United VMS Docker Manager User Guide

Version 1.1

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For additional information visit **https://www.teledyneflir.com/**

The contents of this document are subject to change.

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1.0	April 2023	Version 1.5 initial release
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1 Introduction

This document describes how to install provision and troubleshoot the Docker Desktop and Docker Manager.

These instructions target advanced users, and implementation should only be performed in accordance with FLIR Support and the user IT department.

1.1 Requirements

The following are Docker management requirements:

- **UVMS License**
- **Image Files**
- **Docker Desktop for Windows**
- **Centralized SQL**
- **Virtualization, Windows Subsystem for Linux (WSL), and Hyper-V**

1.1.1 UVMS License

The Directory accesses a UVMS license. The container upgrade process erases this license. Save the UVMS license in a safe, known, easily accessed location for reloading this file after upgrading.

1.1.2 Image Files

Only use image files provided by your Support.

1.1.3 Docker Desktop for Windows

Docker Desktop is an application for building and sharing of containerized applications and microservices. It includes Docker components (i.e. Docker Engine, Docker CLI client, Docker Compose, Docker Content Trust), Kubernetes, and Credential Helper.

Note: Docker Desktop must reside on the host machine where all the containers reside.

You can review Docker Desktop system requirements and download Docker Desktop for Windows **here**.

For more information about Docker Desktop, see the **Docker Desktop overview** page.

1.1.4 Centralized SQL

Dockers must work with centralized SQL.

1.1.5 Virtualization, Windows Subsystem for Linux (WSL), and Hyper-V

Hyper-V lets you run multiple operating systems as virtual machines on Windows. It specifically provides hardware virtualization, i.e. each virtual machine runs on virtual hardware. Hyper-V lets you create virtual devices such as virtual hard drives, virtual switches, etc. which can be added to virtual machines.

For additional Hyper-V information, see **Install Hyper-V on Windows 10**.

Your machine must have virtualization, WSL, and Hyper-V features enabled for Docker Desktop to function correctly.

Note: Restart your machine after enabling features for optimal performance.

Follow these steps:

1. From the computer where the Docker Manager is installed, navigate to the **Windows Features** dialog.

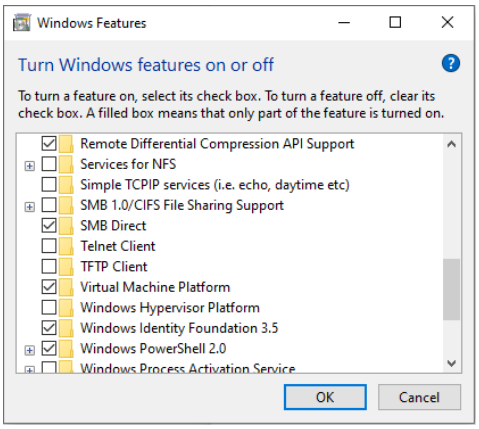

Figure 1 – Windows Features Dialog

2. Locate and enable the following features (if not already enabled):
   - **Hyper-V**
   - **Virtual Machine Platform**
   - **Windows Subsystem for Linux**
3. Click **OK** to exit and save the selections.

Notes on Hyper-V:

- Docker Desktop requires that you install and enable Hyper-V and the Hyper-V Module for Windows Powershell. The Docker Desktop installer enables it for you.
- Docker Desktop requires the following CPU hardware features to use Hyper-V:
  - Virtualization, and Second Level Address Translation (SLAT), (also called “Rapid Virtualization Indexing (RVI)”).
    On some systems, you must enable Virtualization in the BIOS. While the required steps are vendor-specific, the BIOS option is generally called “Virtualization Technology (VTx)” or something similar.
    Run the *systeminfo* command to verify all required Hyper-V features.
    See **Pre-requisites for Hyper-V on Windows 10** for more details.
- To install Hyper-V manually, see **Install Hyper-V on Windows 10**.
  A post installation restart is required for optimal Docker Desktop performance.

  Follow these steps:

  a. From the **Start** menu, type **Turn Windows features on or off** and press **Enter**.

  The **Windows Features** dialog displays.

  b. Verify that the **Hyper-V** feature is enabled, and click **OK**.

2 Installation

UVMS 9.xx requires you to install a Docker engine and a Docker-compose tool. The latest Docker Desktop for Windows 10 include these requirements bundled in a single installation.

Note: The Linux version requires some specific actions, which also depends on the Linux version in use.

This section contains the following information:

- **Docker Desktop Installation**
- **UVMS Docker Manager**

2.1 Docker Desktop Installation

This section describes how to download and install the Docker Desktop.

Follow these steps:

1. Download and install Docker Desktop (see **Docker Desktop for Windows**).
2. Click **OK** to accept the configuration settings, and Docker Desktop unpacks files.

   Note: A computer restart may be necessary for a clean installation. You are prompted as such in this situation.
3. Review and accept the service agreement to start Docker Desktop.
4. Click **Start** to view a tutorial, or **Skip tutorial** to view the Docker Desktop.

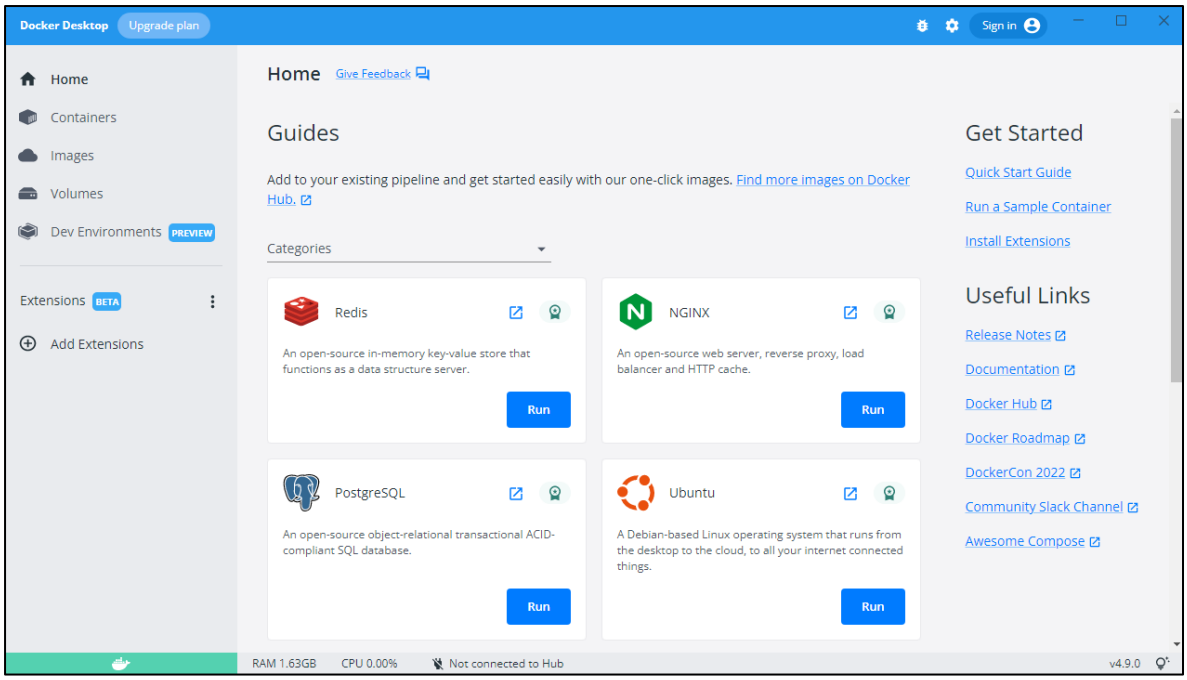

Figure 2 – Docker Desktop Main Screen

5. In the Windows taskbar notification area, locate and right click the **Dockers Desktop** icon , and select the **Switch to Windows containers…** option.

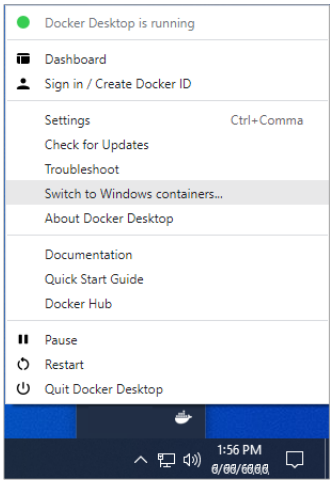

Figure 3 – Switch to Windows containers Option

A **Switch to Windows container** dialog displays informing you about the platform change.

Figure 4 – Switch to Windows container Dialog

6. Click **Switch**.

   The Docker Desktop is now running for Windows containers. You have configured the Docker Manager.

2.2 UVMS Docker Manager

The UVMS Docker Manager enables you to install or upgrade a Directory and EDB Servers, and/or an Archiver. You can choose to upgrade or install new Directories and EDB, and Archivers.

Note: The UVMS Docker Manager is a portable application (no installation is required).

Do the following:

- Download/copy the DockerManager folder onto your local computer, locate and double click the **DockerManager.exe** file.

  The **Docker Manager** tool displays.

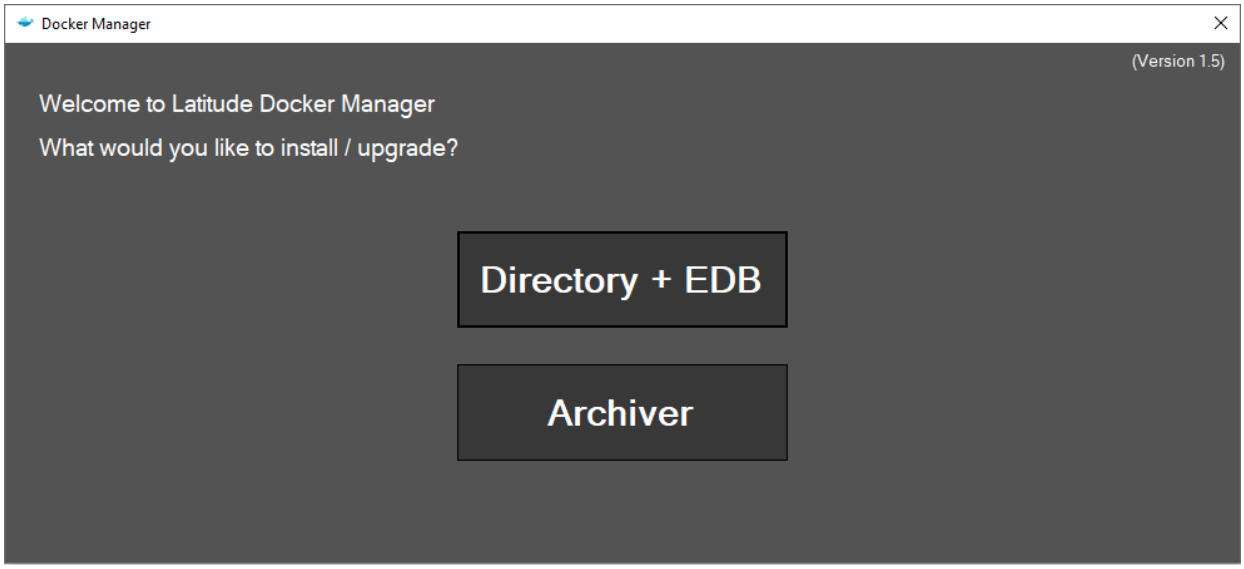

Figure 5 – Docker Manager Main Dialog

3 Install a Dockers Directory and EDB

This section describes how to install and upgrade a Dockers Directory and an Event Distributor (EDB) Server. The Directory manages the system configuration data, alarm management, incident management, and failover.

- **Install New Directory and EDB**
- **Upgrade a Dockers Directory and EDB**

The Event Distributor (EDB) Server is an interface for passing events and actions between different components, as well as between the system and external devices and programs. By assigning event processing to a dedicated server or servers, the system's ability to handle a large number of events is significantly enhanced. The latter option may be required for systems that handle a very large amount of events. The number of EDBs used by a system depends on its network topology and related latency considerations.

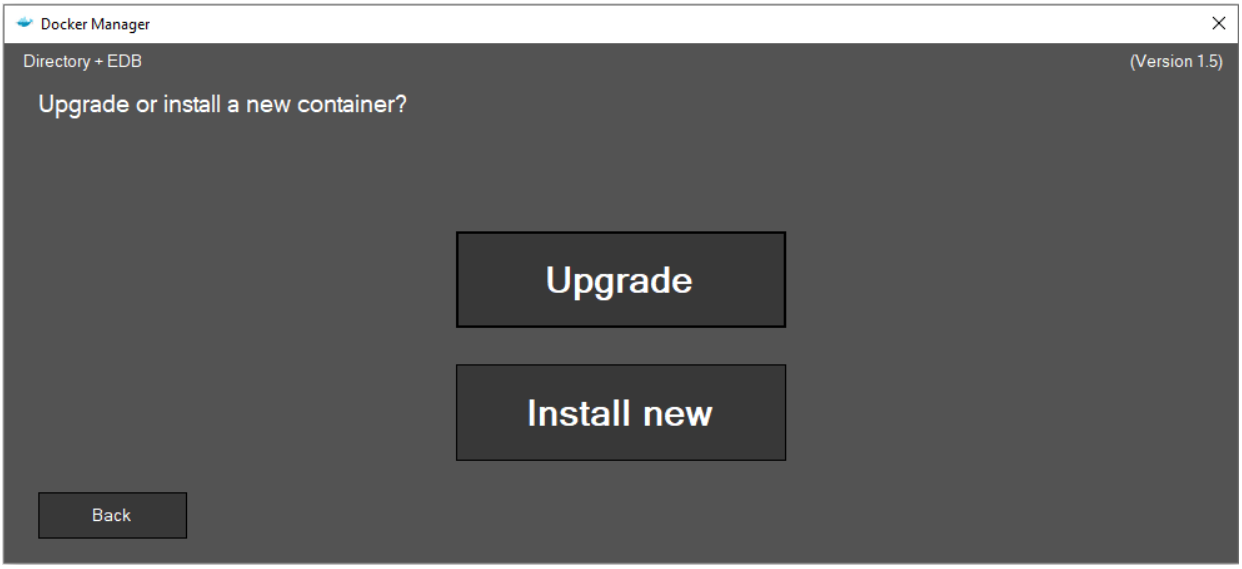

Figure 6 – Docker Manager Directory Upgrade / Install new Dialog

3.1 Install New Directory and EDB

This procedure describes how to install a new Directory and EDB.

Follow these steps:

1. In the Docker Manager, select the **Directory + EDB** option.

   You are prompted to upgrade or install a new container.

2. Click the **Install new** option.

   You are prompted to use an existing image or install a new image.

   Note: When you install a new image, you access, decompress, and load the supplied.tar file. This process consumes resources and time. When you use an existing image, it is easily accessible having already been accessed and decompressed.

3. Click the **Install new image** option.

   A **Select image file** dialog displays.

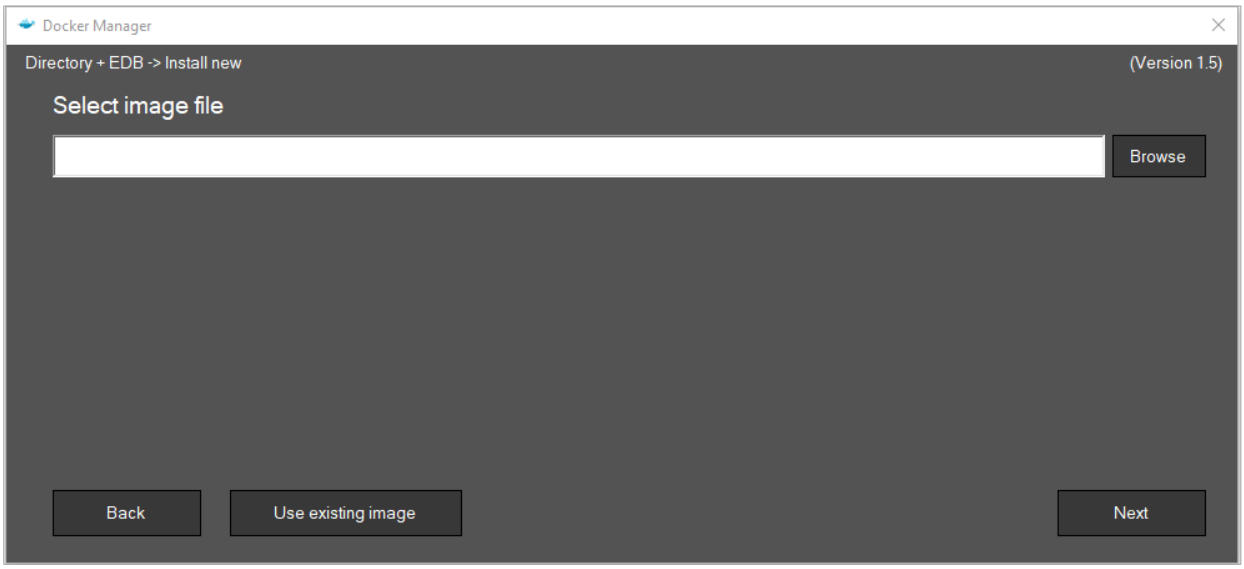

Figure 7 – Select Image File Dialog

4. Locate and load an image file (Directory), and click **Next**.

   The **Volume (Storage)** and **Data-base** dialog displays.

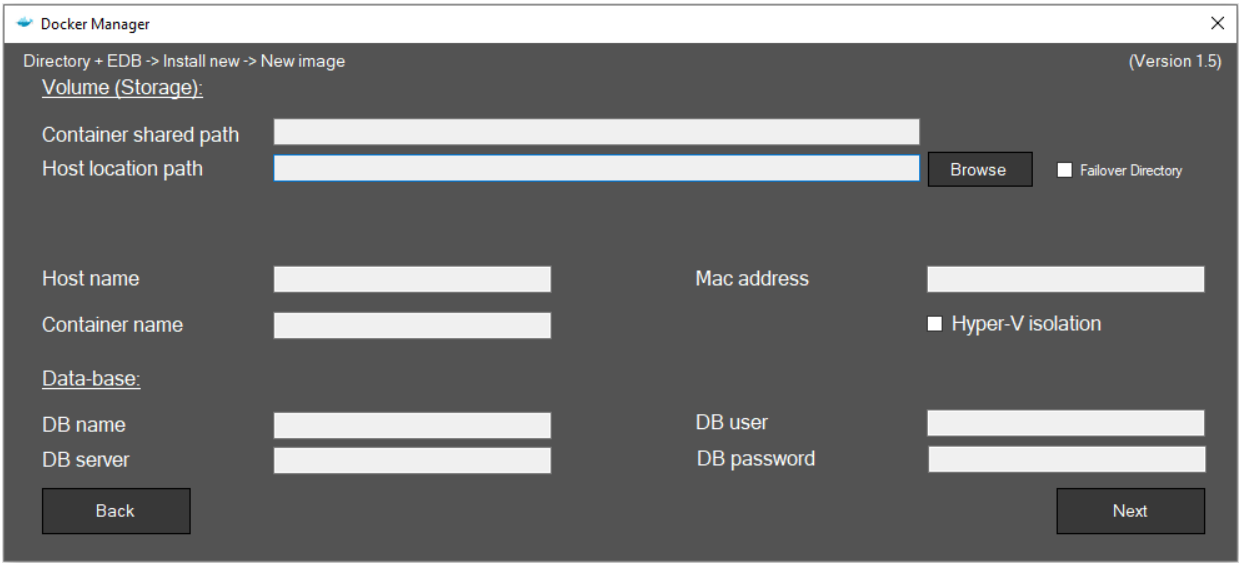

Figure 8 – Docker Manager Volume and DB Dialog

5. Provide values for the following fields:

   Volume (Storage):

   - **Container shared path** – The container location (default).
     Example: C:\archive
   - **Host location path** – The Directory location.
     Example: C:\volume or \\Root\Folder
   - **Browse** – Navigate and load the selected container via the file explorer.

- **Failover Directory** – Select this parameter when using a Failover Directory (FOD). When a system has multiple servers, there is a primary and secondary server. When the primary server is activated, the secondary server is in standby mode. When the primary server is not working the secondary server is activated.
- **Host name** – The Directory host name (when blank, the system assigns a name).
- **Container name** – The container name.
- **Mac address** – Not in use, leave blank.
- **Hyper-V isolation** – When selected, the system supports multiple container instances run concurrently on a host.

Data-base:

- **DB name** – The DB name on the server.
  Examples: PORTAL5_xxxx (Directory)
  LoggerDb_xxxx (Archiver)
- **DB server** – The DB server address.
- **DB user** - The user name for the DB.
- **DB password** - The DB password.

6. Click **Next**.

   The network parameters dialog displays.

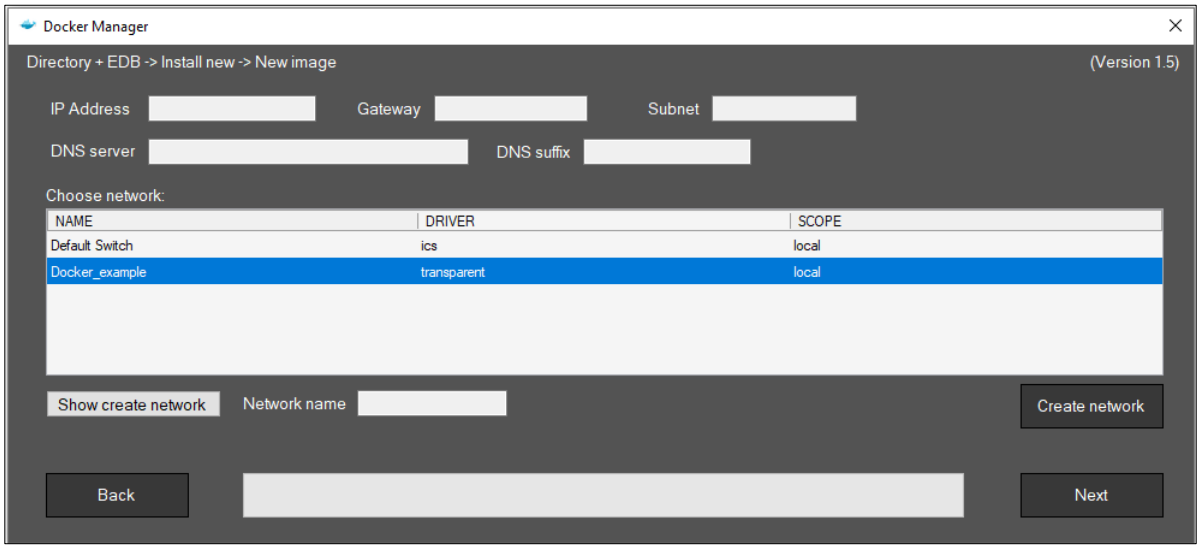

Figure 9 – New Image Network Parameters

7. Provide values for the following fields (if blank):
   - **IP Address** – A static IP Address is required.
   - **Gateway** – A default Gateway Address is required.
   - **Subnet** – A default Subnet Address is required.
   - (optional) **DNS server** – DNS server network settings.
   - (optional) **DNS suffix** - The DNS addresses.
     Example: flir.com
   - **Show create network** – When selected, additional fields display to create a network, according to the settings above.
   - **(optional) Network name** – Set the network name.
   - **(optional) Create network** – Create the new network as named in the Network name field.

8. Select the network in the table where the **DRIVER** is listed as **transparent**, and click **Next**.

   The system creates, activates, and runs the container, and a message displays that the container is running.

9. Click **Exit** to exit the program.

3.2 Upgrade a Dockers Directory and EDB

This procedure is currently unavailable.

4 Install an Archiver

This section contains the following:

- **Install New Archiver**
- **Upgrade an Archiver**

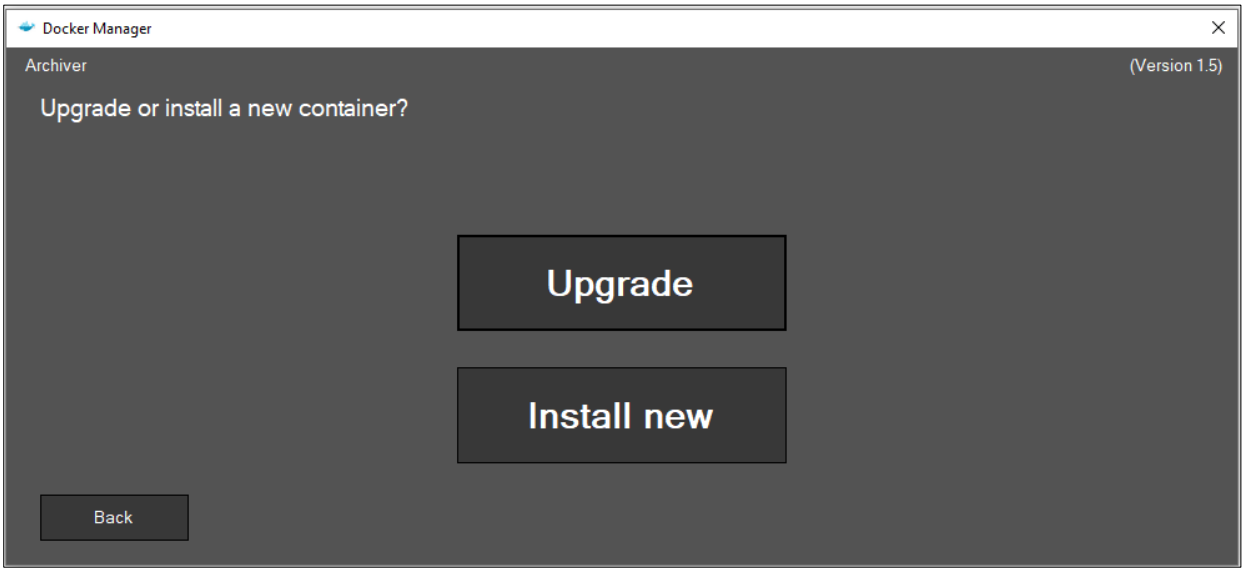

Figure 10 – Docker Manager Archiver Upgrade / Install new Dialog

4.1 Install New Archiver

In this procedure you install a new Archiver. When you install a new image, you decompress a TAR file.

Follow these steps:

1. In the Docker Manager, select the **Archiver** option.
   You are prompted to upgrade or install a new Archiver.
2. Click the **Install new**, then the **Install new image** option.
   A **Select image file** dialog displays.

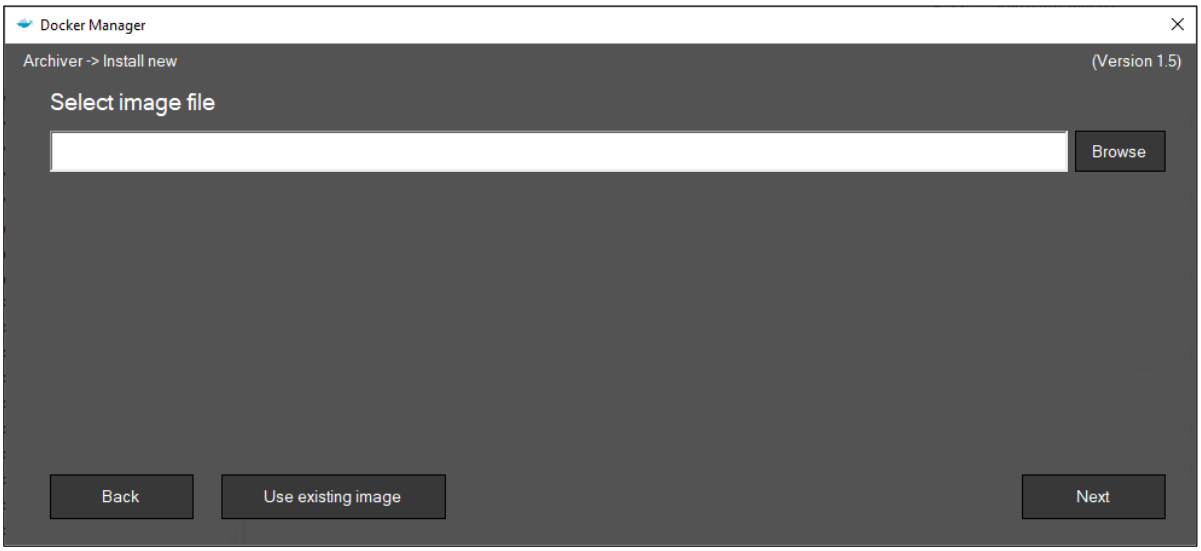

Figure 11 – Select Image File Dialog

3. Locate and load an image file (Archiver), and click **Next**.

   The **Volume (Storage)** and **Data-base** dialog displays.

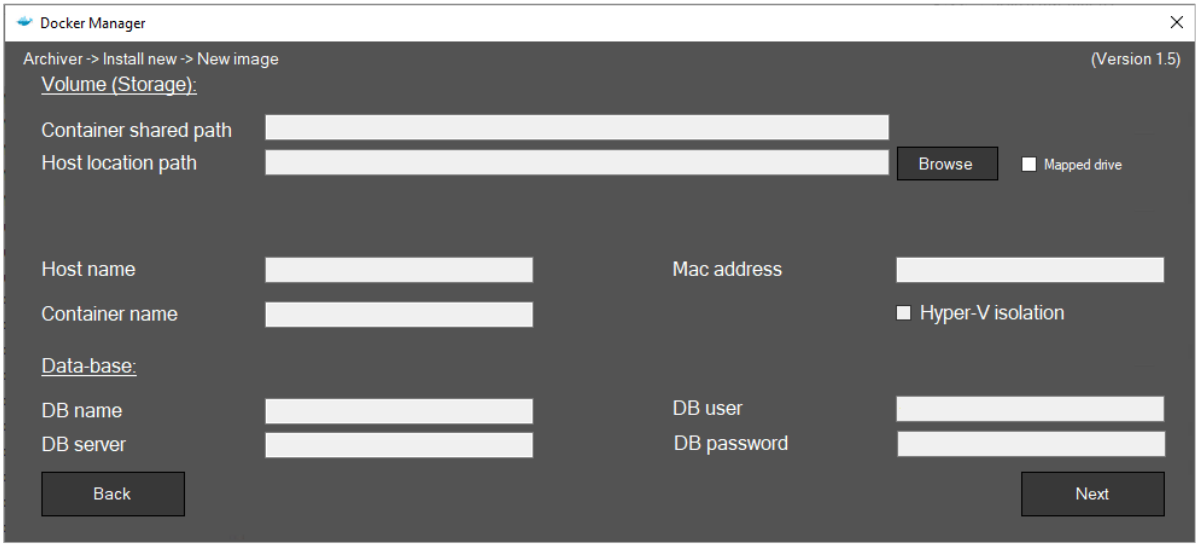

Figure 12 – Install New Archiver Image Dialog

4. Provide values for the following fields:
   Volume (Storage):
   - **Container shared path** – The container location (default).
   - **Host location path** – The Directory location.
   - **Browse** – Navigate and load the selected container via the file explorer.
   - **Mapped drive** – Select this parameter when using a mapped drive.
   - **Host name** – The Directory host name (when blank, the system assigns a name).
   - **Container name** – The container name.
   - **Mac address** – Not in use, leave blank.
   - **Hyper-V isolation** – When selected, the system supports multiple container instances run concurrently on a host.

Data-base:

- **DB name** – The DB name on the server
  Examples: PORTAL5_xxxx (Directory)
  LoggerDb_xxxx (Archiver)
- **DB server** – The DB server address.
- **DB user** - The user name for the DB.
- **DB password** - The DB password.

5. Click **Next**.
   The network parameters dialog displays, where you set various network parameters such as IP address, Gateway, Subnet, etc.

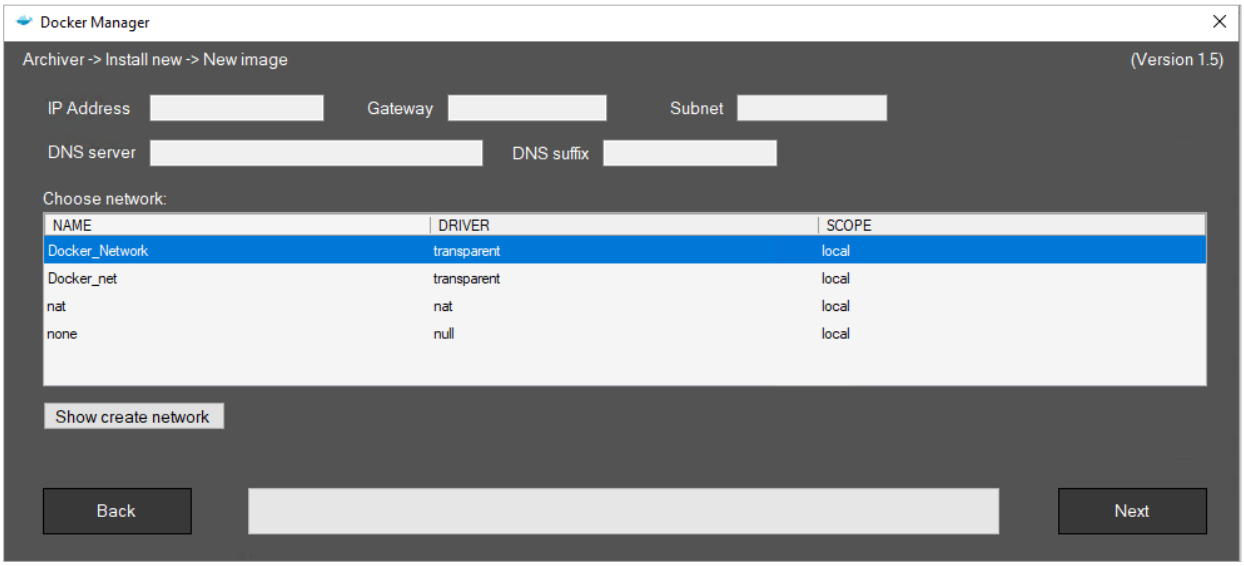

Figure 13 – Archiver New Image Network Dialog

6. Provide values for the following fields (if blank):
   - **IP Address** – A static IP Address is required.
   - **Gateway** – A default Gateway Address is required.
   - **Subnet** – A default Subnet Address is required.
   - (optional) **DNS server** – DNS server network settings.
   - (optional) **DNS suffix** - The DNS addresses.
     Example: flir.com
   - **Show create network** – When selected, additional fields display to create a network, according to the settings above.
   - **(optional) Network name** – Set the network name.
   - **(optional) Create network** – Create the new network as named in the Network name field.
7. Click **Next**.
8. Select the network in the table where the **DRIVER** is listed as **transparent**, and click **Next**.

   The system creates, loads, activates, and runs the container, and a message displays that the container is running.

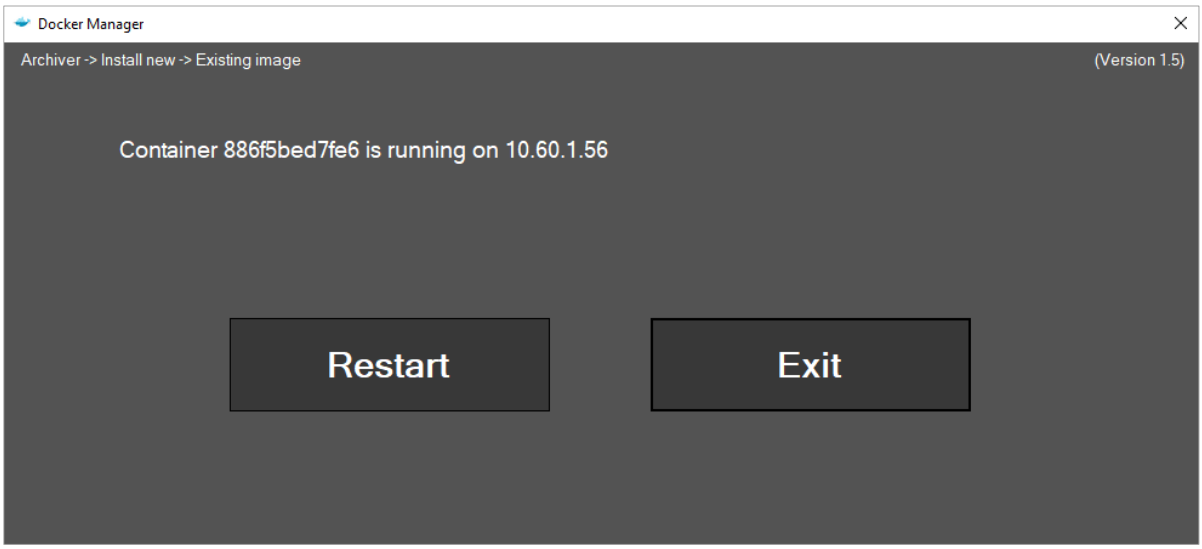

Figure 14 – Archiver Successfully Installed Dialog

9. Click **Exit** to exit and close the UVMS Docker Manager
   or
   click **Restart** to restart the UVMS Docker Manager.

   You have installed a new Archiver.

4.2 Upgrade an Archiver

This procedure describes how to upgrade an Archiver.

Follow these steps:

1. In the Docker Manager, select the **Archiver** option.

   You are prompted to upgrade or install a new container

2. Click the **Upgrade** option.

   The **Select container for upgrade** dialog displays where you can select an existing container.

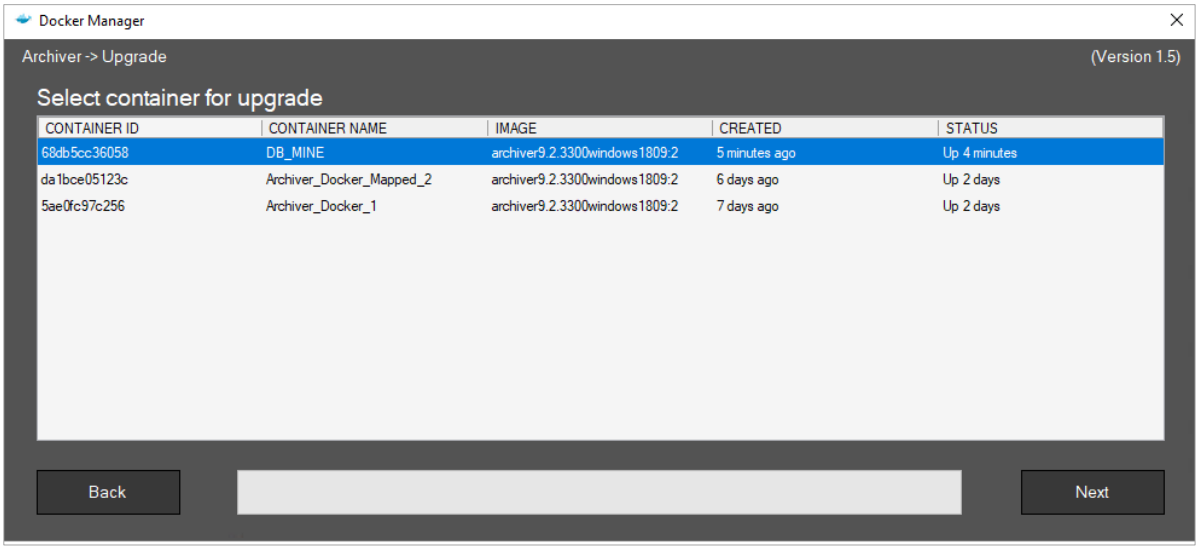

Figure 15 – Select Container for Upgrade Dialog

3. Select an existing container and click **Next**.

   The Docker Manager performs processes like stopping the container, copy files, start containers, stops SafRun service, exports files.

4. You are prompted to use an existing image or install a new image

   Note: When you install a new image, you program accesses, loads, and decompresses the file, which consumes resources and time. When you access an existing image, the file has already been accessed, loaded, and decompressed, therefore utilizing less resources and time.

   The **Existing Images** table displays with available images.

5. Locate and load an image file (Archiver), and click **Next**.

   The **Volume (Storage)** and **Data-base** dialog displays.

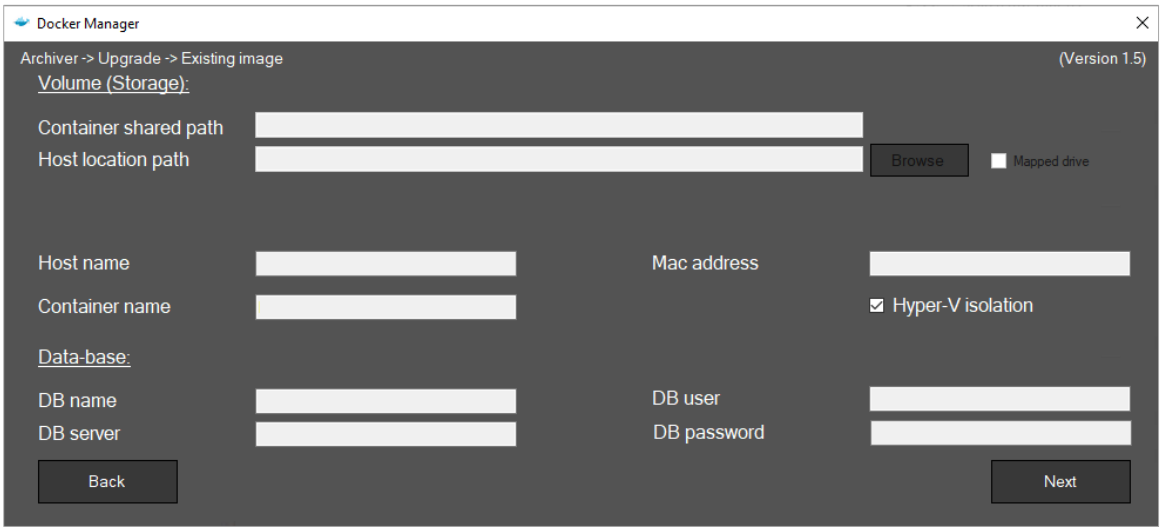

Figure 16 – Archiver Volume Dialog

6. Provide values for the following fields:

   Volume(Storage):

   - **Container shared path** – The container location (default).
   - **Host location path** – The Directory location.
   - **Browse** – Navigate and load the selected container via the file explorer.
   - **Mapped drive** – Select this parameter when using a mapped drive.
   - **Host name** – The Directory host name (when blank, the system assigns a name).
   - **Container name** – The container name.
   - **Mac address** – Not in use, leave blank.
   - **Hyper-V isolation** – When selected, the system supports multiple container instances run concurrently on a host.

   Data-base:

   - **DB name** – The DB name on the server

   Examples: **PORTAL5**_xxxx (Directory)

   LoggerDb_xxxx (Archiver)

   - **DB server** – The DB server address.
   - **DB user** - The user name for the DB.
   - **DB password** - The DB password.

7. Click **Next**.

   The network parameters dialog displays where you set various network parameters such as IP address, Gateway, Subnet, etc.

8. Provide values for the following fields (if blank):
   - **IP Address** – A static IP Address is required.
   - **Gateway** – A default Gateway Address is required.
   - **Subnet** – A default Subnet Address is required.
   - (optional) **DNS server** – DNS server network settings.
   - (optional) **DNS suffix** - The DNS addresses. **Example:** flir.com
   - **Show create network** – When selected, additional fields display to create a network, according to the settings above.
   - **(optional) Network name** – Set the network name.
   - **(optional) Create network** – Create the new network as named in the Network name field.

9. Choose a network from the list of available networks in the table where the **DRIVER** is listed as **transparent**, and click Next.

   The Archiver upgrade image is processed. The system creates, loads, activates, and updates the Archiver, and a message displays that the container is running.

Note: You must reload a UVMS license when you upgrade an Archiver.

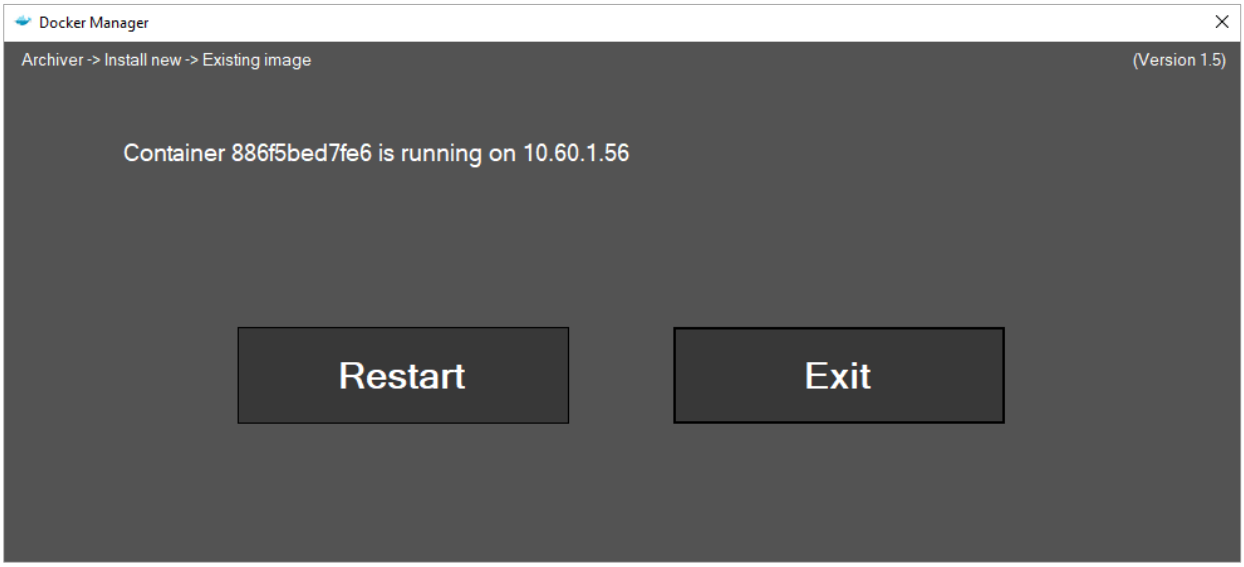

Figure 17 – Archiver Successfully Upgraded Dialog

10. Click **Exit** to exit and close the UVMS Docker Manager
    or
    click **Restart** to restart the UVMS Docker Manager.

    You have installed a new Archiver.

5 Troubleshooting

This section contains Docker Manager troubleshooting issues and offers solutions.

Note: For more information about Dockers and Dockers for Windows, see the following:

- **Frequently asked questions**
- **Frequently asked questions for Windows**

Access Denied

You can run into an access denial issue when trying to start a Docker engine.

One method used to solve this is to add your logon account to Windows group, docker-users. Docker for Windows automatically creates this group when you install Docker for Windows.

Follow these steps:

1. Logon to Windows as an Administrator, and navigate to Windows Administrator Tools.
2. Locate and select Windows Computer Management.

   Or

   Skip **Step 1**, right click on Computer Management, select More, and select the **run as administrator** option and provide Administrator password.
3. Double click docker-users group and add your account as member.
4. Add your account to Hyper-V Administrator.

   This was added when you installed Docker for Windows.
5. Log off from Windows and log back on.

   For more information on logs, see **Logs and troubleshooting.**
6. Click on the Windows icon on bottom left and start **Docker for Windows**.

   This starts Docker windows service.
7. Start Windows PowerShell and type “docker”.

   Docker version 17.09.1-ce, build 19e2cf6 displays. This is the latest version.

   Your access denial issue should be solved. Follow docker getting started to configure docker daemon.

6 Disclaimer

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