VisuNet Shell 6 DRDC License

Manual

Your automation, our passion.

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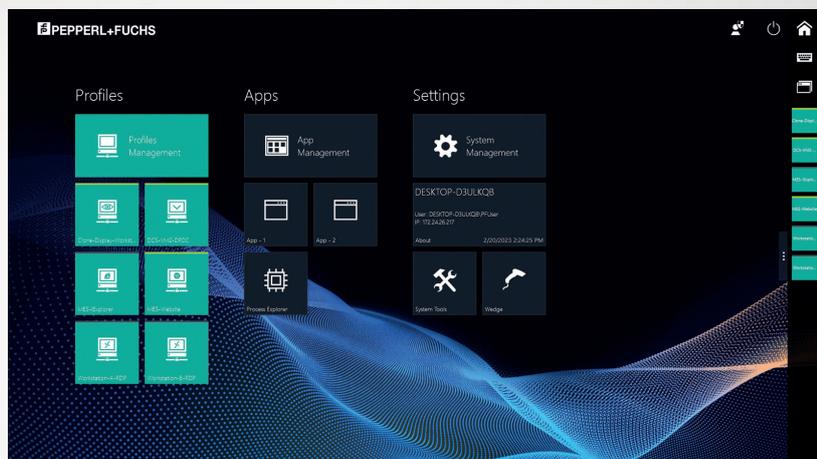
With regard to the supply of products, the current issue of the following document is applicable: The General Terms of Delivery for Products and Services of the Electrical Industry, published by the Central Association of the Electrical Industry (Zentralverband Elektrotechnik und Elektroindustrie (ZVEI) e.V.) in its most recent version as well as the supplementary clause: "Expanded reservation of proprietorship"

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1   History of the Manual

The following editions of the manual have been released:

Version	Comments
06/2023	First version for VisuNet RM Shell 6.0

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2 Introduction

2.1 Content of this Document

This document contains information required to use the product in the relevant phases of the product life cycle. This may include information on the following:

- Product identification
- Delivery, transport, and storage
- Mounting and installation
- Commissioning and operation
- Maintenance and repair
- Troubleshooting
- Dismounting
- Disposal

Note

For full information on the product, refer to the further documentation on the Internet at www.pepperl-fuchs.com.

Note

For specific device information such as the year of construction, scan the QR code on the device. As an alternative, enter the serial number in the serial number search at www.pepperl-fuchs.com.

The documentation comprises the following parts:

- This document
- Datasheet

In addition, the documentation may comprise the following parts, if applicable:

- EU-type examination certificate
- EU declaration of conformity
- Attestation of conformity
- Certificates
- Control drawings
- Instruction manual
- Functional safety manual
- Other documents

2.2 Target Group, Personnel

Responsibility for planning, assembly, commissioning, operation, maintenance, and dismounting lies with the plant operator.

Only appropriately trained and qualified personnel may carry out mounting, installation, commissioning, operation, maintenance, and dismounting of the product. The personnel must have read and understood the instruction manual and the further documentation.

Prior to using the product make yourself familiar with it. Read the document carefully.

2.3 Symbols Used

This document contains symbols for the identification of warning messages and of informative messages.

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Warning Messages

You will find warning messages, whenever dangers may arise from your actions. It is mandatory that you observe these warning messages for your personal safety and in order to avoid property damage.

Depending on the risk level, the warning messages are displayed in descending order as follows:

Danger!

This symbol indicates an imminent danger.

Non-observance will result in personal injury or death.

Warning!

This symbol indicates a possible fault or danger.

Non-observance may cause personal injury or serious property damage.

Caution!

This symbol indicates a possible fault.

Non-observance could interrupt the device and any connected systems and plants, or result in their complete failure.

Informative Symbols

Note

This symbol brings important information to your attention.

Action

1. This symbol indicates a paragraph with instructions. You are prompted to perform an action or a sequence of actions.

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3 VisuNet RM Shell - Emerson DeltaV Remote Desktop Connection (DRDC) Client Option

VisuNet Remote Monitors (RM) are industrial-grade thin client workstations that allow you to connect to your process control system. With the integrated Emerson DRDC client, the RM Shell 6 enables a direct connection to virtualized Emerson DeltaV 12 (and above) DCS systems (see figure 1). With the integrated DRDC client, there is no need to use an additional thin client in the safe area (e.g., control room) to connect to the DCS.

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Note

The DRDC client is only required for connecting to a virtualized operator or engineering workstation within the DeltaV virtualization architecture. If you use a conventional, non-virtualized architecture, you can use the Microsoft RDP client for connecting to a DeltaV operator or engineering workstation.
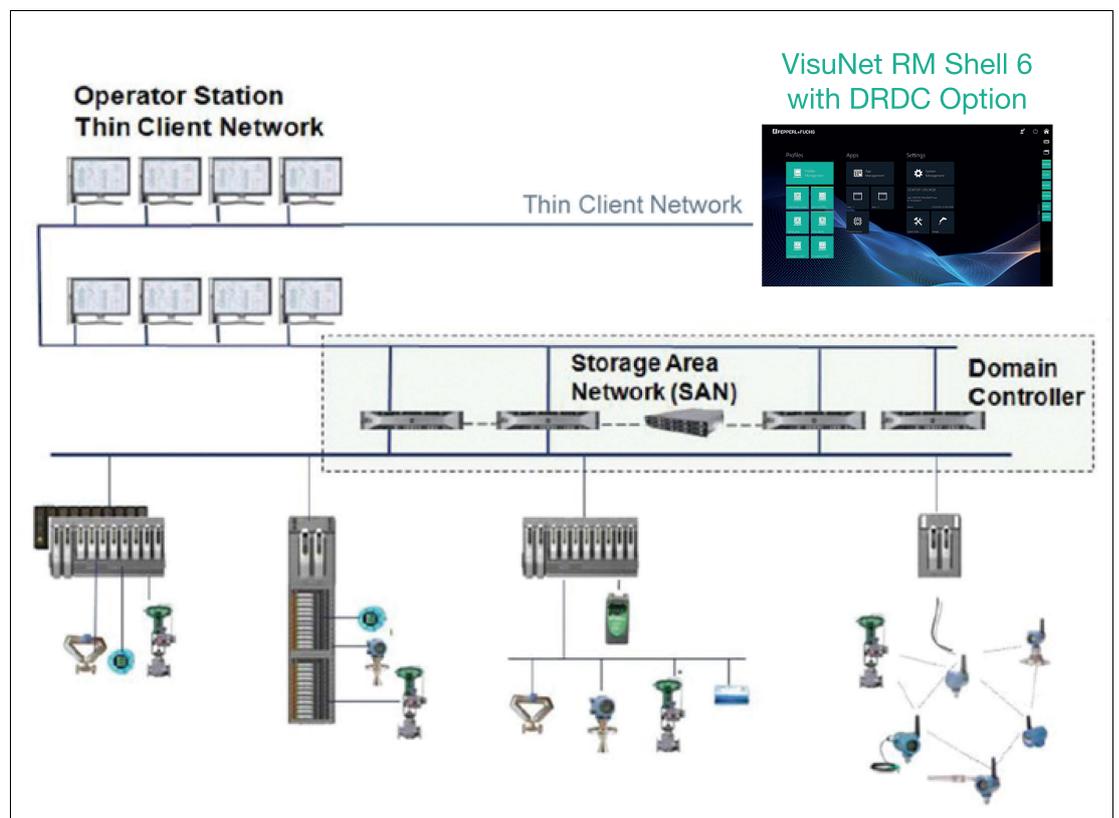
Figure 3.1   VisuNet RM with Emerson DeltaV Remote Desktop Client (DRDC) option

How to set up the VisuNet RM Shell to use the Emerson DeltaV Remote Desktop Connection (DRDC)

1. Activate the DRDC license key.
2. Configure the DRDC settings:
   - Network Redundancy
   - NTP Service
3. Create an Emerson DRDC profile.

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4 VisuNet RM Shell 6 User Interface

The home screen is divided into 6 basic areas:
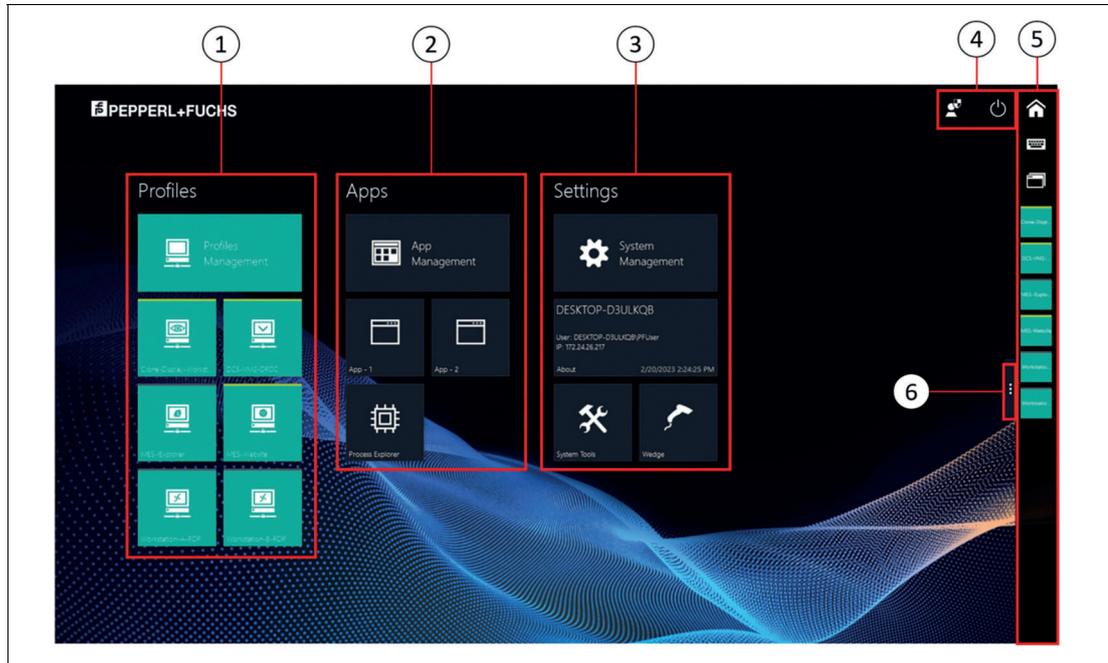
Figure 4.1   VisuNet RM Shell 5 home screen

No.	Description
1	Profiles
2	Applications
3	Settings
4	System functions
5	Smart Task Bar
6	Tab for opening and closing the Smart Task Bar

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Profiles

The Profiles section shows all profiles that have been locally created. Every profile has its own profile tile with information on profile type (e.g., "RDP", "VNC"), profile name (e.g., "RDP - 2") and connecting status (e.g., "connected", "disconnected").

i	**Note**
	Besides the Emerson DRDC profiles, there are several other standard profile types (RDP, VNC). Please refer to the VisuNet RM Shell 6 user manual.

Emerson DRDC	

You find the profile status information in the bottom left corner of each profile tile:

Status	Description	
Idle	Initial status after a profile has been created.	
Connecting	Profile is connecting to host.	
Connected	Profile is connected to a host PC. A green status bar at the top of the profile tile is visible.	

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Status	Description	
Connection failed	While trying to establish a connection, an error occured.	
Auto connect	If an auto connect is enabled, a defined profile connects automatically to a host. The seconds remaining before the next connection retry are counted down in the top right corner of the profile tile. Simultaneously, an animated white status bar at the top of the profile tile is visible.	

Applications

This section shows all applications. The information and features that are accessible in this section vary based on the signed-in user role:

User Role	Description
Operator	Access to profiles (if not limited by a preconfigured auto connect). No access to system settings or applications.
Configuration View	Full access to profiles, system settings, applications, and Windows Explorer.

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System Functions

Icon	Description
	RM Shell Task Switcher The RM Shell Task Switcher allows you to switch between open connection profiles and applications running on an RM / BTC. To open the Task Switcher, click the icon or press the hotkey CTRL+Alt+SCROLL on the keyboard. The Task Switcher shows a window overview of all open remote connections and apps. You can change the application by selecting one of the displayed remote connections or apps. Use the number keys 1 to 9 to switch within the profiles. Click 0 to return to the VisuNet RM Shell Home screen.
	Enter the Configuration View The administrator is allowed to enter the Configuration View to make changes within the settings of the RM Shell.
	On-Screen-Keyboard (OSK) Shows the touchscreen keyboard on the screen.
	Preconfigured power options, such as: • Protect disk and restart • Restart • Shutdown (Some devices need a power reset to be able to boot again) • Turn off display • Switch Windows User: Switch between the admin and operator user role (PFAdmin and PFUser) The power options can be set by the Administrator user role. The Operator user role is only allowed to run the preconfigured options.
	Home Screen Icon Accessable via the Smart Task Bar. Leads back to the Home Screen

Unified Write Filter Status

This area of the home screen indicates whether the unified write filter is enabled. For more information on the unified write filter, . After successfully logging into the Configuration View, the icon appears red. For the Unified Write Filter (UWF), this means that the drive is currently unprotected. The timer below indicates the idle time after which the Configuration View is exited automatically. The idle time can be adjusted in System Management.

Figure 4.2

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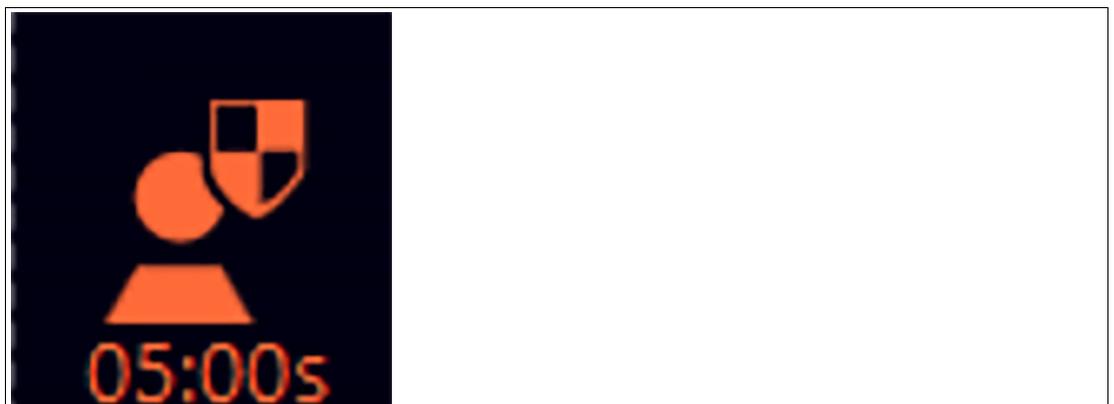
User-Role Information

Within the Shell, the operator is always logged in. However, an administrator can unlock the Configuration View. The Configuration View is active when the Management Apps are displayed. The Profiles Management, App Management and System Management tiles are only visible in the Administrator view.
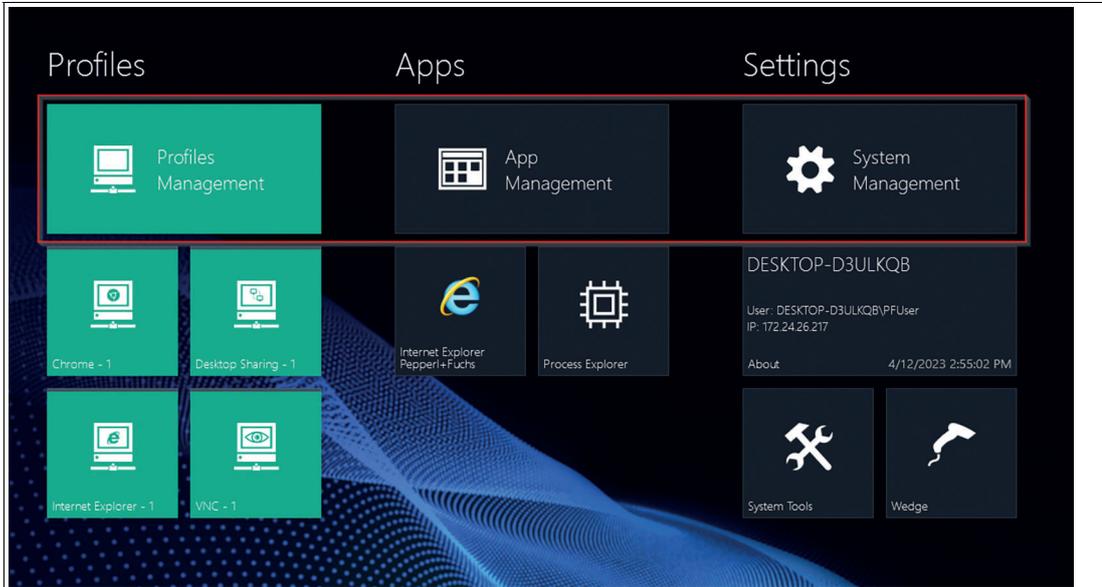
Figure 4.3

Fly-In Messages

At the top-right corner of the home screen, fly-in messages show error messages or status information when certain events occur. Click on the fly-in messages to make them disappear. The messages automatically disappear after 30 seconds.

Figure 4.4

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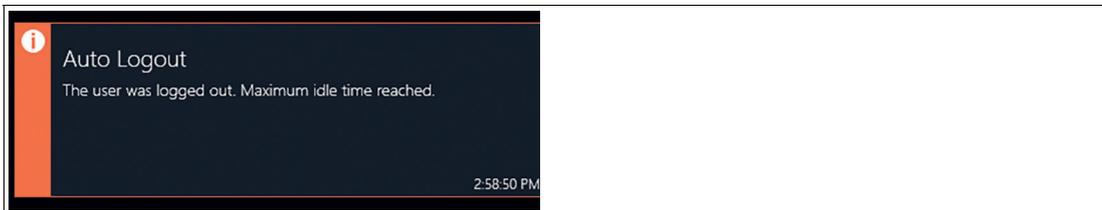
5 System Settings App
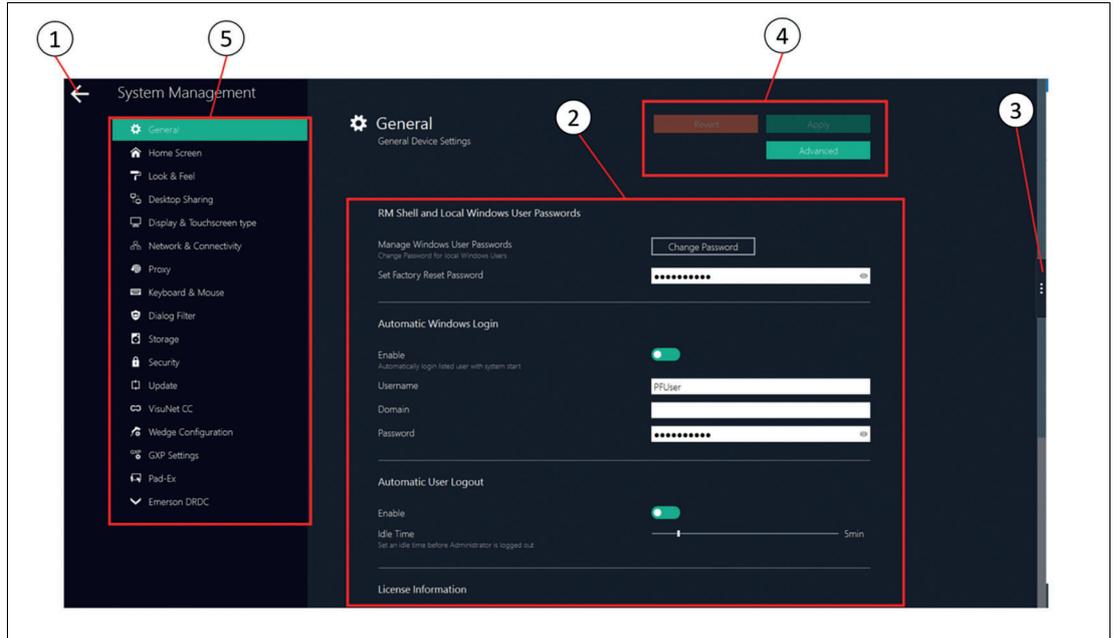
Figure 5.1   Components of the system settings app screen

1	Navigate back to home screen
2	Main Page / content page
3	Smart Task Bar The bar opens when clicking on the three dots. Allows quick access to home screen, On-Screen-Keyboard, Task Switcher and already established connections.
4	• **Apply changes**: write changed settings to the RM. • **Revert**: discard changed settings and restore previous settings. • **Advanced**: Only visible for Administrator user role. This button opens additional Windows®-specific dialog boxes for settings that are not included in the RM Shell but may be of use to Administrators.
5	Navigation bar with all submenus. Each submenu is explained in detail below.

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Note

Disable Write Filter for Persistent Storage of Configurations

To persistently store configuration changes, disable the unified write filter (UWF). Once you have implemented the configuration changes, enable the UWF again to persistently store the changes.

> **Entering System Settings**

1. To enter the system settings, click on the system settings app on the home screen:
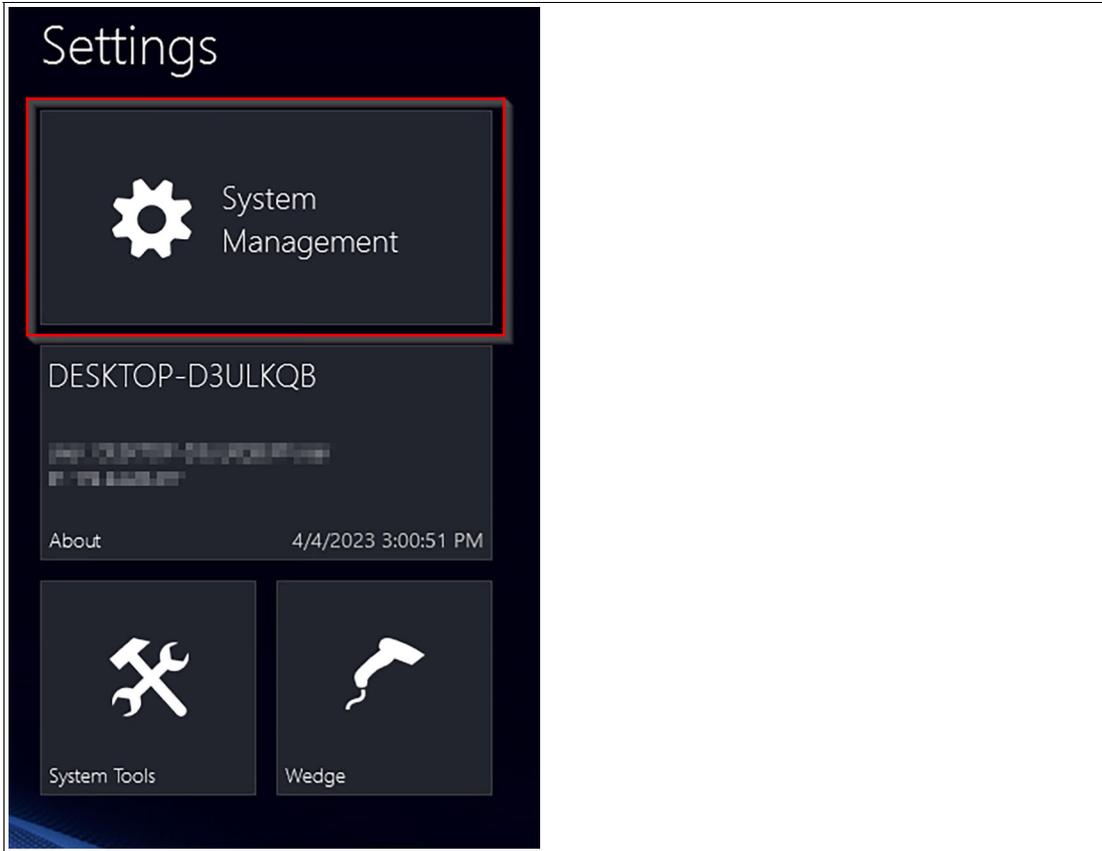
Figure 5.2

Specify your RM settings by using this app. By entering the system settings app, you always start with the general submenu. Besides the "Emerson DRDC" submenu, there are several other submenus.

Note

For more information on the other submenus, refer to the VisuNet RM Shell 6 user manual.

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5.1 General Settings - License Key

Note

For more information on all submenus in the "System Settings" app, refer to the VisuNet RM Shell 6 user manual.

Activating Emerson DRDC License Key

1. Start the RM Shell by logging in as "Administrator".

2. On the home screen, start the "System Management" app.
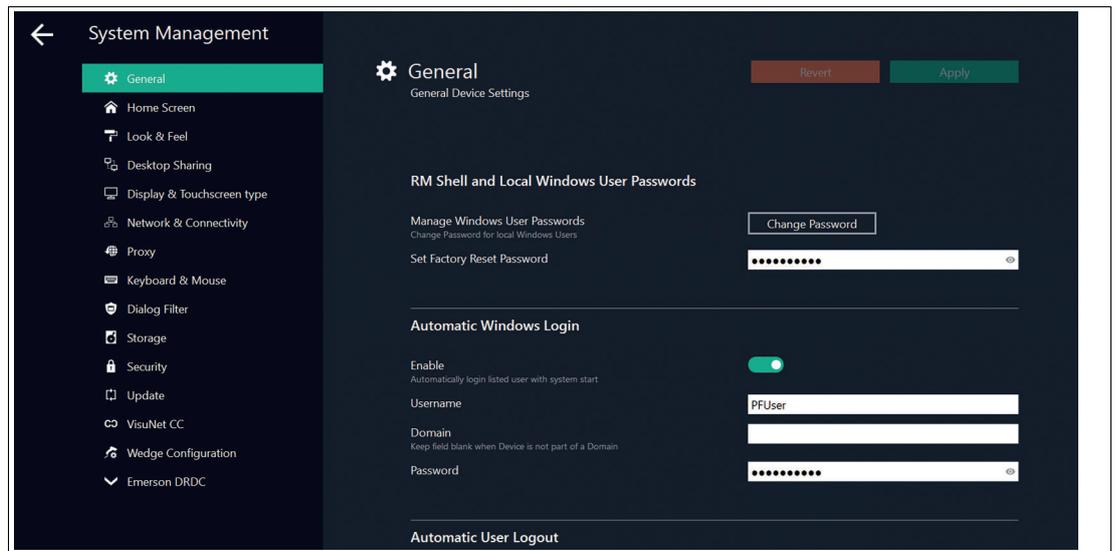
Figure 5.3   General settings - license information

3. In the "General" submenu, scroll down to the "License Information" section.

4. Click on [Add] within the subsection "License Information" and type in a valid DRDC license key.

5. Click "Apply changes".

6. To activate the DRDC license, restart your RM.

5.2 Emerson DRDC Settings

Emerson DRDC Settings There are two main groups of Emerson DRDC settings:

- Network Redundancy: provides access to the Emerson Network Redundancy tool
- NTP Service: provides access to the Emerson NTP (Network Time Protocol) tool

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5.2.1 Emerson DRDC Network Redundancy Setup

i

Note

When you open the "Emerson DRDC settings" for the first time, the "Enable Network Redundancy" toggle switch is grayed out. To activate this feature, set up network redundancy first.

i

Note

The Network Redundancy feature only works when a user is connected to a virtualized DeltaV workstation via DRDC. The Network Redundancy feature must be enabled on the virtualized DeltaV workstation. Refer to the relevant Emerson DeltaV documentation for details on how to configure network redundancy on a virtualized DeltaV workstation.

Configuring Network Redundancy

i

Note

To use the Emerson Network Redundancy tool, you must have each network adapter connected to a separate network subnet. You receive an error if the network names are on the same subnet.

1. On the "Emerson DRDC" submenu in the System Settings App, click "Setup Network Redundancy".

Figure 5.4

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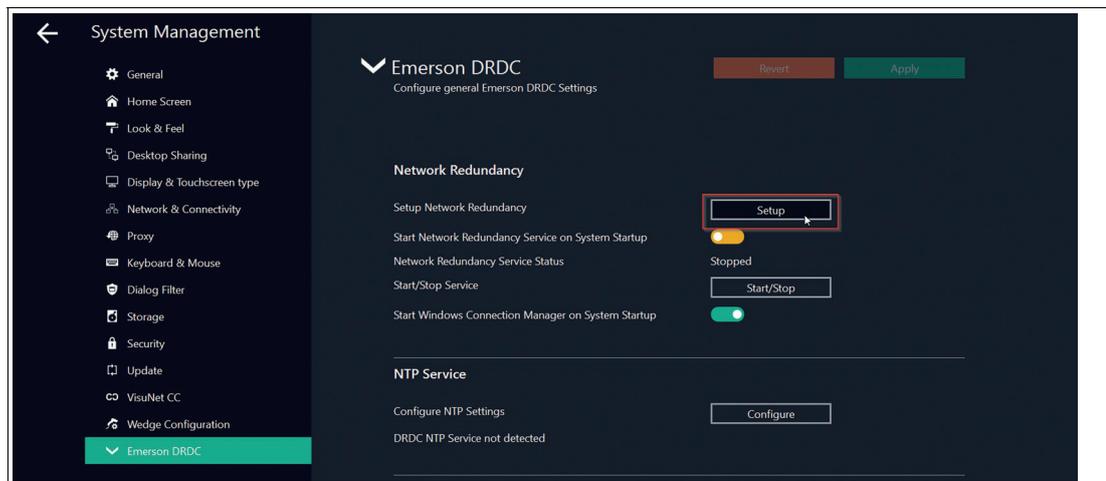
2. Authenticate as an Administrator.

Figure 5.5

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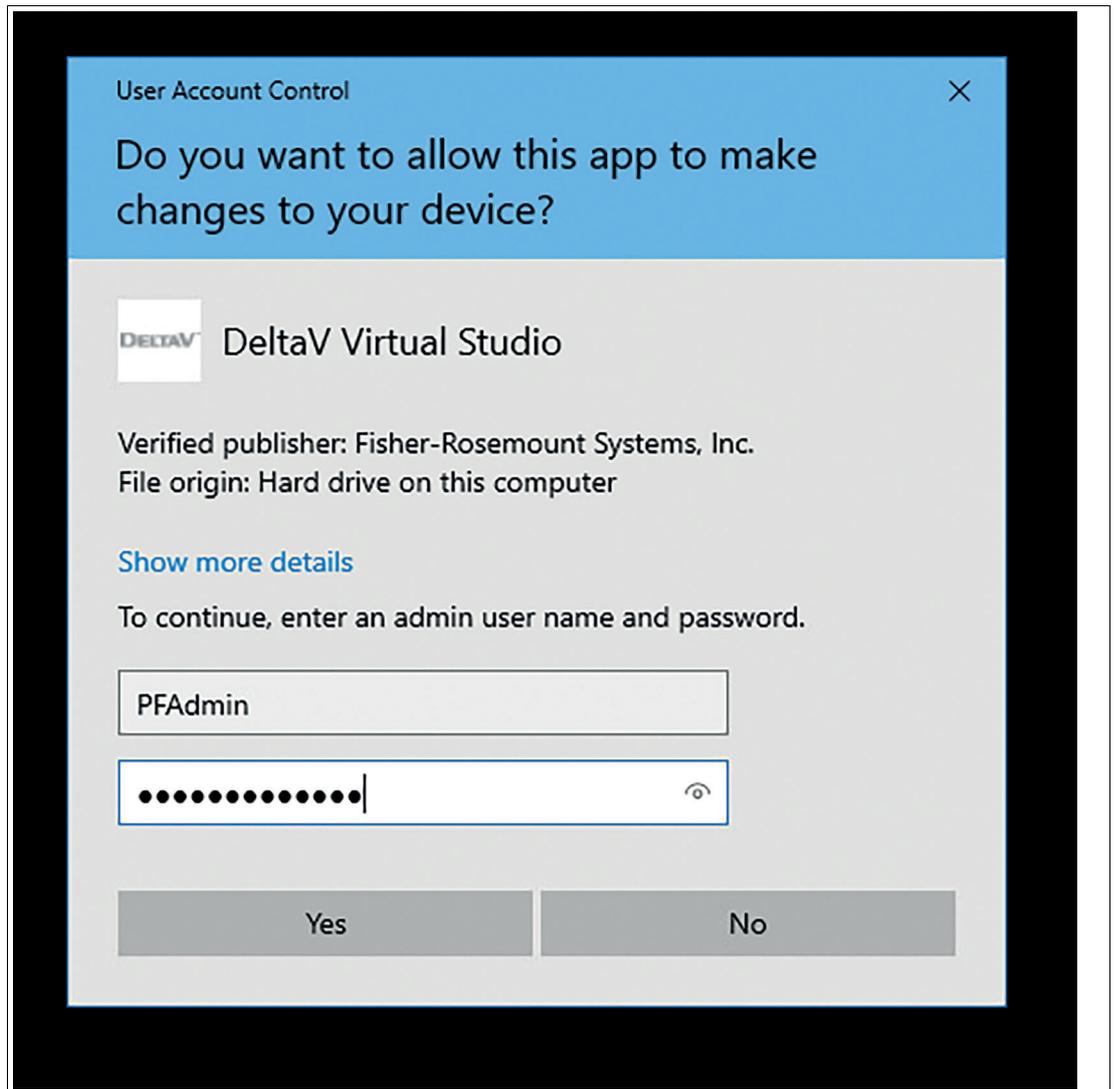
3.   The "Network Redundancy Setup" dialog box opens:
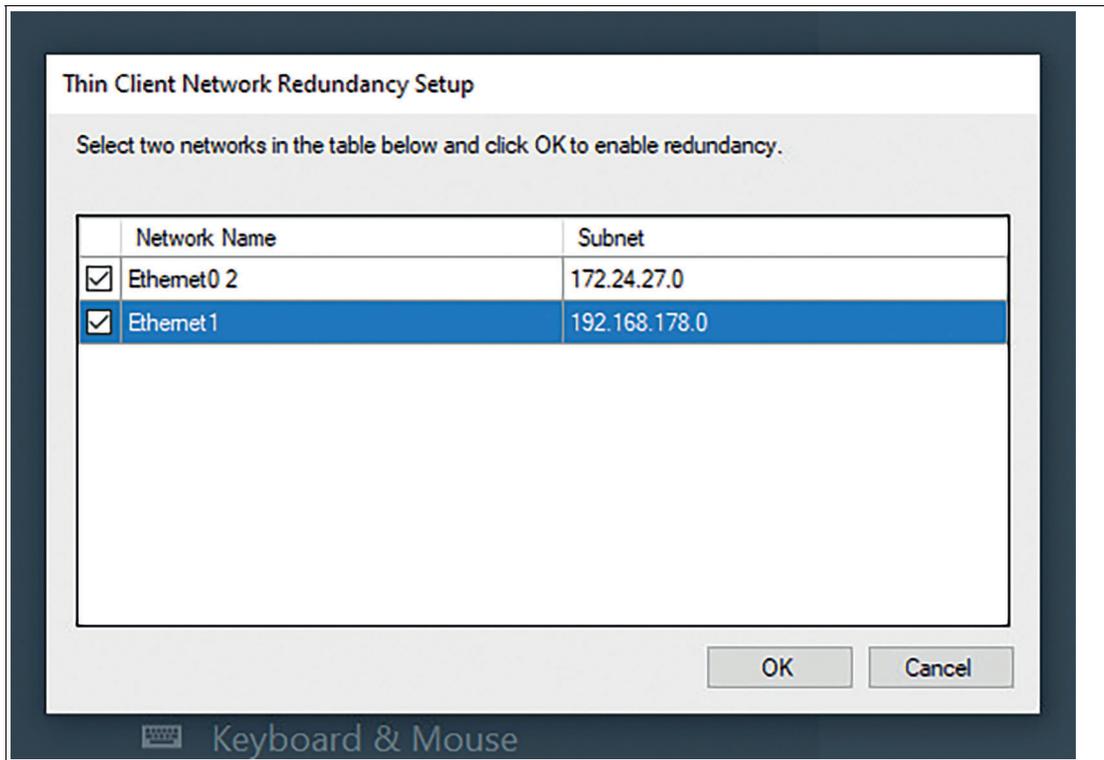
Figure 5.6

4.   Check the box next to each network name and click OK.

↳ The network redundancy setup is completed. You return to the Emerson DRDC settings. The "Enable Network Redundancy" toggle switch is on.

Note

If you unintentionally click next to the window during setup, the Redundancy Setup window will be minimized. The window can easily be opened again via the Smart Task Bar on the right side of the screen. Then click on the Task Switcher to call up the window again.

Note

To switch on the "Network Redundancy" feature, run the Network Redundancy Setup at least one time.

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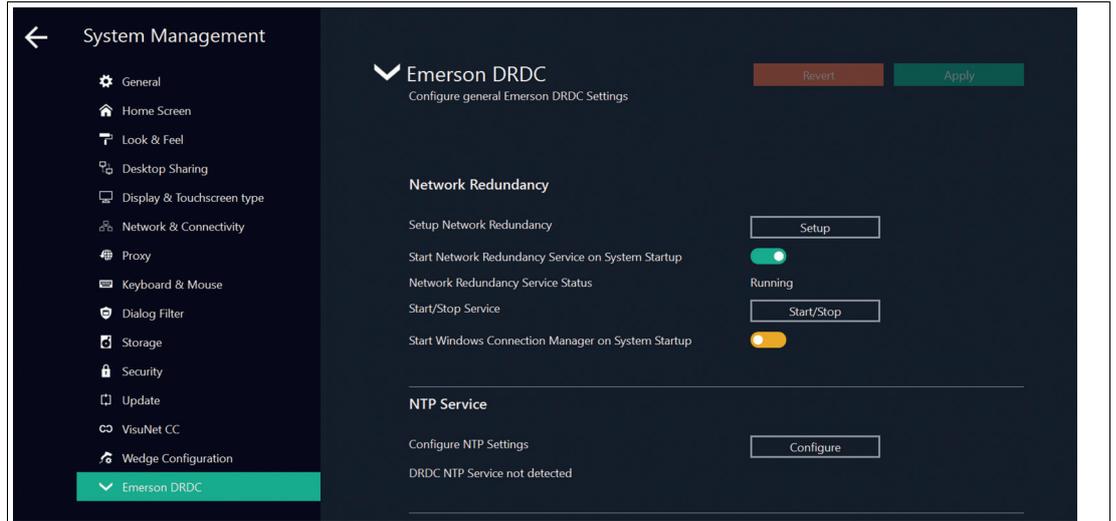
Figure 5.7   Emerson DRDC settings - network redundancy fully configured

Trusted Hosts Setup

The Set Trusted Hosts for Connect to Console application enables you to set up the list of trusted hosts. Refer to the DeltaV Virtualization Planning System Planning and Installation Guide v4.3.0.

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5.2.2 Emerson DRDC Network Time Protocol (NTP)

Configuring NTP Settings

> **i** **Note**
>
> The standard role for a Pepperl+Fuchs VisuNet RM is "Thin Client Listener"; however, this setting should be configured as necessary to fit your specific system configuration.

1. On the "Emerson DRDC" submenu in the System Settings App, click "Configure NTP Settings".

2. Authenticate as an Administrator.
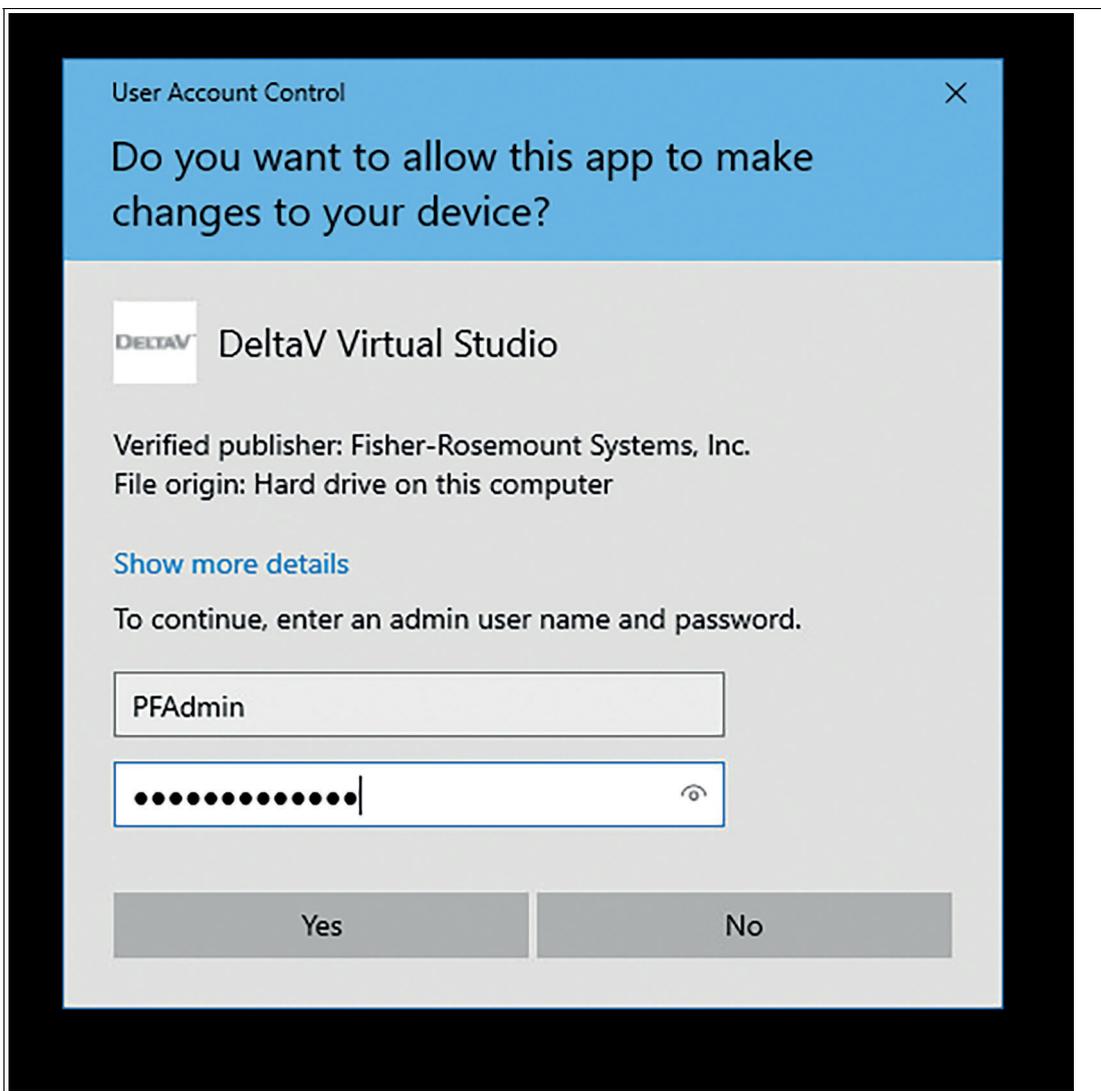
Figure 5.8

3. The "Configure NTP Settings" dialog box opens.

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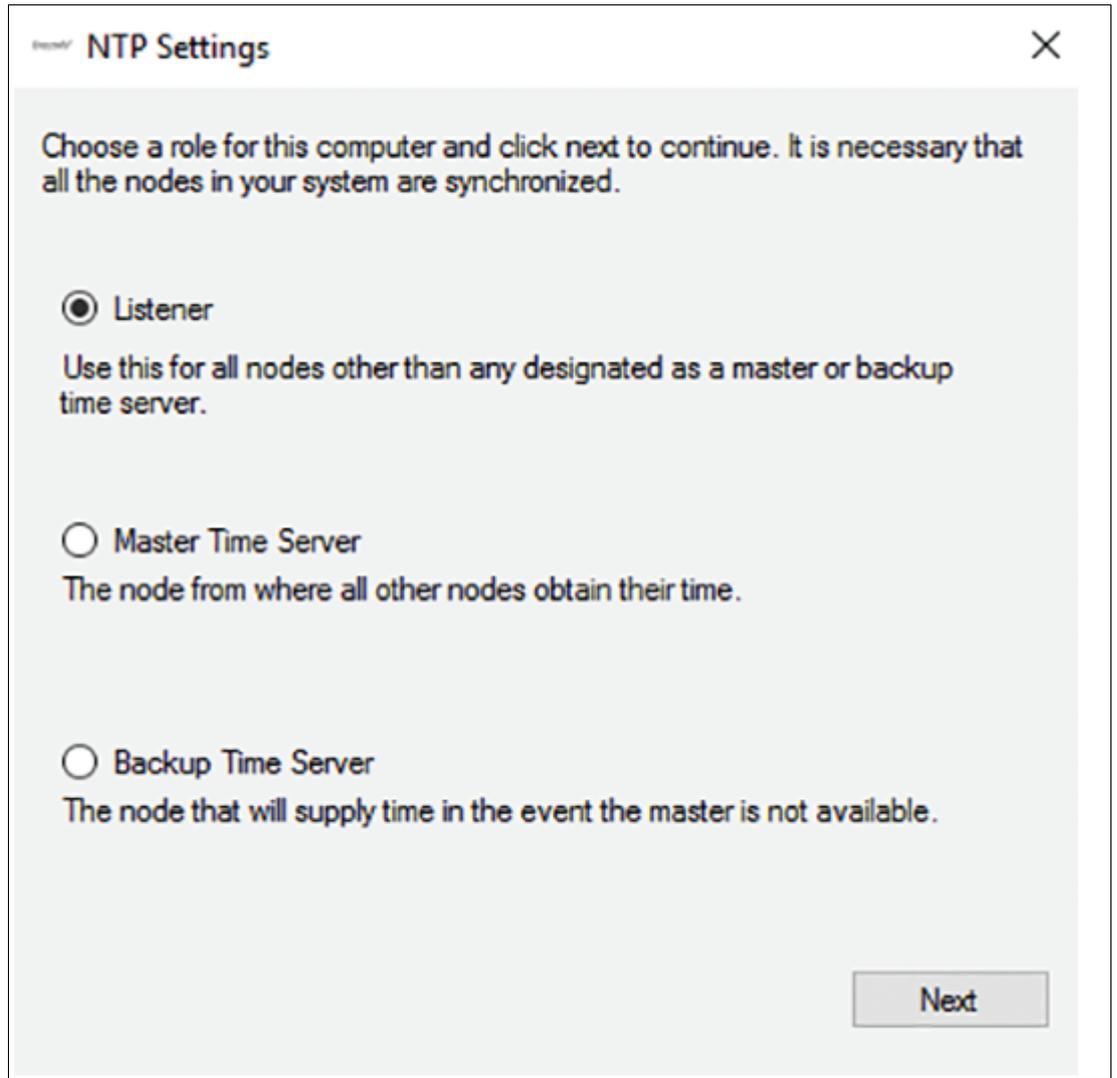
Figure 5.9

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Figure 5.10

4. The standard role for a Pepperl+Fuchs VisuNet RM is "Thin Client Listener". We recommend to use the default settings.

5. After configuring the NTP settings, click "Next".

↳ The "NTP Configuration Finished" dialog box opens.

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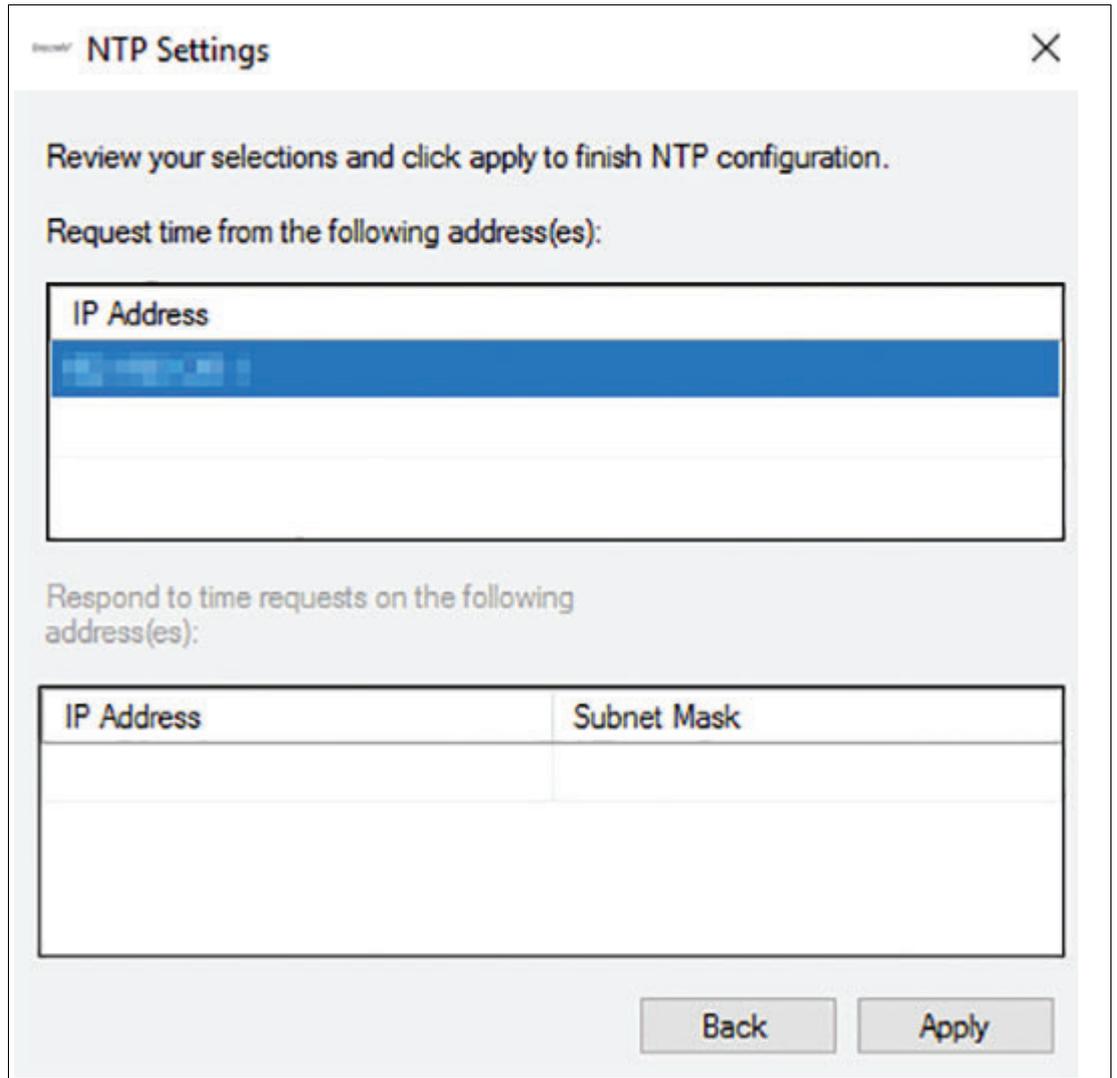
Figure 5.11

6. Click "Apply".

↳ After you have successfully set up the Emerson NTP settings, the "Enable NTP Service" toggle switch on the Emerson DRDC Settings page is toggled to ON.

Note

Please note that in the current version of the "NTP settings" configuration editor, the settings can only be applied to the remote monitor. When you reopen the editor, the actual system settings are NOT displayed in the editor. Only the default values are shown.

6 Profiles Management App

Create and manage remote connection profiles with the Profiles Management App.

RM Shell does not come with any pre-created connection profiles. For this reason, the profiles list will be empty when you start RM Shell for the first time.

> **i**
>
> **Note**
>
> **Disable Write Filter for Persistent Storage of Configurations**
>
> To persistently store configuration changes, disable the unified write filter (UWF). Once you have implemented the configuration changes, enable the UWF again to persistently store the changes.

Figure 6.1

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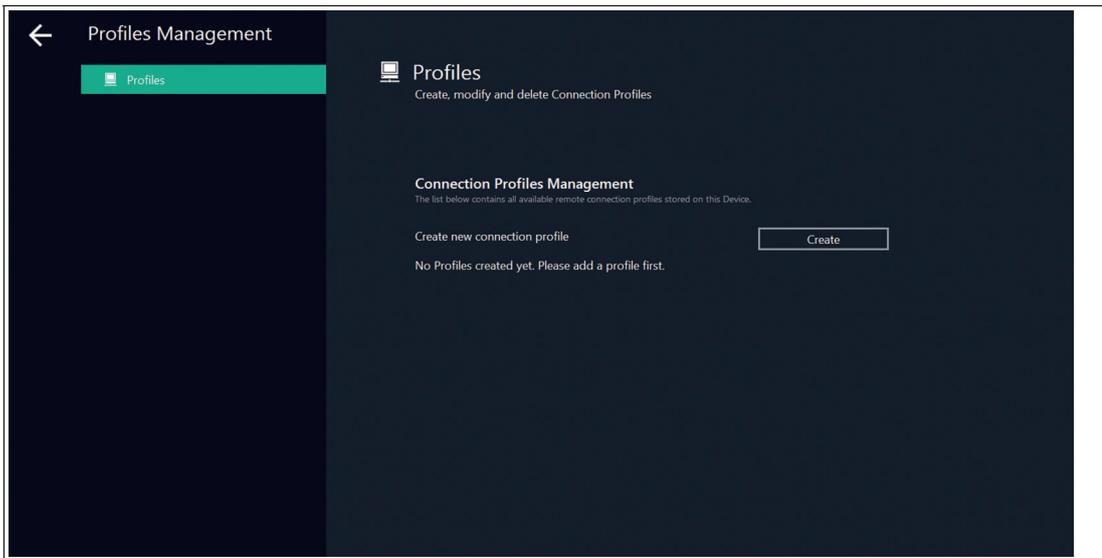
6.1 Creating a new Emerson DRDC Profile

1. To create a new Emerson DRDC profile, click [Create].
2. Select Emerson DRDC and click "OK".
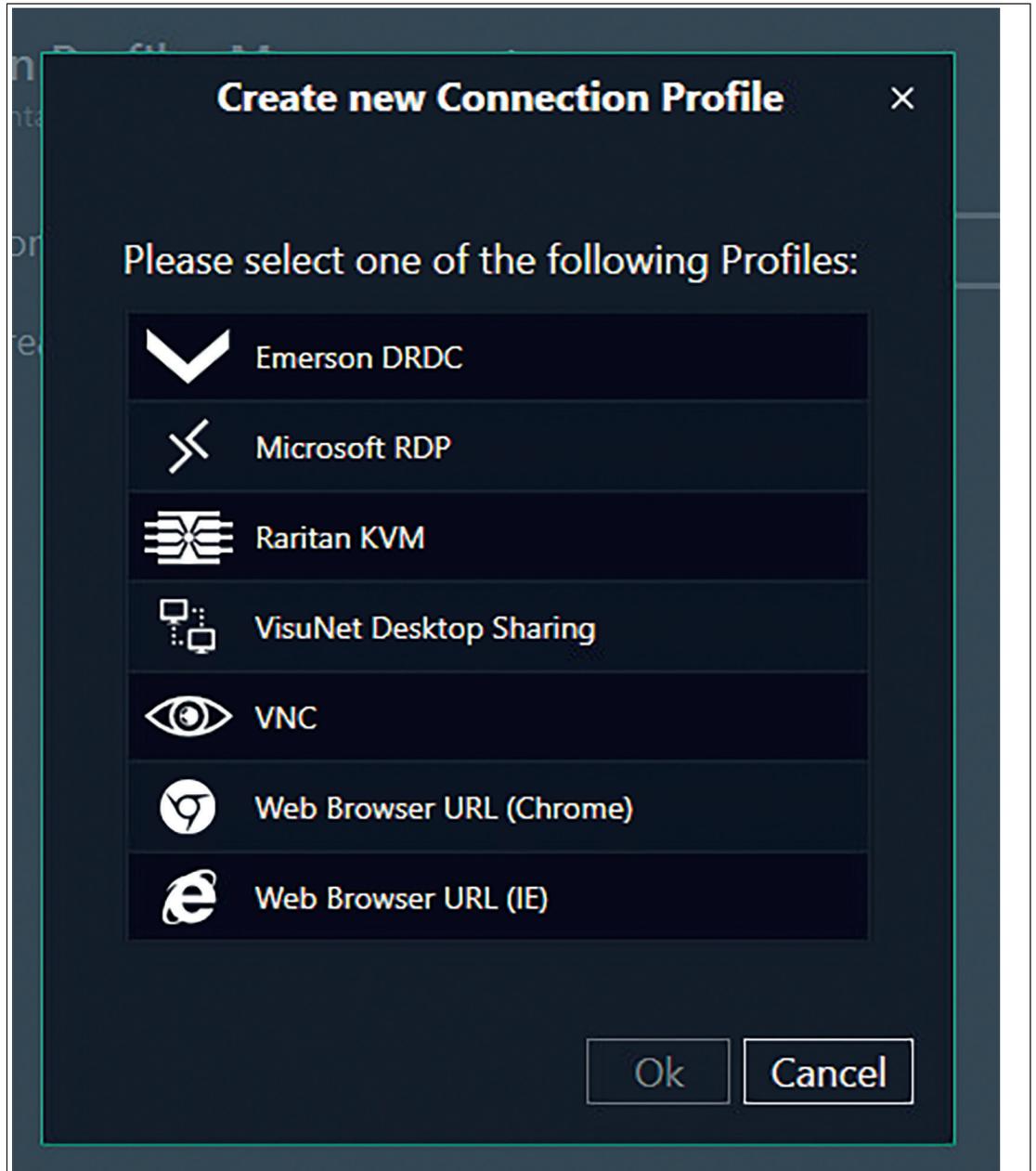
Figure 6.2

↳ The Emerson DRDC profile has been created. The new profile's main settings open.

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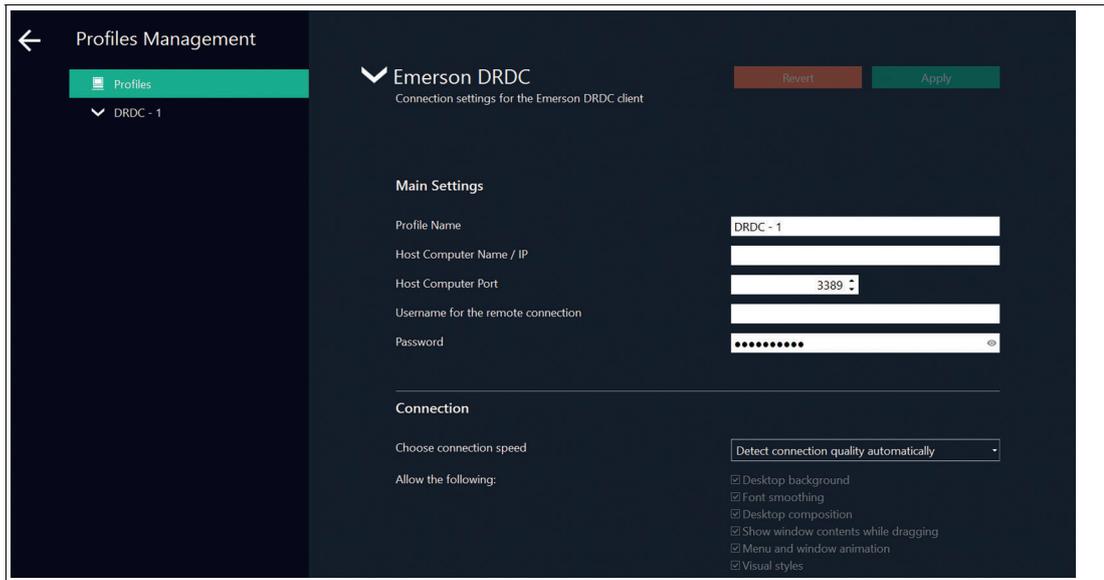
Figure 6.3

Editing the Profile Settings
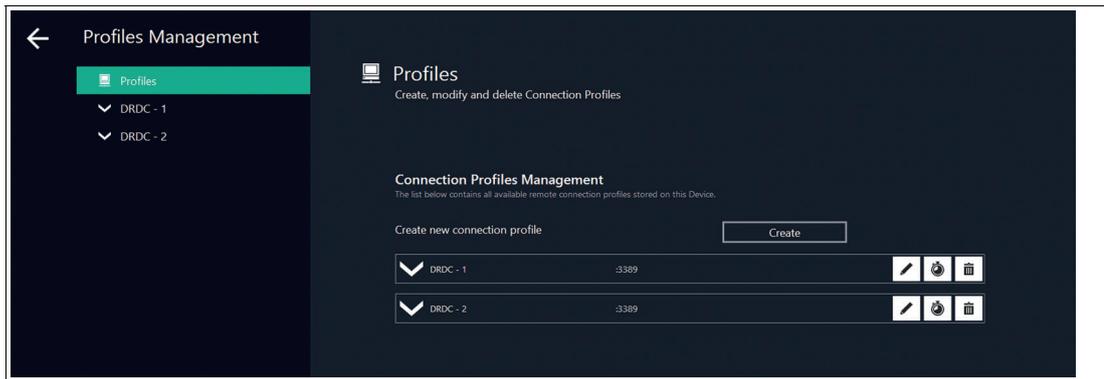
Figure 6.4

1. Go to Profile Settings.

2. To edit the settings of a profile, double-click the requested profile entry in the profiles list or click

3. The settings vary according to the chosen connection type. After you have edited the settings, click .

↳ The changes have been saved.

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Main Settings

Profile Name	Description
Profile Name	Allows you to change the visible name of the selected profile
Host Computer Name / IP	This can be the network name of the host or its IP address.
Host Computer Port	The port of the host. We recommend using the default setting.
Username for the remote connection	Username that is used to log in to the host.
Password	Password that is needed to log in to the host.

Connection Settings

Function	Description
Choose connection Speed	This does not set the connection speed but the User Interface (UI) settings recommended for this speed. Several visual effects are activated or deactivated for the host, depending on the chosen connection speed. The chosen speed may diminish the performance of the RM / BTC
Fast Disconnect Detection by sending Pings to the Host	By enabling this option, the RM constantly sends pings to the host. Possible connection failures will be detected much quicker than usual.
Bulk compression	Determines whether bulk compression is enabled when it is transmitted by RDP to the local computer.
Enable internal DRDC Auto-Reconnect (disable Fast Disconnect Detection)	Enable this option to use the RDP's built-in connection recovery mechanism. This mechanism also tries to reestablish a remote desktop connection when it is disturbed.
Enable Connect to Administrative Console Session	Enable this setting when you want to remotely administer a Windows Server 2008-based server (with or without Terminal Server installed). However, if you are connecting to remotely administer a Windows Server 2008- based server that does not have the Terminal Server role service installed, you do not have to specify the /admin switch. (In this case, the same connection behavior occurs with or without the /admin switch.) For more details, please refer to following website: http://blogs.msdn.com/b/rds/archive/2007/12/17/changes-toremote- administration-inwindows-server-2008.aspx
Block user from closing the connection	Enable this option to prevent a connection window from being closed.

Display Settings

Function	Description
Remote Color Depth	Select the color depth of the remote desktop connection from the dropdown list.
Enable scale down of larger remote screen	Enable this option to ensure that the entire remote desktop is shown in the client by scaling the content down.
Display connection bar	Enable this option to show the connection bar at the top of the screen. The connection bar fades out automatically after a few seconds. It fades in when you move the mouse to the top of the screen.

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Local Resources Settings

Function	Description
Apply Windows key combinations	Select one of the following options from the drop-down list • On this computer: Windows key combinations always apply to your local computer • On the host: Windows key combinations apply to the desktop of the remote computer • Only when using full screen: Windows key combinations apply to the remote computer only when the connection is in full screen mode.
Audio output	Decide whether to play the sound on this computer, on the remote computer or turn it of.
Select local resources and devices for use on the host	Enable the local resources and devices you wish to be available on the host.

Advanced Settings

Function	Description
Server Authentication	• No authentication of the server • Server authentication is required and must complete successfully for the connection to proceed • Attempt authentication of the server. If authentication fails, the user will be prompted with the option to cancel the connection or to proceed without server authentication
Use CredSSP for authentication	Use this option for backwards authentication compatibility with some older RDP servers

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7 App Management

App management allows administrators to add links to Windows® tools and .exe applications, such as antivirus software or standard programs like Windows® Media Player. Administrators can then define a range of settings for each app and determine which user roles have access.

7.1 Setting up VMConnect via a Generic App

Note

Per default HyperV is disabled on all devices.

1. Activate HyperV in the Emerson DRDC System Settings.
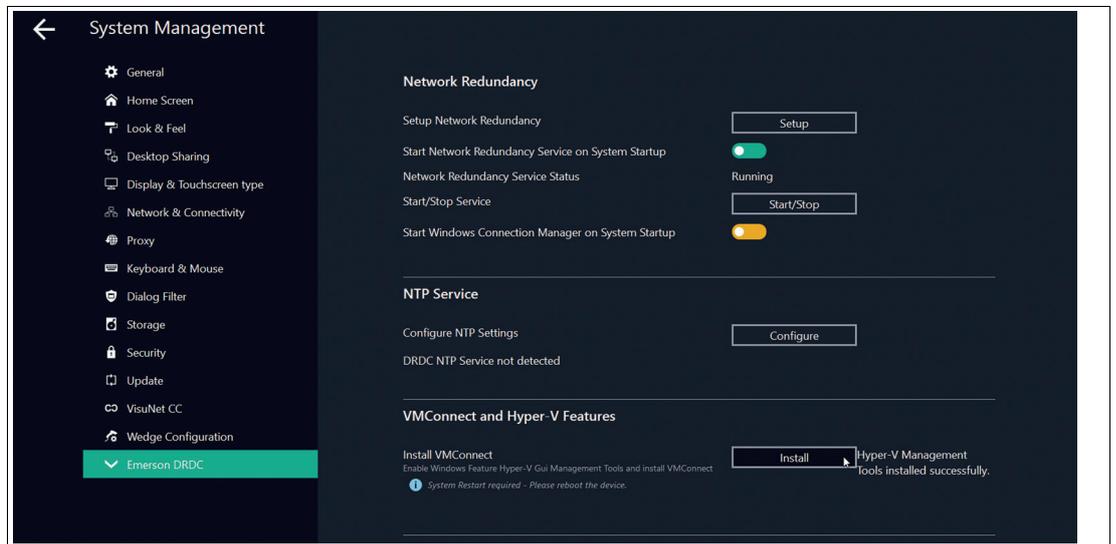
Figure 7.1

Note

For further details or parameters refer to the Microsoft® Support or your Delta-V system integrator.

2. Open Emerson DRDC and Click Install VMConnect in VMConnect and Hyper-V Features.

3. Reboot your system.

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Creating an App for VMConnect
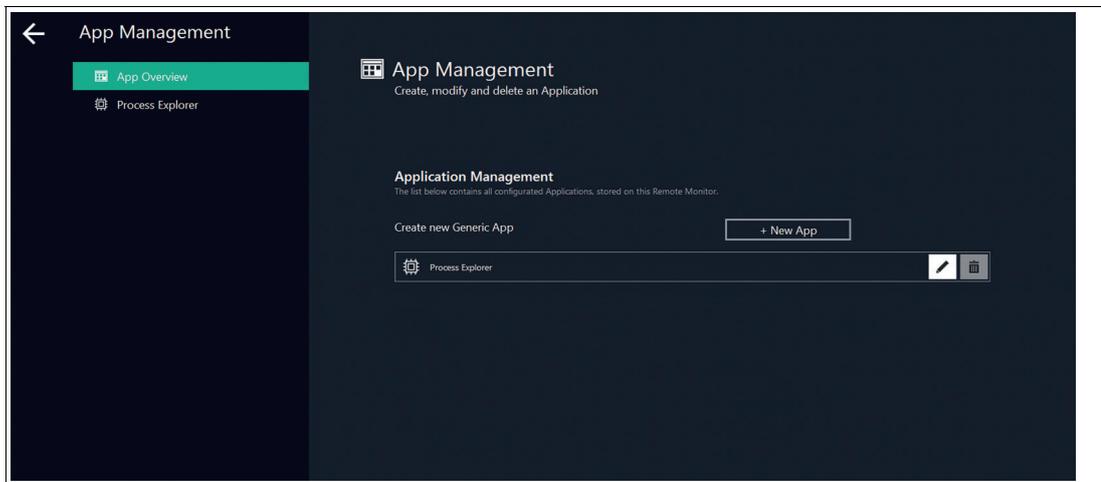
Figure 7.2

1. To create an app, click **+ New App**

2. The "Generic App" window appears. This screen allows you to determine the following settings:
   - **Name:** Choose a name for the app or use the name that is automatically generated.
   - **Application path:** Manually enter the application path: C:\Windows\System32\vmcon-nect.exe
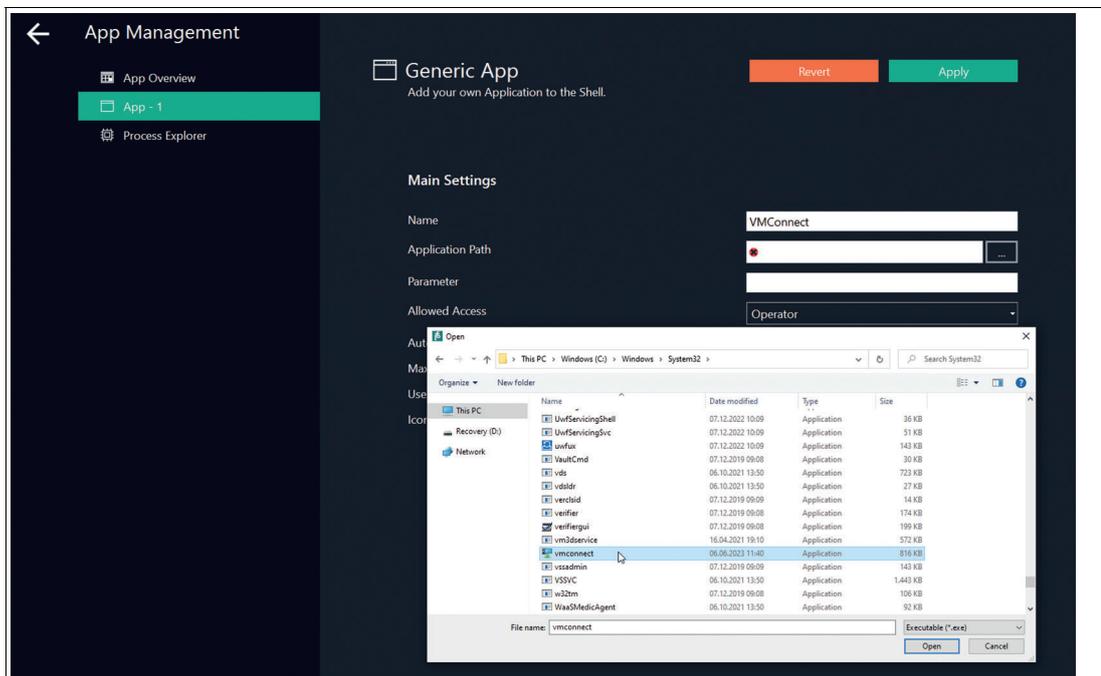
Figure 7.3

   - **Parameter:** Allows additional command-line parameters to be passed when starting the application. Only enter the parameters for the executable in this line. For example, when you want to perform shutdown /s /f /t 0, only add/s /f /t 0 to this line.
     With the default settings the LogIn data is required for each VMConnect connection.

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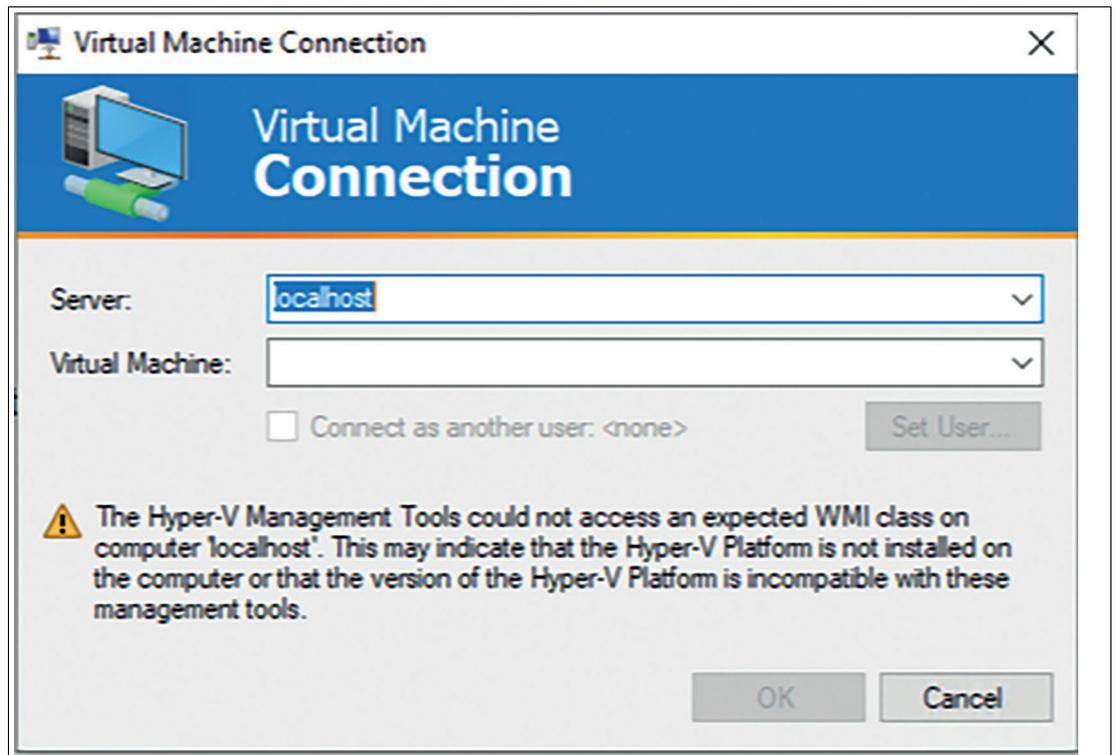
Figure 7.4

	Note
i	Refer to the Microsoft® Hyper-V Settings to set the right parameters for AutoLogIn.

- **Allowed access:** Select which user roles can access the application.
- **Autostart:** Starts app automatically after booting the RM / box thin client.
- **Maximized:** When this option is turned on, the application window is maximized upon opening.
- **Use default icon:** When this option is turned on, a default VisuNet RM Shell icon appears on the user's screen. When this option is turned off, the application's standard icon appears on the user's screen.

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8   Appendix A - Emerson Software License Agreement

Note

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LIMITATIONS OF REMEDIES: Emerson's entire liability and your exclusive remedy shall be: (1) the replacement of any media not meeting Emerson's "Limited Warranty" and which is returned with a copy of your invoice to Fisher-Rosemount Systems, Inc., 1100 W. Louis Henna Blvd., Bldg. I, Round Rock TX 78681-7430, or (2) if Emerson is unable to deliver a replacement media which is free of defects in materials or workmanship, you may terminate this Agreement by returning the program and your money will be refunded.

Note

In no event will Emerson be liable to you for any damages arising out of any causes whatsoever (wether such causes be based in contract, negligence, strict liability, other tort, patent infringement, or otherwise), including any lost profits, lost savings, or other incidental or consequential damages arising out of the use or inability to use such program even if Emerson has been advised of the possibility of such damages, or of any claim by any other party.

GOVERNING LAW: This Agreement, and all matters concerning its construction, interpretation, performance or validity, shall be governed by the laws of the State of Texas, excluding its conflict laws.

EXPORT RESTRICTIONS: Licensee shall comply fully with all laws, regulations, decrees and orders of the United States of America that restrict or prohibit the exportation (or reexportation) of technical data and/or the direct product of it to other countries, including, without limitation, the U.S. Export Administration Regulations.

U.S. GOVERNMENT RIGHTS: The program and related materials are provided with "RESTRICTED RIGHTS." Use, duplication or disclosure by the U.S. Government is subject to restrictions set forth in the Federal Acquisition Regulations and its Supplements.

GENERAL: You may not sublicense, assign, or transfer the license or the program and related materials without the prior written consent of Emerson. Any attempt otherwise to sublicense, assign or transfer any of the rights, duties, or obligations hereunder without such consent is void.

Note

The program is not for use in any nuclear and related application.

You accept the program with the foregoing understanding and agree to indemnify and hold harmless Emerson from any claims, losses, suits, judgments and damages, including incidental and consequential damages, arising from such use, whether the cause of action be based in tort, contract or otherwise, including allegations that Emerson's liability is based on negligence or strict liability.

To the extent that a third party owns and has licensed to Emerson any portion of the program, such third party owner shall be a beneficiary of this Agreement, and shall have the right to enforce its rights under this Agreement independently of Emerson.

Should you have any question concerning this Agreement, please contact your Emerson representative or sales office.

Note

You acknowledge that you have read this agreement, understand it, and agree to be bound by its terms and conditions. You further agree that is is the complete and exclusive statement of agreement between us which spersedes any proposal or prior agreement, oral or written, and any other communications between us relating to the subject matter of this agreement, unless the site at which the program is to be used is covered by a master license agreement between you and Emerson, or another Fisher-Rosemount company, in which case the programs and your use of them shall be exclusively governed by that master license agreement. You agree that Emerson may audit your facility to confirm compliance with the foregoing provisions.

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