

Rosemount™ TankMaster™

Software installation



TankMaster Software Installation

NOTICE

Read this manual before working with the product. For personal and system safety, and for optimum product performance, make sure you thoroughly understand the contents before installing, using, or maintaining this product.

For equipment service or support needs, contact your local Emerson representative.

Version

This manual is based on the functionality of TankMaster version 6.G1.

For older TankMaster versions all functionality described in this manual may not be available and the Graphical User Interface (GUI) may look different.

Safety messages

⚠ WARNING

Physical access

Unauthorized personnel may potentially cause significant damage to and/or misconfiguration of end users' equipment. This could be intentional or unintentional and needs to be protected against.

Physical security is an important part of any security program and fundamental in protecting your system. Restrict physical access by unauthorized personnel to protect end users' assets. This is true for all systems used within the facility.

Contents

Chapter 1	Introduction.....	5
	1.1 Manual overview.....	5
	1.2 Technical documentation.....	6
	1.3 Installation overview.....	9
Chapter 2	Requirements.....	11
	2.1 Important notes.....	11
	2.2 Hardware requirements.....	13
	2.3 Software requirements.....	15
Chapter 3	Install the Rosemount TankMaster Software.....	17
	3.1 TankMaster installation.....	18
Chapter 4	TankMaster in network environment.....	21
	4.1 Introduction.....	21
	4.2 Domains and workgroups.....	21
	4.3 Windows Firewall configuration.....	21
	4.4 DCOM Configuration.....	23
	4.5 Sharing the TankMaster folder.....	24
	4.6 Time synchronization.....	25
Appendix A	SaabReg.bat.....	27
Appendix B	Adding programs or ports to the TankMaster exception list.....	31
Appendix C	Firewall exception lists for programs and ports.....	33
	C.1 Exception list for server and client installation.....	34
	C.2 Exception list for client installation.....	35
	C.3 Exception list for ports.....	36
	C.4 SQL server related exceptions.....	37
Appendix D	ISO image integrity verification.....	39
Appendix E	Auto log on.....	41
	E.1 User accounts manager.....	41
	E.2 Update registry.....	42
Appendix F	Configuration of DCOM component service.....	43
	F.1 Computer default properties.....	44
	F.2 COM security configuration.....	45
	F.3 Set TankMaster permissions.....	46
Appendix G	Creating shared TankMaster folder.....	49
	G.1 Using NET SHARE to create a shared TankMaster folder.....	49
	G.2 Creating a shared TankMaster folder.....	49

1 Introduction

Rosemount TankMaster is an inventory management software package for tank monitoring and configuration of tank gauging equipment. It provides powerful and easy-to-use tools which allows you to configure protocols, devices, and tanks in real time.

The graphical interface gives you a clear overview of installed devices and tanks. For each tank you can see it's associated transmitters.

The Rosemount product portfolio includes a wide range of components for small and large customized tank gauging systems. The system includes various field devices, such as radar level gauges, temperature transmitters, and pressure transmitters for complete inventory control. The TankMaster software suite provides you with the tools that you need to configure and operate a Rosemount Tank Gauging system.

Related information

[Technical documentation](#)

1.1 Manual overview

The Rosemount TankMaster Software Installation Manual provides descriptions of how to install the Rosemount TankMaster software package. The manual includes the following sections:

Chapter [Introduction](#) provides a short introduction to Rosemount TankMaster.

Chapter [Requirements](#) provides to the basic software and hardware requirements for installing and operating the Rosemount TankMaster programs.

Chapter [Install the Rosemount TankMaster Software](#) provides a description of how to install the TankMaster software package and how to verify the integrity of the TankMaster ISO file image.

Chapter [TankMaster in network environment](#) describes how to configure the Windows firewall, DCOM configuration, server permissions, shared TankMaster folder, and time synchronization.

Appendix [SaabReg.bat](#) describes the main tasks performed by the SaabReg.bat script file.

Appendix [Adding programs or ports to the TankMaster exception list](#) describes how to add programs or ports to the TankMaster firewall exception list.

Appendix [Firewall exception lists for programs and ports](#) describes the TankMaster firewall exception lists for programs and ports configured by the TM_firewall_rules.cmd script.

Appendix [ISO image integrity verification](#) shows how to check the integrity of a TankMaster ISO image.

Appendix [Auto log on](#) describes how to configure servers and clients to auto log on to the Windows user account.

Appendix [Configuration of DCOM component service](#) describes how DCOM settings shall be configured for TankMaster to work in a distributed environment.

Appendix [Creating shared TankMaster folder](#) describes how to create a shared TankMaster folder.

1.2 Technical documentation

The Rosemount Tank Gauging System includes a wide portfolio of user documentation. For a complete list, see product pages on [Emerson.com/Rosemount](https://www.emerson.com/Rosemount).

Reference manuals

- Rosemount Tank Gauging System Configuration Manual (00809-0300-5100)
- Rosemount 2460 System Hub (00809-0100-2460)
- Rosemount 2410 Tank Hub (00809-0100-2410)
- Rosemount 5900S Radar Level Gauge (00809-0100-5900)
- Rosemount 5900C Radar Level Gauge (00809-0100-5901)
- Rosemount 2240S Multi-Input Temperature Transmitter (00809-0100-2240)
- Rosemount 2230 Graphical Field Display (00809-0100-2230)
- Rosemount 5300 Guided Wave Radar (00809-0100-4530)
- Rosemount 5408 Radar Level Transmitter (00809-0300-4408)
- Rosemount 3308 Series Wireless Guided Wave Radar (00809-0100-4308)
- Rosemount Tank Gauging Wireless System (00809-0100-5200)
- Rosemount TankMaster Software Installation Manual (00809-0400-5110)
- Rosemount TankMaster WinOpi (00809-0200-5110)
- Rosemount TankMaster WinSetup (00809-0100-5110)
- Rosemount TankMaster WinView (00809-0300-5110)
- Rosemount 5900 Proof Test with Reference Reflector (00809-0200-5900)
- Rosemount TankMaster Floating Roof Monitoring (00809-0500-5100)
- Rosemount TankMaster Full containment tanks (00809-0500-5110)
- Rosemount TankMaster Network Configuration (303042EN)
- Rosemount 5900 Radar Level Gauge and Rosemount 2410 Tank Hub Safety Manual Option S (00809-0400-5100)
- Rosemount 5900 Radar Level Gauge and Rosemount 2410 Tank Hub Safety Manual SIL3 (00809-0200-5100)
- Rosemount TankMaster Mobile User Guide (00809-0100-5120)
- Rosemount TankMaster Mobile Installation Manual (00809-0200-5120)

Product data sheets

- [Rosemount Tank Gauging System \(00813-0100-5100\)](#)
- [Rosemount TankMaster Inventory Management Software \(00813-0100-5110\)](#)
- [Rosemount TankMaster Mobile Inventory Management Software \(00813-0100-5120\)](#)
- [Rosemount 2460 System Hub \(00813-0100-2460\)](#)
- [Rosemount 2410 Tank Hub \(00813-0100-2410\)](#)
- [Rosemount 5900S Radar Level Gauge \(00813-0100-5900\)](#)
- [Rosemount 5900C Radar Level Gauge \(00813-0100-5901\)](#)
- [Rosemount 2240S Multi-input Temperature Transmitter \(00813-0100-2240\)](#)
- [Rosemount 565/566/765/614 Temperature and Water Level Sensors \(00813-0100-5565\)](#)
- [Rosemount 2230 Graphical Field Display \(00813-0100-2230\)](#)
- [Rosemount 5300 Level Transmitter \(00813-0100-4530\)](#)
- [Rosemount 5408 Level Transmitter \(00813-0100-4408\)](#)

Related information

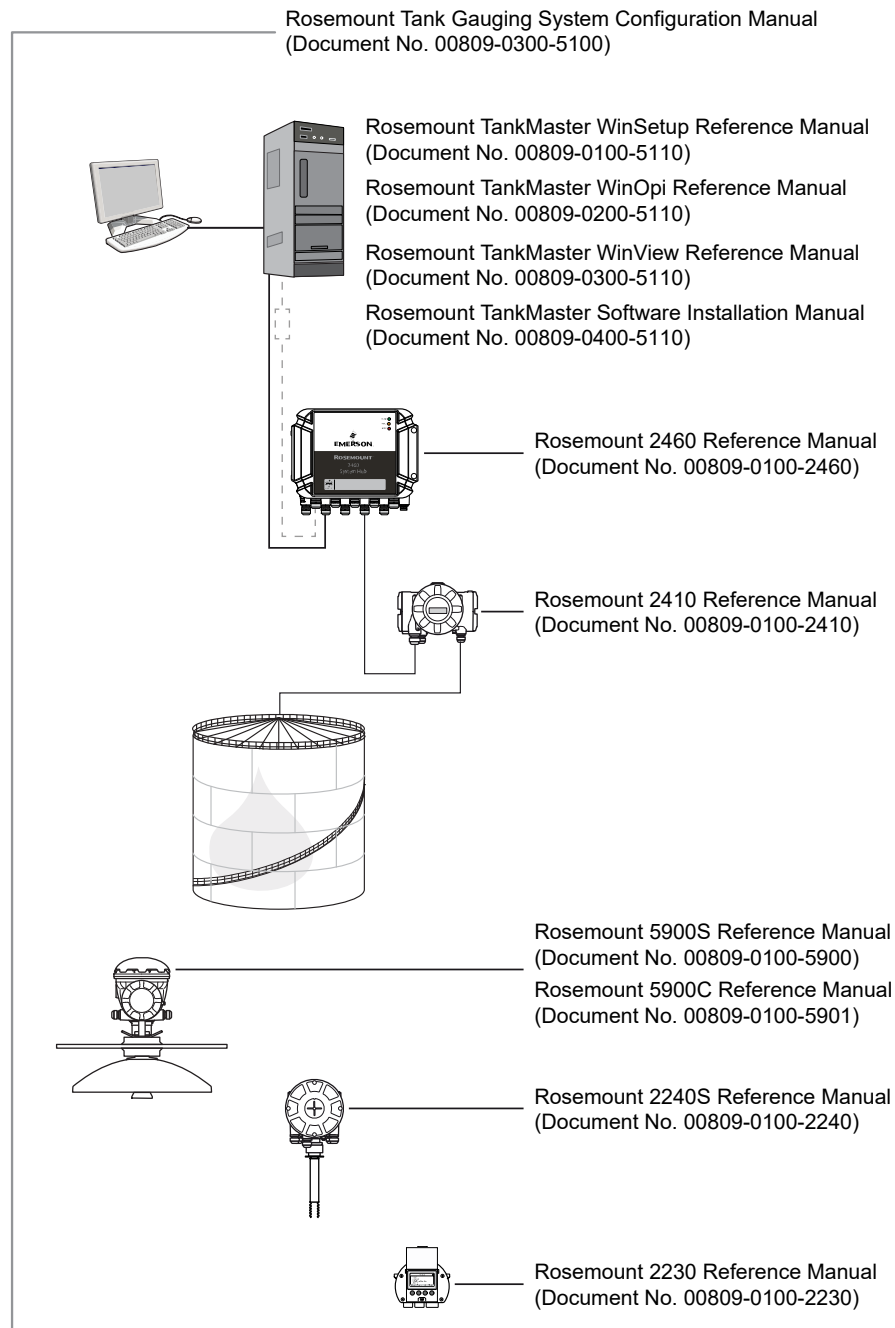
[Tank Gauging products on Emerson.com](#)

[Level products on Emerson.com.](#)

[Rosemount TankMaster Inventory Management on Emerson.com.](#)

1.2.1 System and user documentation structure

Figure 1-1: Rosemount Tank Gauging System and User Documentation Structure



1.3 Installation overview

The installation comprises tasks such as:

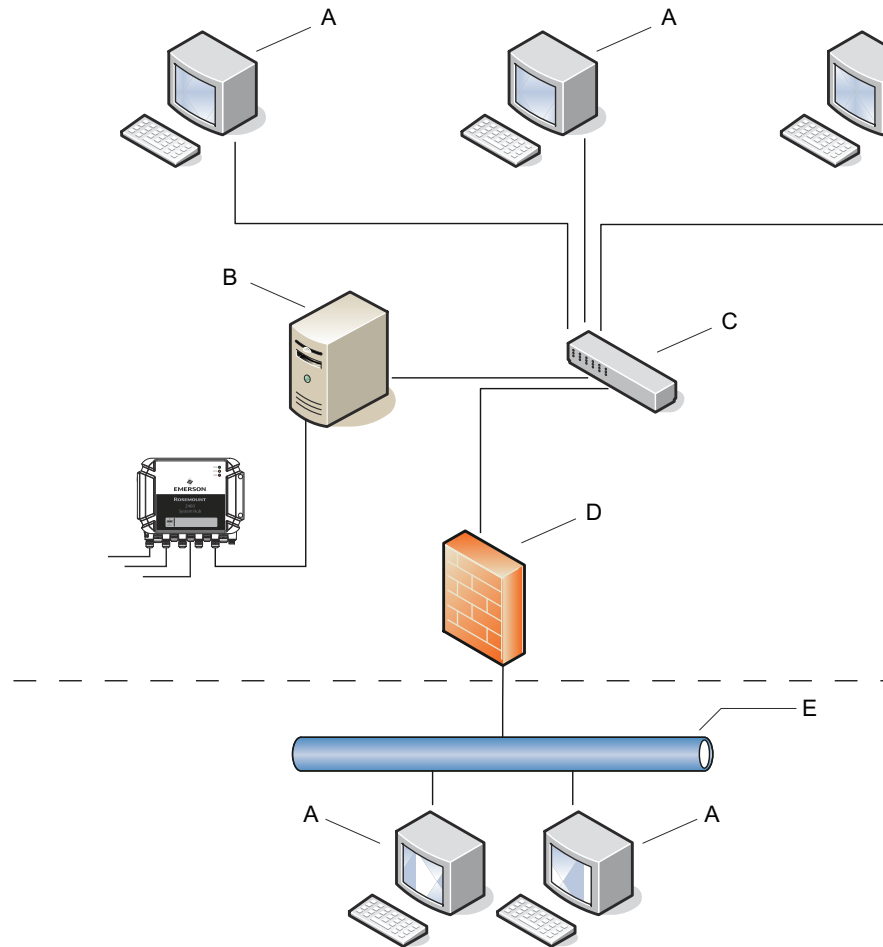
- General Windows settings such as network installation and configuration
- TankMaster software installation
- Firewall and DCOM configuration
- Client specific configuration that includes the Windows time client and WinOpi configuration

Note

Basic knowledge about Microsoft® Windows and Local Area Network (LAN) configuration is required for a network installation of Rosemount TankMaster.

In this manual, the following network topology is used for the installation of TankMaster in a network environment:

Figure 1-2: Typical Network Topology



- A. WinOpi
- B. TankMaster server
- C. Switch
- D. Firewall
- E. Existing LAN at customer site

2 Requirements

2.1 Important notes

The following notes should be considered prior to installing the Rosemount TankMaster software package.

- Only operating system (OS) and TankMaster are running on the PC.
- Processor, RAM, and OS requirements depend on TankMaster version and used operating system.
- MS SQL Server 2017 Express Edition that TankMaster uses for batch support is included in TankMaster versions 6.E2 and higher.
- NET 4.0 is required for installation and normal operation of SQL Server. TankMaster checks for .NET 4.0 and installs it if it is not available.
- Administrative rights are required to install TankMaster.
After installation, the operating system restarts to automatically execute **Saabreg.bat** file. That requires a user from **Administrator** group to log in after restart, otherwise **Saabreg.bat** must be executed manually **As Administrator** from an elevated command prompt.
- All OS related actions, such as DCOM or Firewall configuration require administrative rights.
- All TankMaster nodes must have the same TankMaster version.
All computers with TankMaster installations that are supposed to communicate with each other must have the same set of Windows user accounts.
- Computers must be in the same work group or domain if they are going to be used in redundant installation.
- Windows user must be logged in to run TankMaster.
- Remote Desktop connections shall not be allowed to the computers that are running TankMaster servers as it may log out Windows user when disconnecting, which will affect normal operation of TankMaster.
- Hibernate and Sleep features must be switched off for the nodes that host TankMaster installations. This depends on the operating systems and usually done in Power Options / Current Power Plan / Advanced Power Option setting. Recommended settings are:

Option	Setting
Hard Disk / Turn off hard disk after	Never
USB settings / USB Selective Suspend Setting	Disable
Sleep / Sleep after	Never
Sleep / Hibernate after	Never
Display / Turn off display after	Never. This setting is especially useful for client PCs running WinOPI.

Related information

[Hardware requirements](#)

[Software requirements](#)

2.2 Hardware requirements

The following minimum system specification is required for TankMaster version 6.G1⁽¹⁾

Table 2-1: Hardware Requirements

General	
Product	Rosemount TankMaster; WinOpi, WinSetup, WinView
TankMaster PC Hardware	
Processor	<ul style="list-style-type: none"> Intel® Core™ i5, 2.40 GHz
System type	64-bit OS, x64-based processor
Internal Memory (RAM)	<ul style="list-style-type: none"> 16 GB: (64-bit OS)
Hard Disk Drive (HDD) or Solid State Drive (SSD)	128 GB <ul style="list-style-type: none"> TankMaster + SQL Server 2017 Express needs approximately 800 MB Supported operating systems (up to Microsoft® Windows Server 2022) need approximately 25 GB of available space
Monitor	A 22 inch or larger monitor is recommended. Minimum resolution 1920 x 1080.
USB ports	One or more dedicated ports, depending on a number of hardware license keys and communication channels. For example: <ul style="list-style-type: none"> One port for TankMaster hardware key One port for each protocol channel if FBM 2180 serial converter is used One port for LNG Rollover hardware key in case this function will be used No USB ports required for TankMaster client-only installation.
Hardware license key	For hardware license key consider the following: <ul style="list-style-type: none"> One hardware license key is used for each PC hosting TankMaster TankServer. An extra hardware license key is required for LNG Rollover function for each PC hosting TankMaster TankServer. Hardware key is not required for TankMaster clients that are supposed to connect to the remote TankMaster server. A hardware key is not required to run WinSetup but is required for tanks installation.
FBM	Rosemount Field Bus Modem is used to connect TRL2 field bus from Rosemount Tank Gauging field devices or the Rosemount 2460 System Hub to the TankMaster PC in the control room using either the RS232 or the USB interface. Field Bus Modem FBM 2171, Part no 9240002-633. Field Bus Modem FBM 2180 (USB), Part no: 9240002-635 ⁽¹⁾
Network Interface Card (NIC)	Network Interface Card required for Modbus TCP protocol channel and/or for TankMaster Client/Server communication.

⁽¹⁾ Rosemount 2180 is used for connecting the TRL2 field bus from Rosemount Tank Gauging field devices or the Rosemount 2460 System Hub, to the TankMaster PC in

⁽¹⁾ For previous TankMaster versions other system requirements apply. Please contact Emerson/Rosemount Tank Gauging for more information.

the control room. It can be connected to the PC using either the RS232 or the USB interface.

Note

A hardware key is **not** required to run WinSetup but is required for installing tanks.

2.3 Software requirements

2.3.1 Operating system

For 6.G1 and higher, 64-bit Operating System with English (US) in the list of preferred languages. Supported families with latest security updates:

- Microsoft® Windows™ 11
- Microsoft Windows 10
- Microsoft Windows Server 2022

All TankMaster nodes must have operating systems with the same regional settings. The decimal point (".") as a decimal symbol must be set on all nodes.

3 Install the Rosemount TankMaster Software

This section includes instructions for installing the Rosemount TankMaster software package.

3.1 TankMaster installation

This section describes how to install the TankMaster software package and various installation options.

Prerequisites

Prior to installing the TankMaster software, ensure that the TankMaster ISO image file integrity is verified. This is recommended if TankMaster is installed from an ISO image vs. TankMaster installation disk.

TankMaster is available in two versions:

TankMaster WinOpi A complete custody transfer and inventory software package. All calculations are based on actual API and ISO standards.

TankMaster WinView A software package with basic inventory capabilities for smaller tank and marketing terminals, biofuels, chemical plants etc.

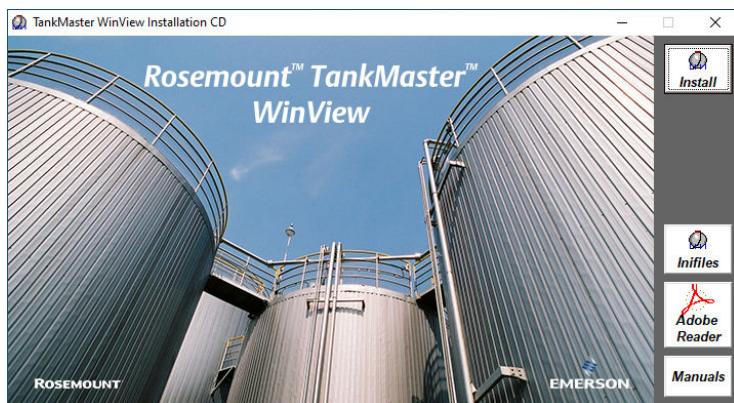
Procedure

To install TankMaster, start **TMSsetup.exe** from the TankMaster installation disk.

Figure 3-1: TankMaster WinOpi



Figure 3-2: TankMaster WinView



Related information

[ISO image integrity verification](#)

3.1.1 Installation options

The TankMaster installation window has various options to select.

- **Install** button starts TankMaster Installation.
- **Inifiles** starts INI files installation. It is also a part of TankMaster Installation and normally does not have to be installed explicitly. INI files installation shall be used if existing INI files that are already installed in the system have to be updated. The installation is fully automated and does not require user interaction
- **Adobe Reader** button allows you to install Adobe Acrobat Reader which is required to read the TankMaster Reference Manuals. Follow the on-screen instructions.
- The **Manuals** button opens a list of TankMaster Reference and Configuration Manuals to read before TankMaster installation if needed.

3.1.2 Installation procedure

TankMaster Installation wizard guides you through a number of installation pages.

Note

Firewall exception list has to be updated with required components if TankMaster will be used in remote communication.

Procedure

1. Read or print **End-User License Agreement** for Rosemount TankMaster and accept.
2. Select the **folder** where setup will install the files.
It is recommended to keep **C:\Rosemount\TankMaster** suggested by default.
3. Select **Setup type** that suit your needs.
 - Demo Installation
 - Client Installation. This is only for systems that will be used to connect to the remote servers.
 - Server and Client Installation. This is both for standalone systems and systems that will potentially connect to remote servers.

Select **Install batch server** checkbox if batch support needs to be installed as well. The checkbox is not applicable for Client Installation type

Note

For TankMaster WinView, setup type equivalent to Server and Client Installation is performed.

4. **DCOM configuration.**
 - TankMaster DCOM settings. Select this option to configure DCOM with settings required for normal TankMaster operations. This option is required for Client Installation and recommended for Server and Client installations types.
 - Keep existing DCOM settings. Select this option if no changes will be done in DCOM settings. Can be used in Server and Client installations, or if DCOM will be configured manually later.

Related information

[Windows Firewall configuration](#)

4 TankMaster in network environment

4.1 Introduction

This chapter describes the steps that need to be performed to make TankMaster work in a network environment under all supported operating systems.

The following information is included:

- recommendations on TankMaster in domain or workgroup environments
- descriptions on how the Firewall should be configured to allow TankMaster traffic in the network environment
- recommendations on DCOM configuration

Configuration for different Windows 10 and Windows 11 families as well as Windows Servers is the same unless explicitly stated otherwise.

All TankMaster workstations in the network should be connected to the same Local Area Network (LAN), either on the same segment or connected via Remote Access Service (RAS) or bridges. For the system to work correctly, DCOM and RPC services must be enabled.

Changing DCOM and Firewall setting requires administrative rights.

Related information

[Domains and workgroups](#)

[Windows Firewall configuration](#)

[DCOM Configuration](#)

4.2 Domains and workgroups

TankMaster can be installed in an existing domain, or a new domain created specifically for a separate TankMaster network. In this case different users can log on to the connected TankMaster computers. These users might need to be configured in the **DCOM Component Services** utility individually, or a group needs to be defined that these users will belong to.

If TankMaster will be used in a workgroup, the same Windows user account should exist in all clients and server computers. User matching is done at the computer that works as a server in TankMaster installation. **Access denied** might return to the client application if the user that logged on to the client computer differs from the one logged on to the server computer.

4.3 Windows Firewall configuration

Windows firewall need to be configured in order to run TankMaster in a network environment.

If network security is not an issue (for example if the TankMaster computers are behind a hardware firewall, or local security policy allows that) the Windows Firewall may be completely turned off. This is not the recommended configuration.

The script **TM_firewall_rules.cmd**, located in **Misc** folder in installation media, does all required configuration.

The script must be run as **Administrator** from the hard drive. Alternatively, programs and ports can be added manually to the exception list.

Related information

[Adding programs or ports to the TankMaster exception list](#)
[Firewall exception lists for programs and ports](#)

4.3.1 Configure Windows firewall using TankMaster script

This is a description of how to use a TankMaster script to automatically add programs and ports to the exception list for Windows Defender firewall.

Prerequisites

Ensure that you are logged in as a Windows Administrator.

Procedure

1. Locate the **Misc** folder and the script file **TM_firewall_rules.cmd** in the TankMaster installation program package.
2. Copy the script file to the TankMaster server's hard drive.
3. Double-click to execute the script.

Related information

[Exception list for server and client installation](#)
[Exception list for client installation](#)
[Exception list for ports](#)

4.4 DCOM Configuration

Distributed Component Object Model (DCOM) is a protocol that enables software components to communicate directly over a network in a reliable, secure, and efficient manner. DCOM is designed for use across multiple network transports, including Internet protocols such as HTTP.

DCOM must be configured in a special way if TankMaster is going to be used in network environment where different TankMaster components communicate with each other through the network boundaries.

TankMaster Installation program configures DCOM as needed during installation, provided that **TankMaster DCOM Setting** option has been selected during installation. The script that does necessary configuration is available after installation in `..\TankMaster\SaabReg.bat` file. That file can be executed later at any time to perform again all necessary registrations and configurations if needed. The file must be executed **As Administrator**.

Alternatively, DCOM can be configured or fine-tuned manually if DCOM troubleshooting is required, or when options other than **TankMaster DCOM Setting** was selected during installation.

Use `dcomcnfg.exe` built-in utility that allows configuring various DCOM specific settings. Open the DCOM configuration window by running `dcomcnfg.exe` from the command line prompt. Note that DCOM changes requires administrative rights.

Related information

[Configuration of DCOM component service](#)
[SaabReg.bat](#)

4.5 Sharing the TankMaster folder

It is required to have a TM share for each TankMaster installation if they are going to be used in redundant environment.

SaabReg.bat has instructions to create a share and set access permissions for the share. Normally it is not needed to do this manually.

Related information

[Creating shared TankMaster folder](#)

4.6 Time synchronization

TankMaster nodes shall be synchronize with the same time in redundant environment.

Configure all nodes to synchronize the system time with the same source.

Identify a node that will serve as TankMaster time server, that is, the primary server in a redundant system. All other TankMaster nodes will synchronize their computer system times with the time server.

Related information

[Set up time server node](#)

[Set up time client node](#)

4.6.1 Set up time server node

To set up a node as a time server:

Prerequisites

The .reg and .bat files can be found in **..\Enable Function\Time_Sync** folder.

Procedure

1. Open port **UDP 123** in order for the clients to be able to update the time setting.
2. Run **TM_SetAsClockServer.reg**. Admin privileges are required.
3. Run **TM_StartClockServer.bat**. Admin privileges are required.

Related information

[Adding programs or ports to the TankMaster exception list](#)

4.6.2 Set up time client node

To set up a node as a time client:

Prerequisites

The .reg and .bat files can be found in **..\Enable Function\Time_Sync** folder.

Procedure

1. Open **TM_SetAsClockClient.reg** in Notepad and replace all **TM_MASTER_CLOCK_NODE** occurrences with the real time server node name.
2. Save **TM_SetAsClockClient.reg**.
3. Run **TM_SetAsClockClient.reg**. Admin privileges are required.
4. Run the **TM_startAndSyncClockClient.bat** file. Admin privileges are required.
5. Restart the computer to apply the settings.

A SaabReg.bat

SaabReg.bat file makes some important tasks required for TankMaster to operate in either standalone or distributed installations. The file is a text file and can be inspected by any text editor.

The computer will restart to finish DCOM installation in distributed installation after running **SaabReg.bat**.

The main tasks **SaabReg.bat** does are:

- Registers standard system and some TankMaster modules in Windows system folder using **regsvr32** and **RegAsm**.
- Registers TankMaster modules in TankMaster Lib folder using regsvr32.
- Registers TankMaster COM servers in TankMaster Server folder using command line option **-RegServer**, for example: **TankServer -RegServer**
- Registers some TankMaster client components in TankMaster Opi and Opi/Shared folders using command line option **-RegServer**
- Creates TankMaster TankMaster share for the redundancy to work
 - NET SHARE TM="C:\Rosemount\TankMaster"
- Grants full access to Everyone for C:\Rosemount\TankMaster folder
- Grants full access to Everyone for TankMaster share
- Sets default DCOM permissions (for network installation)
 - echo --Setting DCOM machine access permissions...
 - C:\Rosemount\TankMaster\Lib\DComPerm.exe -ma set NETWORK permit level:l,r
 - C:\Rosemount\TankMaster\Lib\DComPerm.exe -ma set INTERACTIVE permit level:l,r
 - C:\Rosemount\TankMaster\Lib\DComPerm.exe -ma set EVERYONE permit level:l,r
 - C:\Rosemount\TankMaster\Lib\DComPerm.exe -ma set SYSTEM permit level:l,r
 - C:\Rosemount\TankMaster\Lib\DComPerm.exe -ma set "ANONYMOUS LOGON" permit level:l,r
 - C:\Rosemount\TankMaster\Lib\DComPerm.exe -ma set ADMINISTRATORS permit level:l,r
 - echo --Setting DCOM machine launch permissions...
 - C:\Rosemount\TankMaster\Lib\DComPerm.exe -ml set NETWORK permit level:l,r
 - C:\Rosemount\TankMaster\Lib\DComPerm.exe -ml set INTERACTIVE permit level:l,r
 - C:\Rosemount\TankMaster\Lib\DComPerm.exe -ml set EVERYONE permit level:l,r
 - C:\Rosemount\TankMaster\Lib\DComPerm.exe -ml set SYSTEM permit level:l,r
 - C:\Rosemount\TankMaster\Lib\DComPerm.exe -ml set "ANONYMOUS LOGON" permit level:l,r
 - C:\Rosemount\TankMaster\Lib\DComPerm.exe -ml set ADMINISTRATORS permit level:l,r
 - echo --Setting DCOM default access permissions...
 - C:\Rosemount\TankMaster\Lib\DComPerm.exe -da set NETWORK permit level:l,r
 - C:\Rosemount\TankMaster\Lib\DComPerm.exe -da set INTERACTIVE permit level:l,r

```
— C:\Rosemount\tankmaster\lib\DComPerm.exe -da set EVERYONE permit level:l,r
— C:\Rosemount\tankmaster\lib\DComPerm.exe -da set SYSTEM permit level:l,r
— C:\Rosemount\tankmaster\lib\DComPerm.exe -da set "ANONYMOUS LOGON"
  permit level:l,r
— C:\Rosemount\tankmaster\lib\DComPerm.exe -da set ADMINISTRATORS permit
  level:l,r e
echo --Setting DCOM default launch permissions...
— C:\Rosemount\tankmaster\lib\DComPerm.exe -dl set NETWORK permit level:l,r
— C:\Rosemount\tankmaster\lib\DComPerm.exe -dl set INTERACTIVE permit level:l,r
— C:\Rosemount\tankmaster\lib\DComPerm.exe -dl set EVERYONE permit level:l,r
— C:\Rosemount\tankmaster\lib\DComPerm.exe -dl set SYSTEM permit level:l,r
— C:\Rosemount\tankmaster\lib\DComPerm.exe -dl set "ANONYMOUS LOGON"
  permit level:l,r
— C:\Rosemount\tankmaster\lib\DComPerm.exe -dl set ADMINISTRATORS permit
  level:l,r
• Sets OPCEnum.exe DCOM Identity to Interactive User (for network installation)
  — echo --Setting OPCEnum DCOM Identity to Interactive User
  — C:\Rosemount\tankmaster\lib\DComPerm.exe -runas {13486D44-4821-11D2-
    A494-3CB306C10000} "Interactive User"
• Sets TankMaster applications to default DCOM permissions (for network installation)
  echo --OPCEnum
  — C:\Rosemount\tankmaster\lib\DComPerm.exe -aa {13486D44-4821-11D2-
    A494-3CB306C10000} default
  — C:\Rosemount\tankmaster\lib\DComPerm.exe -al {13486D44-4821-11D2-
    A494-3CB306C10000} default
  echo --Rosemount TankMaster/TankServer OPC Server
  — C:\Rosemount\tankmaster\lib\DComPerm.exe -aa {11F0E1D4-
    FED9-11D1-9151-00805FC11E1C} default
  — C:\Rosemount\tankmaster\lib\DComPerm.exe -al {11F0E1D4-
    FED9-11D1-9151-00805FC11E1C} default
  echo --Rosemount TankMaster/BatchServer OPC Server
  — C:\Rosemount\tankmaster\lib\DComPerm.exe -aa {F5AA66AD-2218-45DB-9A6B-
    A897AB952D1D} default
  — C:\Rosemount\tankmaster\lib\DComPerm.exe -al {F5AA66AD-2218-45DB-9A6B-
    A897AB952D1D} default
  echo --Rosemount TankMaster/ModbusMaster OPC Server
  — C:\Rosemount\tankmaster\lib\DComPerm.exe -aa {07864DD0-
    C47B-11D1-9117-00805FC11E1C} default
  — C:\Rosemount\tankmaster\lib\DComPerm.exe -al {07864DD0-
    C47B-11D1-9117-00805FC11E1C} default
  echo --Rosemount TankMaster/EnrafGPUMaster OPC Server
  — C:\Rosemount\tankmaster\lib\DComPerm.exe -aa {1900C4E0-995F-11D3-
    A6E0-0010A4F6A98C} default
```

```
— C:\Rosemount\TankMaster\Lib\DComPerm.exe -al {1900C4E0-995F-11D3-
A6E0-0010A4F6A98C} default
echo --Rosemount TankMaster/IOTMaster OPC Server
— C:\Rosemount\TankMaster\Lib\DComPerm.exe -aa {C51117C1-33FD-11D5-
BA10-00D0B7098396} default
— C:\Rosemount\TankMaster\Lib\DComPerm.exe -al {C51117C1-33FD-11D5-
BA10-00D0B7098396} default
echo --Rosemount TankMaster/Modbus Slave Protocol
— C:\Rosemount\TankMaster\Lib\DComPerm.exe -aa
{21F82291-05A9-11D2-87F9-00805FA65AA9} default
— C:\Rosemount\TankMaster\Lib\DComPerm.exe -al
{21F82291-05A9-11D2-87F9-00805FA65AA9} default
echo --Rosemount TankMaster/Modbus FCT Slave Protocol
— C:\Rosemount\TankMaster\Lib\DComPerm.exe -aa {65AF57E6-9958-45B3-88A3-
C4A338AEBDCD} default
— C:\Rosemount\TankMaster\Lib\DComPerm.exe -al {65AF57E6-9958-45B3-88A3-
C4A338AEBDCD} default
echo --Rosemount TankMaster/AsciiLtSlave Protocol
— C:\Rosemount\TankMaster\Lib\DComPerm.exe -aa {5C6FBCB1-F2DB-11D4-
B9D5-00D0B7098396} default
— C:\Rosemount\TankMaster\Lib\DComPerm.exe -al {5C6FBCB1-F2DB-11D4-
B9D5-00D0B7098396} default
echo --Rosemount TankMaster/DataHighwaySlave Protocol
— C:\Rosemount\TankMaster\Lib\DComPerm.exe -aa
{643C3823-7AC4-11D2-8862-00805FA65AA9} default
— C:\Rosemount\TankMaster\Lib\DComPerm.exe -al
{643C3823-7AC4-11D2-8862-00805FA65AA9} default
echo --Rosemount TankMaster/HARTMaster Protocol
— C:\Rosemount\TankMaster\Lib\DComPerm.exe -aa {C71A51E0-
F3F2-11D5-9E6B-00500436F94C} default
— C:\Rosemount\TankMaster\Lib\DComPerm.exe -al {C71A51E0-
F3F2-11D5-9E6B-00500436F94C} default
```


B Adding programs or ports to the TankMaster exception list

The following procedure describes how to add programs or ports to the TankMaster exception list.

Procedure

1. Open **Windows Defender Firewall** window from the Control Panel\System and Security.
2. Click on the **Advanced Settings** to launch **Windows Defender Firewall with Advanced Security** window.
3. Right-click on the **Inbound Rules** item in the left panel and select **New Rule...** to start **New Inbound Rule Wizard**, and start creating an exception rule for a program or port.
4. Select **Program or Port as a Rule Type** and press **Next**.
 - a) On **Program**, enter a path into This program path.
 - b) On **Port**, select TCP or UDP and enter port number in the Specific local ports field.
5. On **Action**, select **Allow the connection** and press **Next**.
6. On **Profile**, select all three profiles and press **Next**.
7. On **Name**, type a name for the rule and press **Finish**.

Postrequisites

No **Outbound** rules needs to be configured.

C Firewall exception lists for programs and ports

The programs and ports provided below are mainly for reference, and in case manual procedure to add them to the exception list is used. **TM_firewall_rules.cmd** script takes care of all routines and does all necessary configuration based on TankMaster installation type.

C.1 Exception list for server and client installation

This is a list of components that the script **TM_firewall_rules.cmd** adds to the **Windows Firewall exception list** for computers with **TankMaster server and client** installation. This procedure must be repeated for all computers with **Server and Client** installation type.

- %SystemRoot%\SysWOW64\OPCENUM.EXE
- ..\TankMaster\Server\TankServer.exe
- ..\TankMaster\Server\BatchServer.exe
- ..\TankMaster\Server\ModbusMaster.exe
- ..\TankMaster\Server\IOTMaster.exe
- ..\TankMaster\Server\EnrafGpuMaster.exe
- ..\TankMaster\Server\ModbusSlave.exe
- ..\TankMaster\Server\ModbusFCTSlave.exe
- ..\TankMaster\Server\DataHighwaySlave.exe
- ..\TankMaster\Server\AsciiLTSlave.exe
- ..\TankMaster\Server\HartMaster.exe
- ..\TankMaster\Setup\StmSetup.exe
- ..\TankMaster\Lib\fxScript.exe⁽²⁾
- ..\TankMaster\Opi\StmOpi.exe
- ..\TankMaster\Opi\Hdv.exe
- ..\TankMaster\Opi\Htv.exe
- ..\TankMaster\Opi\Rtv.exe
- ..\TankMaster\Opi\Shared\RGM.exe

Related information

[Configure Windows firewall using TankMaster script](#)
[Windows Firewall configuration](#)

(2) *BatchServer and fxScript is not added to the exception list if Batch support has not been chosen during installation.*

C.2 Exception list for client installation

This is a list of components that the script **TM_firewall_rules.cmd** adds to the Windows Firewall exception list for computers with **TankMaster client** installation. This procedure must be repeated for all computers with **Client** installation type.

- %SystemRoot%\SysWOW64\OPCENUM.EXE
- ..\TankMaster\Setup\StmSetup.exe
- ..\TankMaster\Opi\StmOpi.exe
- ..\TankMaster\Opi\Hdv.exe
- ..\TankMaster\Opi\Htv.exe
- ..\TankMaster\Opi\Rtv.exe
- ..\TankMaster\Opi\Shared\RGM.exe

Related information

[Configure Windows firewall using TankMaster script](#)
[Windows Firewall configuration](#)

C.3 Exception list for ports

This is a list of firewall ports that the script **TM_firewall_rules.cmd** opens for computers with TankMaster installation.

- TCP 135. Used by DCOM connections.
- TCP 502. Used by Modbus TCP/IP clients and servers.
- UDP 123. Used by NTP (Network Time Protocol) server in Windows Time Synchronization subsystem .

Related information

[Configure Windows firewall using TankMaster script](#)
[Windows Firewall configuration](#)

C.4 SQL server related exceptions

This is a list of programs and ports that must be opened for SQL Server if batch support was selected during TankMaster installation.

- C:\Program Files\Microsoft SQL Server\MSSQL14.TM_BATCH\MSSQL\Binn\sqlservr.exe

In addition to the SQL Server, the following firewall ports shall be added to the exception list. These are, by default, the typical ports used by SQL Server and associated database engine services.

- TCP 1433
- TCP 1434
- UDP 1434
- TCP 4022

Related information

[Configure the Windows Firewall to allow SQL Server access](#)
[Windows Firewall and SQL Server](#)

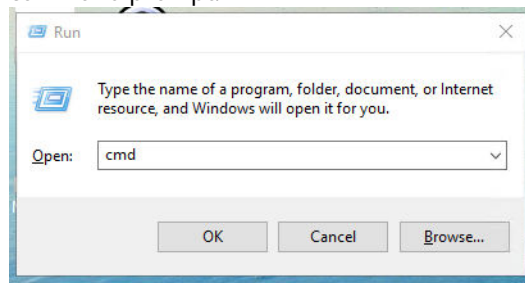
D ISO image integrity verification

Prerequisites

Use the Microsoft® Windows built-in **Certutil.exe** tool to check the integrity of the TankMaster ISO image. It is recommended that this is done before installing TankMaster.

Procedure

1. Press **Windows Key + R** to open the **Run** dialog. Type **cmd** and select **OK** to open the command prompt:



2. Change to the directory where the **TankMaster .ISO** file is located (in this example: C:\temp).
3. Run **certutil.exe** by entering the following string on the command prompt:
`certutil -hashfile [Name of TM .ISO -file] SHA 256 > my.sha256.`

Example

In this example the TankMaster ISO file name is:
TMCD_INVENTORY_6G0_BUILD73.ISO.

```
C:\WINDOWS\system32\cmd.exe
C:\Temp>certutil -hashfile TMCD_INVENTORY_6G0_BUILD73.iso SHA256_
```

A file **my.sha256** will be created that contains **SHA256** hash for the specified ISO file.

```
C:\Temp>certutil -hashfile TMCD_INVENTORY_6G0_BUILD73.iso SHA256
SHA256 hash of TMCD_INVENTORY_6G0_BUILD73.iso:
b97717e84dbd3fedbea2a4b4b11680862c8bd376a0fb1c947a9d08accdbc30ad
CertUtil: -hashfile command completed successfully.
```

4. Compare the hash in this file with the hash file provided by Emerson.

Note

Do not install TankMaster if hashes differ. In this case contact your local Emerson office.

Note

There are many other tools that can be used to calculate SHA256, e.g. 7zip.

E Auto log on

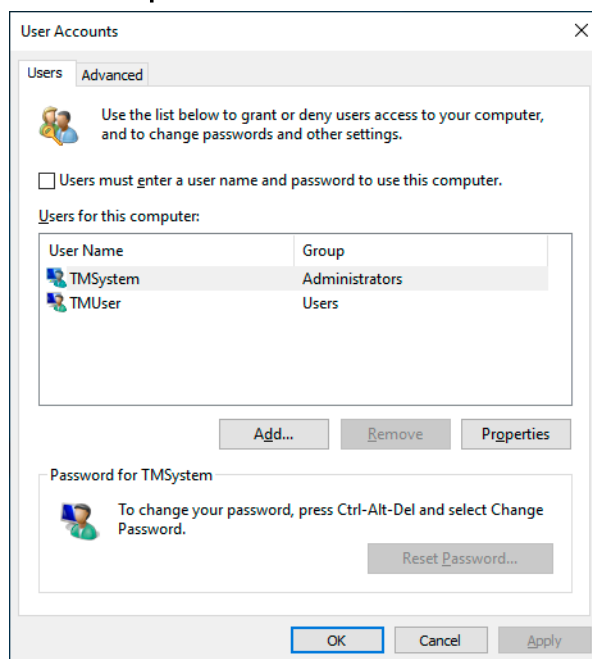
It might be necessary to configure all servers and clients to auto log on to the Windows user account. This configuration can be done in two ways. Both ways require administration rights.

E.1 User accounts manager

This is a description on how to use Network Policy Wizard **netplwiz.exe**, a tool for managing user accounts on Windows. **netplwiz.exe** let users easily remove the need to enter a password upon Windows logon.

Procedure

1. In **Windows search**, type **netplwiz** and press enter.
2. Click the **netplwiz** icon.



3. Unselect the check box **User must enter a username and password to use this computer** and select the **Apply** or **OK** button.

Need help?

Note that the checkbox might not be visible by default but can be available by editing Windows registry by setting **DevicePasswordLessBuildVersion=0** in HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\WindowsNT\CurrentVersion\PasswordLess\Device.

E.2 Update registry

This is a description of how to configure auto log on by updating the Windows registry. If there are multiple domain servers, it's important that the TankMaster server and the WinOpi clients are connected to the same domain.

Procedure

1. Open the **Windows Registry Editor**.
2. Locate the following key:
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\WindowsNT\CurrentVersion\Winlogon]
3. Set the following strings:
DefaultUserName=TMSystem
DefaultPassword=TankMaster
AutoAdminLogon=1

F Configuration of DCOM component service

DCOM provides abstraction from an underlying network infrastructure and can use any transport protocol, including TCP/IP, HTTP, UDP, IPX/SPX, and NetBIOS. Workstation and server administrators can configure security settings for each TankMaster component using the **DCOM Component Services** (dcomcnfg.exe).

This Appendix describes how DCOM settings shall be configured for TankMaster to work in a distributed environment.

Dcomcnfg.exe can be launched from the command line prompt and requires administrative rights.

Related information

[DCOM Configuration](#)

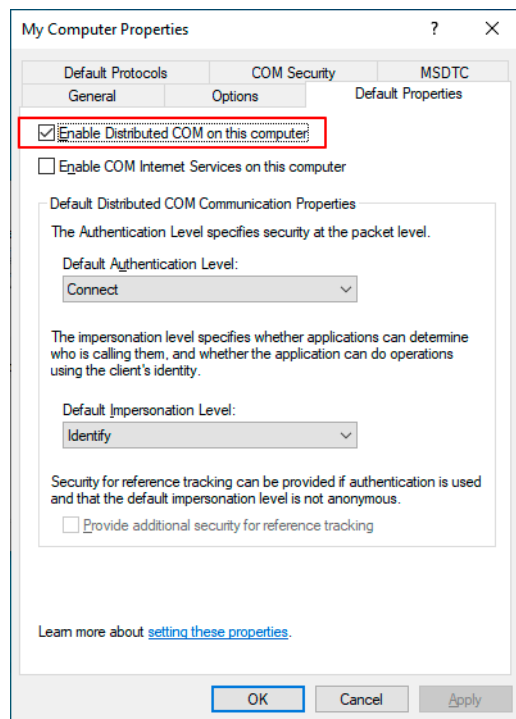
F.1 Computer default properties

Run **dcomcnfg** from **Windows Start** menu, navigate to **Component Services / Computers** folder, and open **Properties** for **My Computer** from the popup menu.

Make sure that the following settings have been set in the **Default Properties** page:

- **Enable Distributed COM on this computer:** enabled.
- **Default Authentication Level** set to **Connect** (default setting)
- **Default Impersonation Level** set to **Identify** (default setting)

Figure F-1: My Computer Properties

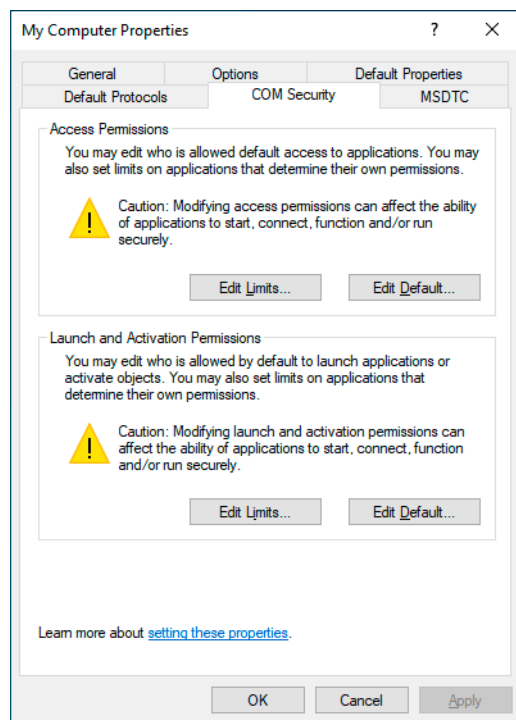


F.2 COM security configuration

Run **dcomcnfg** from **Windows Start** menu, navigate to **Component Services / Computers** folder, and open **Properties** for **My Computer** from the popup menu.

Make sure that the following settings have been set in the **COM Security** tab:

Figure F-2: COM Security settings for My Computer



The following required users or user groups shall be added to the **Access**, and **Launch and Activation Permissions** sections:

- ANONYMOUS LOGON
- Everyone
- INTERACTIVE
- NETWORK
- SYSTEM
- Administrators

Note

Some Permissions might already have some of the required user / user groups. In that case you just need to add the missing ones.

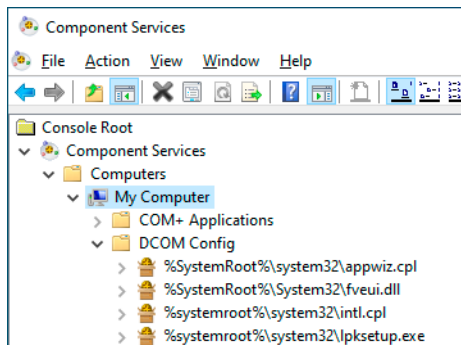
In **Access Permissions** section, for each newly added user or user group **Local Access** and **Remote Access** check boxes should be allowed.

In **Launch and Activation Permissions**, for each newly added user or user group Local Launch, Remote Launch, Local Activation and Remote Activation permissions should be allowed.

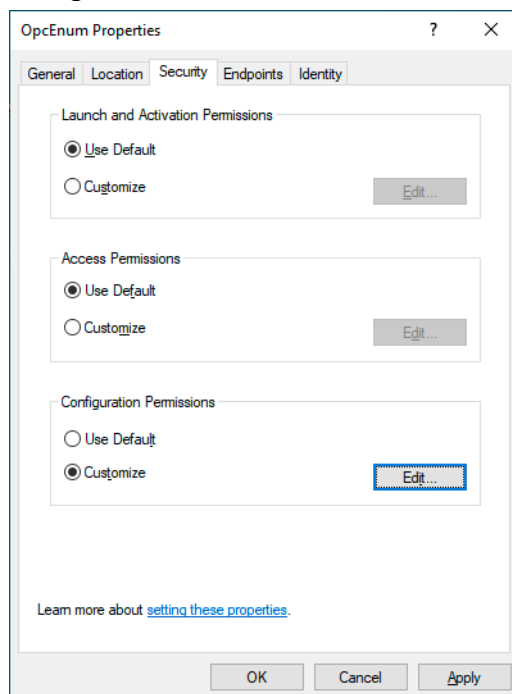
F.3 Set TankMaster permissions

Procedure

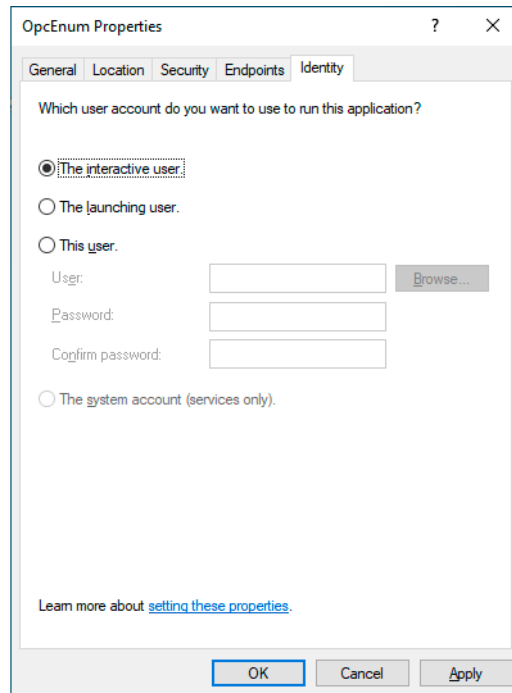
1. Open the **Component Service** window.
2. Expand **My Computer** → **DCOM Config**.



3. For each of the required components do the following:
 - a) Locate the component in the tree structure, and open its properties from the popup menu.
 - b) In the **Security** tab, set **Launch and Activation Permissions** and **Access Permissions** equal to **Use Default**. Usually there is no need to change **Configuration Permissions**.



c) in the **Identity** tab, verify that **The interactive user** is selected.



4. Follow steps 3.a to 3.c for the following components:

- OPC Enum
- Rosemount TankMaster\BatchServer OPC Server
- Rosemount TankMaster\TankServer OPC Server
- Rosemount TankMaster\EnrafGPUMaster OPC Server
- Rosemount TankMaster\FFMaster OPC Server
- Rosemount TankMaster\IOTMaster OPC Server
- Rosemount TankMaster\ModbusMaster OPC Server
- Rosemount TankMaster\HARTMaster OPC Server
- COM Server for configuration of Rosemount TankMaster Modbus Slave Protocol
- COM Server for configuration of Rosemount TankMaster Modbus Slave Protocol for FCT data
- COM Server for configuration of Rosemount TankMaster DataHighway Plus Slave Protocol
- COM Server for configuration of Rosemount TankMaster AsciiLT Slave Protocol
- COM Server for configuration of Rosemount TankMaster Ascii Slave protocol
- COM Server for configuration of Rosemount TankMaster ModbusLU Slave Protocol

5. Close the **Component Services** window.

F.3.1 DCOM Config components

These DCOM components should be configured for proper Rosemount TankMaster server permissions.

DCOM Config components

- Rosemount TankMaster\BatchServer OPC Server
- Rosemount TankMaster\TankServer OPC Server
- Rosemount TankMaster\EnrafGPUMaster OPC Server
- Rosemount TankMaster\FFMaster OPC Server
- Rosemount TankMaster\IOTMaster OPC Server
- Rosemount TankMaster\ModbusMaster OPC Server
- Rosemount TankMaster\HARTMaster OPC Server
- COM Server for configuration of Rosemount TankMaster Modbus Slave Protocol
- COM Server for configuration of Rosemount TankMaster Modbus Slave Protocol for FCT data
- COM Server for configuration of Rosemount TankMaster DataHighway Slave Protocol
- COM Server for configuration of Rosemount TankMaster AsciiLT Slave Protocol
- OPC Enum

G Creating shared TankMaster folder

G.1 Using NET SHARE to create a shared TankMaster folder

This is a description of how to use NET SHARE command to create a shared TankMaster folder.

Procedure

1. Open **Properties** for the TankMaster folder.
2. Use the following command: NET SHARE TM="C:\Rosemount\TankMaster".
where C:\Rosemount\TankMaster is the path where TankMaster is installed.

G.2 Creating a shared TankMaster folder

This is a description of how to manually create a shared TankMaster folder.

Procedure

1. Open **Properties** for the TankMaster folder.
2. Select the **Sharing** tab.
3. Select **Advanced Sharing**.
4. Make sure that user **Everyone** is added in the **Groups and user names** section and **Full Control (Change/Read)** is selected for that user.

For more information: [Emerson.com](https://www.emerson.com)

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