship to the office (step by step)

1. Changes are made in the ship database.

2. The V2 Service is running a replication loop and the changes are put in an u2o file in the COMM Folder (Communication folder). A copy will be put in the XML_OUT folder.

Check if the replication files are copied to both the COMM folder and the XML_OUT folder.

If not, please check the log file: System → Settings → Replication → Service log.

Please send a copy of the log text to support@teromarine.com.

3. TM Exchange is running at a defined interval and will send the replication file to the office mail account. If the file is sent successfully the file will be deleted from the COMM folder.

Check the TM Exchange log under: System → TM Exchange CLIENT → Log

You can also find this log file in a text format. The path for this log file can be found on the settings tab.

4. The mail account in the office will receive the file. TM Exchange will log on to the mail account and retrieve the replication file and copy it to the COMM folder in the office.

Check the COMM folder in the office. If the replication file does not appear in the COMM folder in the office, check the Tm Exchange log or the mail account.

5. The service runs a replication loop in the office and imports the data into the office database.

If the import is successful there will be a copy of the replication file in the XML_IN folder and the replication file will be deleted from the COMM folder. If not please check the log file under: System → Settings → Replication → Service log.

Please send a copy of the log text to support@teromarine.com.

5. Missing files in TM Exchange

The so called "missing" files are created by the TM Master V2 service when it discovers that the next file to be imported from the COMM folder has a higher replication sequence number than it expects. The missing file is replicated back to the unit, and when the unit receives the file it will resend the file requested.

Example:

Let's say that the service log in the office is informing that it has file no. 250, but that it wants 249 for a vessel with unit code BOU. The service in the office will then create a missing file called something like BOU_0Missing_249.o2u and put this in the COMM folder and XML_Out folder.

If you have a send rule for this file (BOU*.o2u), this file will be sent to the ship and put in the COMM folder. The service will recognize the missing file and its number and copy the file from the XML_Out folder to the COMM folder, and it will be resent to the office. A copy of the missing file will be put in the XML_IN folder when the service handles the missing file.

This explanation is both for *Office to Vessel (o2u)* and *Vessel to Office (u2o)*.

CHAPTER 4: SETTING UP TM EXCHANGE FOR REPLICATION

Replication is done using e-mail, so in order to set up replication between the office and a vessel, you will need two SMTP/POP3 email accounts, one for the vessel and one for the office. The accounts should be dedicated to replication only. Gmail is not supported.

TM Exchange sends files in rapid succession, which may be perceived as “spamming” by some email-servers and spam filters. Please make sure the addresses are “white listed”.

1. Setting up TM Exchange

- Start and log on TM Master V2 using an admin account.
- Click [System] → [TM Exchange Client] → “Settings” tab (in version 2.5xxx +)

TM Exchange Settings:

- **Default file path** should be set to the same as “COMM” folder.
(The COMM folder is found in [System] → [Settings] → “General” tab)
- **Working area** is where TM Exchange will temporary store files, while zipping and unzipping and sending. You are free to choose the location for this folder, should not be the same as COMM. And for the best performance it should not be on a network drive.
- The **Interval** setting sets how often TM Exchange should check for incoming emails and outgoing files
- The **Time** setting is used if you only want TM Exchange to send and receive on a particular time of day.
- **Automatically unpack received zip files**, may be used if you use TM Exchange to replicate files other than TM Master V2 files. If this setting is turned on any files with the .zip extension is unpacked when received.
- **Max file size** will make sure that no files sent exceed the set value, if a file is larger than the size specified, TM Exchange will split the files into “max file size” parts before sending them. TM Exchange on the receiving end will reassemble the file. If Set to “0” no file size limit is set.

SMTP settings:

- **Server:** Enter the SMTP server address.
- **Port:** Default on most mail server is 25, but you may change if needed.
- **Senders address:** Enter the email address used to send.
- **Senders name,** is used in the “from” field in the email.
- **Timeout:**
- **Login required:** If your SMTP server requires TM Exchange to log on before sending, tick it.
- **User name & Password:** enter SMTP user name and password (if required).
- **SSL:** If your SMTP requires TM Exchange to use the SSL protocol to send, tick it.

POP3 settings:

- **Server:** Enter the mail server's POP3 name/ address.
- **Port:** 110 is the POP3 standard port, if your POP3 server has another, enter correct port.
- **Max messages to download:** This sets how many messages the service should download, during each interval.
- **User name & Password:** Enter the POP3 username and password.

Network Files:

User Name & Password: If the "COMM" folder is located on a network drive (another server/PC then the one the service is installed on), you will have to enter a user name and password for a Windows user with access to that drive. The TM service is started when the server starts up.

The service will not be able to access the network drive, before a valid user with access rights to the "COMM" folder is logged on the server. This only applies if the COMM folder is located on a network drive.

System:

Admin email: If added TM Exchange will send error messages to this address. This is an optimal setting and not required.

Log cleaning limit: Enter the amount of TM Exchange logs you want to keep. One log for each day is created.

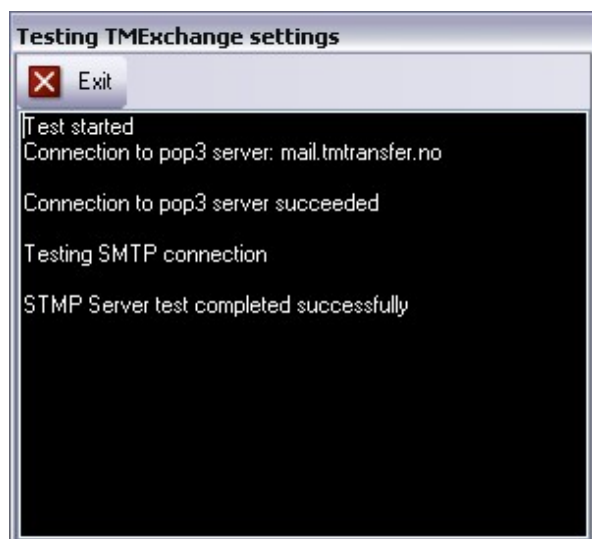
Enable detailed logging: For troubleshooting, if ticked all TM Exchange operations are logged. Can be useful while troubleshooting communication problems.

Log File path: Enter the location where you want TM Exchange to store its logs.

Test Settings:

In the top of the view, you will find a "**Test Settings**" button, this will trigger a logon-test, and a send-test using the current settings (click [Save] if changes are made).

To test the SMTP setting it will try to send a test email to a predefined email address (test@teromarine.no), and it will use *noreply@teromarine.com* as its send address. Not all mail servers allow the use of mail addresses not part of its domain, when sending so it might fail, saying "sending using *noreply@teromarine.com* is not allowed"



Testing TM Exchange settings:

All OK!

2. Send and Receive rules

The send and receive rules differ from onshore and vessels. When the TM Master V2 server service replicate it does this by scanning the database for any changes made since last replication cycle.

When it detects a change, it exports the change to a file and place the file in the COMM folder, for TM Exchange to send. To enable TM Exchange to send the replication files to the correct vessel, we can create send rules, specifying which file to send and where to send it.

Onshore:

The Onshore database may contain several vessels, and all replication files to all vessels are placed in the same COMM folder. To enable TM Exchange to know which file belong to which vessel, all replication files are names starting with the vessels "vessel code". (Found in [Fleet] → [Units] → Double-click a vessel → "Settings" tab). Replication files created by the Onshore Server service are given the file extension ".O2U" (Office to Unit). Files attached in TM Master V2 (images, word documents etc.) are given the file extension ".OFU". Using the Vessel code and the file extension TM Exchange will be able to send the replication to the correct vessel.

Creating Send Rules:

TM Exchange send/receive rules are created under the [System] → [TM Exchange Clients] → "Rules" tab. Click the "Create New Send" rule icon. You will then get a view similar to the one below (without the text).

Name: Give your rule a name, this name is shown in the TM Exchange log for all files this rule handles.

Description: Here you may add a description of the rule.

Path: Here the path to the folder where this rule should apply.

File mask: Here you add a definition of which file this rule should pick up and send.

This is an example of how a replication file is named: **ATL_20091109141407_Seq-000534_R535.o2u**

ATL	= Vessel code
20091109141407	= Date and time the file was created (YYYYMMDDHHNNSS)
Seq-000534	= This is a file counter number
R-535	= The Replication file number
.o2u	= Office to Unit extension

The time, counter and replication number all change, but the vessel code will always remain the same. We want the rule to pick up all files starting with the vessel code "ATL" for this rule, and we accomplish this by using a wildcard (*) .i.e. "ATL*"

The extension may vary between .O2U (db changes) and .OFU (file attachments).

Instead of creating one send rule for each file type using the following file masks: ATL*.O2U and ATL*.OFU we use another wildcard or in this case a question mark like this: .O?U.

The complete file mask ends up like this: **ATL*.O?U** . Using this file mask will pick up all files starting with ATL and has a three-letter extension starting with O and ending with a U. When using numbers as the unit code? We recommend you to also include the underscore separating the vessel code from the date stamp. .i.e." **123_*.O?U.**" (Keep in mind that the files created by the "office" service are named ".O?U" onboard the files are named ".U?O", when creating rules onboard).

Subject: You may enter any subject for the email you wish, but keep in mind that the receive rule on the receiving end also include the subject as one of the parameters, so my advice is to keep it simple, .i.e. "TMX".

Check your rules file masks, avoid creating 2 rules with overlapping file masks. .i.e. A*.O?U and ATL*.O?U. both may apply to the same file, but the file will be handled by only one of them. When a rule is applied to a file the file is removed from the COMM folder.

Backup path: If you want to keep a copy of the file handled by this rule you may add a path for the backup folder here. For TM Master V2 files this is not necessary, since all files received are stored in a subfolder of the COMM folder (...COMM\TMX_IN for incoming and "...COMM\TMX_OUT" for outgoing files.) TM Exchange can be used to also send files not related to TM Master v2, and this setting is meant for those files. Leave blank if you do not want any backups.

Active: You may activate/deactivate the rule by ticking this check box. Deactivated rules are shown in Italic in the rule list.

Send to: TM Exchange supports two methods of moving files, either by email or by moving the files to a designated folder. To send the file by email, enter the email address you want it to be sent to. To move files, enter the path where you want the file moved to.

Do not zip when sending: When using TM Exchange to move/send files not related to TM Master V2 you might end up in a situation where you do not want TM Exchange to zip the files, tick this if you do not want TM Exchange to zip files when sending. TM Exchange compresses or zips the files it sends to reduce the amount of data being sent back and forth. These compressed files have the extension “.tmx” and is automatically uncompressed when received by TM Exchange.

Time based : If this rule should only apply at a certain time, enter the time for when this rule should apply.

File counter: This is a counter of how many files this rule has been applied to.

Creating receive rules:

TM Exchange logs on its assigned POP3 account, and downloads all emails found there, when all email is downloaded, it scans all attachments and applies the receive rules to them.

To create a receive rule, click the “Create new receive rule” icon.

Name: Add a name to your receive rule (i.e. Files from the office)

Description: Here you may enter a description of your rule (Optional)

Path: Enter the path to the folder where you want TM Exchange to save the file. For TM Master V2 files (.O2U, .OFU, U2O and .UFO) this should always be the “COMM” folder.

File mask: See “file mask” under “Creating send rules”

You may assume that any .U2O, .UFO files sent to the office mail account and that any .O2U and .OFU files , should be stored in the “COMM” folder so for the receive rule you can enter the

following File mask : *.O?U for the vessels and *.U?O for the office. You can however create a receive rule for each vessel , including the vessel code, and name each rule with the Vessel name, this may make the Send/receive log easier to read. But you will then have to remember to add a new receive rule for each new vessel added to the system.

Subject: Enter the subject the send rule , on the other end, has given the emails it sends.

Backup path: See Backup path under “Creating send rules”. The same applies to receive rules.

Active: To make this rule active/inactive tick this check box.

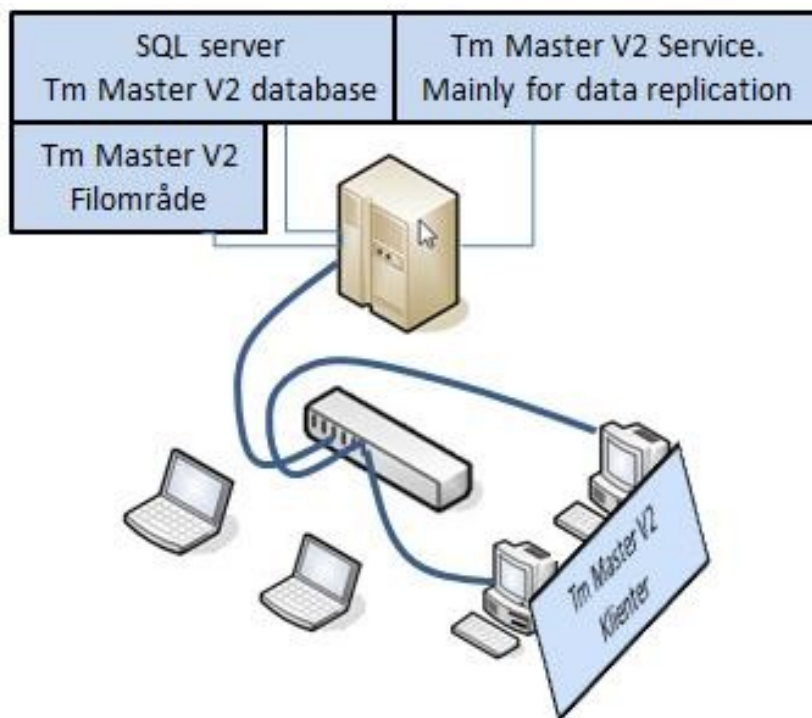
CHAPTER 5: SERVER MIGRATION

A TM Master V2 installation mainly consists of:

TM Master V2 Database → Located on a server or a «main computer». The server/main computer must be started in order for the TM Master V2 clients to be able to log on and use TM Master V2.

File area → Often located on the same server/main computer as the TM Master V2 database. All files connected to items in TM Master V2 will be copied to this file area. Replication files will also be located here.

TM Master V2 service → This is a service that is running in the background. The TM Master V2 service's main task/purpose is to manage the data replication between the office and the ships (both ways). On a given interval, the service will check the database for changes, and export these changes to replication files. The service will also import replication files retrieved from the respective source.



When a server is replaced, the following will be affected:

1. The Database: (Must be moved and connected to the new SQL instance)
2. File area: (If moved – Tm Master V2 settings must be updated)
3. TM Master V2 Service (Must be reinstalled on the new server and reconnected to the database (new SQL instance).

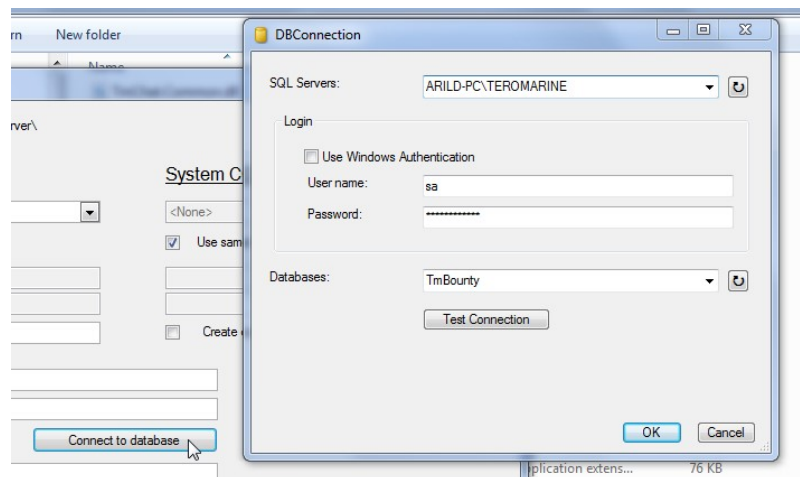
In connection with the transfer, we recommend the following procedure:

Before transfer:

1. Make sure that Microsoft SQL server with management studio is installed on the new server. If this is at the office, we recommend the SQL Server full version (not express which has a size limit). The office database contains data for all the ships and will in time be considerably larger than a ship database. This is, of course, depending on the size of the fleet.
2. Install the TM Master V2 client and V2 service on the new server.
3. Create the system file area. Name the main TM Master V2 folder the same as the old server, and make sure it is shared. All TM Master V2 clients need read/write access for this folder.
4. Backup the database.

During transfer:

1. Agree on a time when the use of TM Master V2 stops.
2. Stop the TM Master V2 service (Make sure that the TM Master V2 service is in sleep mode before it is stopped)
3. Start SQL Server Management Studio and detach (Right click on database -> Tasks -> Detach) the database on the old server.
4. Move the mdf file from the old SQL database folder to the new SQL instance database folder. (By default: C:\Program Files\Microsoft SQL Server\....)
5. «Attach» the mdf file to the new database instance.
6. Install the TM Master V2 client and the TM Master V2 service on the new server/main computer.
7. Start the Tm Master V2 on the new server/main computer. You will see a connection window. Select the server instance and database and enter the correct username and password. You will get an error message regarding the wrong system path. This will be changed later in this procedure.
8. Copy all system path sub folders from the old to the new system file area.
9. Change the system file path «System -> Settings -> General (System file path and COMM path) so that it is correct according the new system file folder. Save and restart TM Master V2 when asked.
10. Connect the TM Master V2 service to the new database. Start the «TmMv2ServerConnectionTool.exe» located in the TM Master V2 service bin folder. Click on the “Connect to database” button. Use the same connection method as in point 7. Click «Save» and «Exit»



After transfer

1. Connect all the clients to the new database. You can do this by starting the Tm Master V2 client. The client will not be able to connect to the old database and the connection window will appear. Select server, database, and enter the correct username and password. Tm Master V2 will now connect to the new database.

NB. When you connect a client as described above, a connection file will be created and stored at the following location:

Windows 7: C:\ProgramData\Tero Marine\TM Master v2

Windows XP: C:\Documents and Settings\All Users\Application Data\Tero Marine\TM Master v2

2. You can copy this xml file to the other clients at the location specified in the previous point. This will save you from repeating point 1 on all clients.
3. If Tm Exchange is active, the COMM path under Tm Exchange settings and rules needs to be updated as well.

The following fields need to be updated:

- a. TM Exchange client -> Settings -> Default file path. (Enter the same as in «COMM path» under: System -> Settings -> General (COMM path)
- b. TM Exchange client -> Rules («Path» in all the rules needs to be changed so that it is identical to the COMM path under: System -> Settings -> General (COMM path)

Any questions regarding this document? Please contact our Operations department:

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