

QVI System Controller Guidelines for IT Managers

Introduction

Each QVI dimensional measurement system includes a system controller running the Windows™ operating system. This controller is not simply a computer. It is a dedicated controller that provides communication and control of the QVI measurement system.

QVI understands the desire to use the system controller as a general-purpose computer. However, this is a dedicated system controller and must be treated as such.

Please read this document in its entirety to minimize the adverse effects on the intended use of the QVI measurement system. Your primary thought when it comes to the system controller should always be, “**What is the minimum modification that can support the final integration into my environment?**”

Before Making Any Changes

Verify the system functions according to specifications before making any changes to the system controller.

If modifying the system controller renders the system inoperable, a restore of the hard drive may be required. Care must be taken to avoid the loss of user data during a hard drive restore.

Screen Savers

We recommend that you **do not** use screen savers. If you choose to use a screen saver, make sure it does not put the hard drive to sleep.

NOTE: MeasureMind 3D, version 12.60.20 and lower, and Measure-X, version 2.x and lower, do not support screen savers.

Computer Games

Do not install computer games on the system controller. Computer games require significant system resources, and they are notorious for changing video drivers and settings.

BIOS Settings

Do not change the BIOS settings. They are optimized for running QVI software.

Operating System Upgrades

Periodically, Microsoft® releases updates for their software. Updates should **not** be installed while the system is in operation. We suggest that your IT personnel keep track of these updates in the event a system issue occurs. Any issues should be brought to the attention of the QVI channel partner who provided your system.

QVI Software

All QVI software must be installed on a local drive on the system controller. QVI software cannot be installed on a network drive.

Parallel Port

For systems that use a parallel cable to connect the system controller to the measurement machine, **do not** install any devices in series with the parallel port. This includes parallel port security devices.

Microsoft .NET Framework

- MeasureMind 3D version 14.3 and higher requires .NET Framework 4.0
- MeasureMind 3D version 14.2 and lower requires .NET Framework 3.5 or lower
- Measure-X version 4.0 and higher requires .NET Framework 4.0
- VMS version 9.x requires .NET Framework 4.5

Screen Resolution

- MeasureMind 3D version 14.0 and lower supports 1024 x 768 (4:3 aspect ratio) screen resolution only
- MeasureMind 3D version 14.1 and higher supports 1024 x 768 (4:3 aspect ratio) screen resolution, 1680 x 1050 (16:10 aspect ratio) screen resolution, and 1920 x 1080 (16:9 aspect ratio) screen resolution
- Measure-X version 3.4 and lower supports 1024 x 768 (4:3 aspect ratio) screen resolution only
- Measure-X version 3.5 and higher supports 1024 x 768 (4:3 aspect ratio) screen resolution, 1680 x 1050 (16:10 aspect ratio) screen resolution, and 1920 x 1080 (16:9 aspect ratio) screen resolution

Onboard Sound

Do not enable onboard sound on the system controller (the system ships with the sound disabled). Drivers for onboard sound are known to reduce system performance and potentially cause problems with system operation.

USB Peripherals

Be aware that USB printer packages install substantial software – much of it unnecessary for printer operation. Minimize this by only installing a basic driver for the device. Always check the manufacturer's website for the latest version.

The use of 3rd party USB devices may yield the system inoperable by modifying the USB drivers installed on the system controller. In this case, a restore of the hard drive will be required, resulting in the possible loss of user data.

Do not disable any USB ports on the system controller.

Internet Use

We strongly recommend that you do not use the system controller to browse the internet. Remember the intended use of the system controller.

Network Adapters & Firewalls

- For systems equipped with an Ethernet camera, do not enable a firewall on the associated network adapter.
- For systems equipped with the UCC Controller, **do not** disable the UCC network adapter, which is used to communicate with the UCC Controller. The scanning probe will not work if you disable the UCC network adapter or enable a firewall on it.

3rd Party Software

Avoid installing 3rd party software. They are known for changing drivers and consuming system resources. Only install software that supports the intended use of the measurement system. If you have any questions, contact the QVI channel partner who provided your system.

3rd Party Hardware

Before installing any peripheral hardware, contact the QVI channel partner who provided your system.

Offline Folders

The use of the Offline Folders feature in Windows can cause QVI measurement software project/routine files to be lost or corrupt. We recommend storing project and routine files in a local folder on the system controller, or in a network share folder that has the Offline Folders option disabled.

For example, if an Active Directory configuration forces a user's Windows profile to be "mapped" to a network share folder with Offline Folders enabled, the QVI measurement software project/routine files should be saved to either a non-synchronized local folder or a separate network share folder (with Offline Folders disabled) to avoid file corruption.

AutoPlay

Do not enable AutoPlay for removable devices (the system ships with AutoPlay disabled). This helps prevent removable devices that are infected with malicious software from automatically installing malicious software on the system controller.

During routine maintenance, confirm AutoPlay is disabled for all removable devices.

Remote File Sharing

Do not set up remote file sharing on the system controller.

Installing Email Clients

Do not install email clients on the system controller, which may lead to problems. Mail popup alert boxes, large files, and automatically checking for new mail have caused problems with QVI software. Again, remember that the primary purpose of the system controller is to provide communication and control of the measurement system.

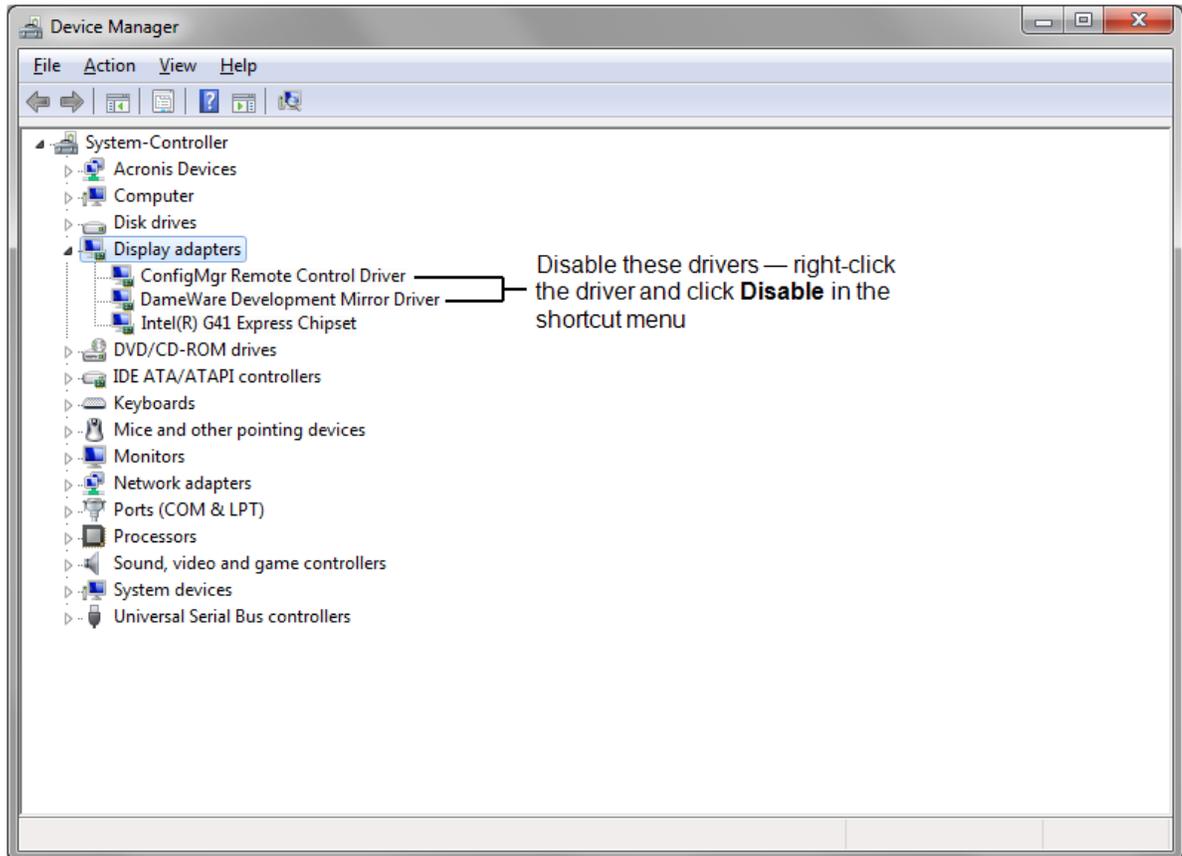
File and Print Server Configuration

Assigning the system controller for these tasks results in major performance problems.

Hardware Drivers

Do not change the hardware drivers that were originally installed on the system controller. This includes network drivers, on-board graphic drivers, and the motherboard BIOS version. Drivers installed during the manufacturing process are located in the C:\Drivers or D:\Drivers folder. For update information, contact the QVI channel partner who provided your system.

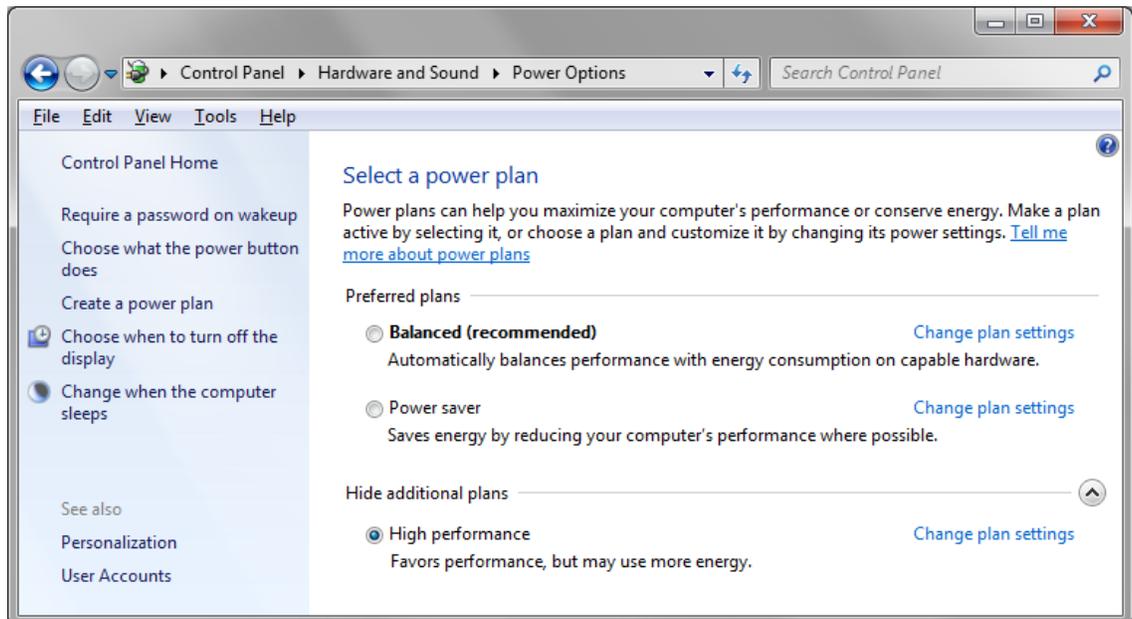
Do not load mirror or hook video drivers for remote computer support or remote Desktop applications.



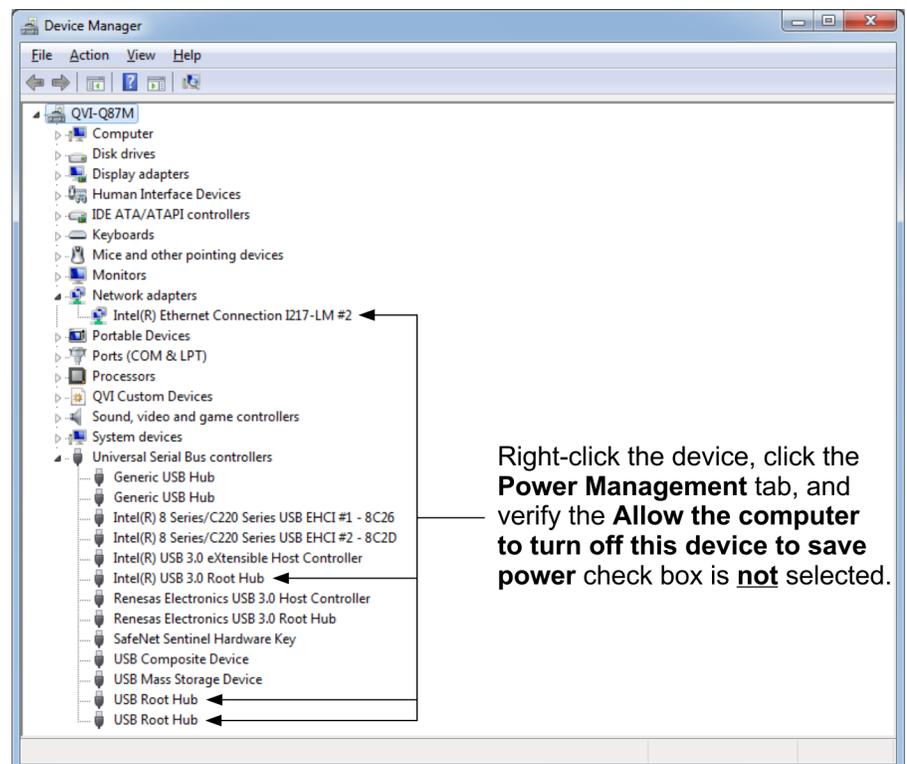
Sleep Function

To prevent the system controller from going to sleep while it is running a part measurement routine, **do not** enable the sleep function.

Do not enable power management on the system controller. Video frame acquisition by QVI software is a continuous process that requires all elements of the system controller to be on at all times. Always use the **High performance** plan.



Do not allow the system controller to turn off the network adapter or USB Root Hubs listed in the Device Manager.



We ensure there are no viruses on the system when it leaves our facility, and we **strongly** recommend that you install anti-virus software after the system has been installed and **before** connecting it to any network or the Internet.

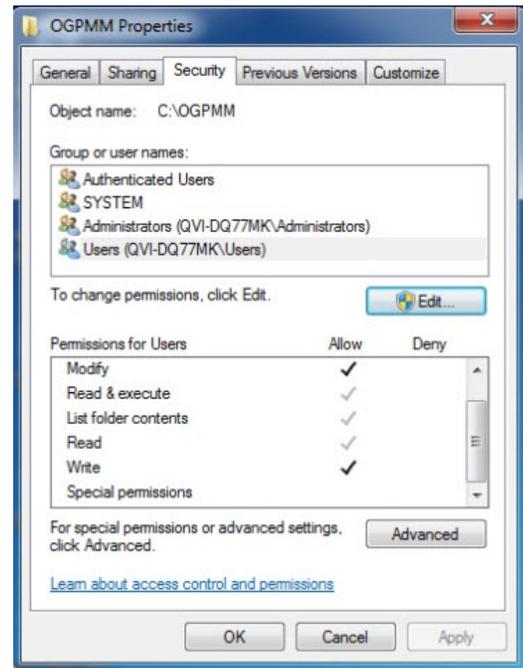
Observe the following after installing anti-virus software:

- Updates should **not** be done while QVI software is running.
- Scheduled system scans should **not** be done while QVI software is running.
- Updates and scans should be performed manually while the measurement system is idle.

Exclude the folders listed below (not all folders will apply to your system) from any antivirus scans. These folders contain files (e.g., *.exe, *.dll, etc.) required to run the QVI software effectively.

- C:\OGP
- C:\OGPMM
- C:\Partrtn
- C:\Program Data\Quality Vision International
- C:\Program Data\QVI
- C:\Program Files\Elements3.x
- C:\Program Files\QVI
- C:\Program Files\Kotem
- C:\Program Files\ShapeGrabber
- C:\Program Files\VMS
- C:\Program Files\VMS8.0
- C:\QVI
- C:\QVSI
- C:\temp
- C:\tmp
- C:\Users\Public\Public Documents\QVI
- C:\ViewMM\Elements4.0
- C:\ViewMM\VMS8.0
- C:\ViewMM\VMS9.1
- C:\Windows\Temp

Do not make any changes/updates to the system or make any changes to the network settings, such as changing user permissions. Permissions need to be set to one level below full admin with full access. **This applies to all the folders listed on the previous page.**



Customer Specific OS Images

In some cases this can be accomplished. However, you must observe the following:

- Back up the drivers in the C:\Drivers or D:\Drivers folder. Once the image is operational, restore the C:\Drivers or D:\Drivers folder, and install the associated drivers.
- Follow the applicable QVI Windows installation procedure. Contact the QVI channel partner who provided your system for these specifications.

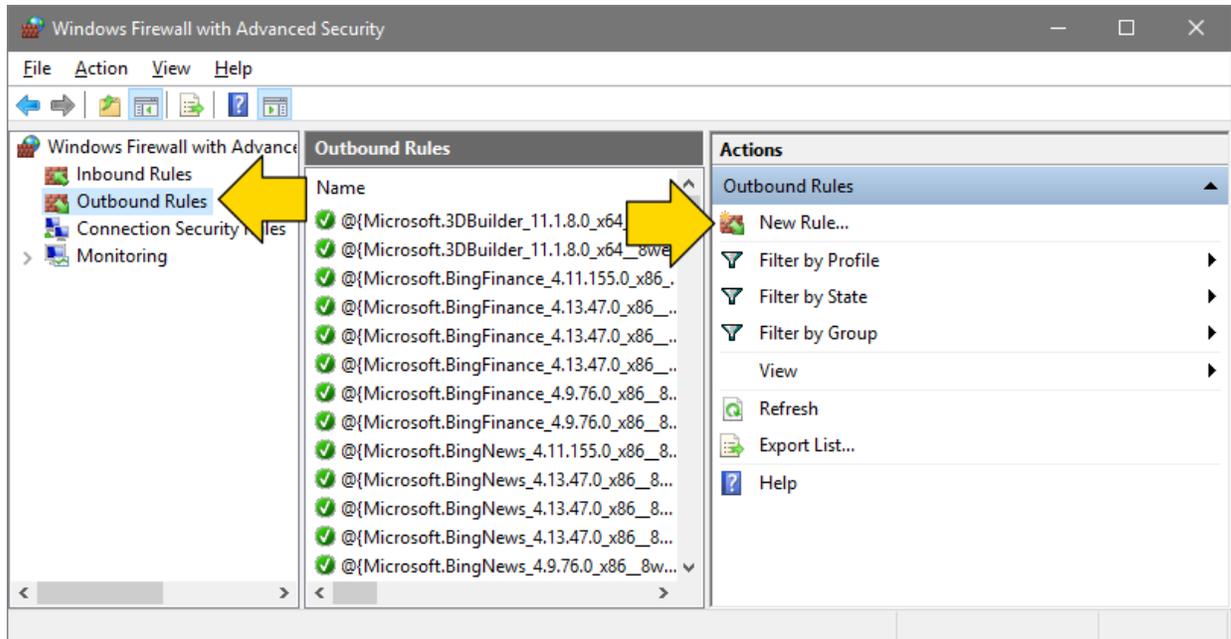
Configuring the System for Other Users

Contact the QVI channel partner who provided your system for more information.

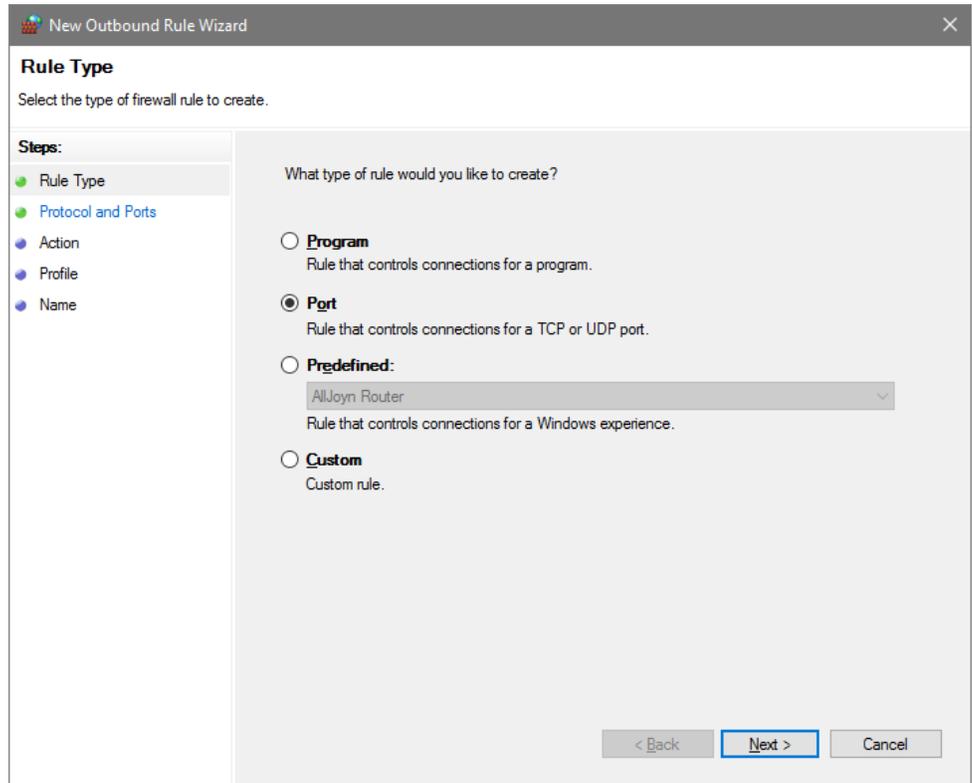
Firewall Setup for GigE Cameras

If you see more than the one or two cameras for the QVI measurement system in the Pylon Viewer, perform the steps below to set up the local Windows firewall to block outbound UDP port 3956 for the corporate domain. (If you are not using Windows firewall, consult the IT Department in your company.)

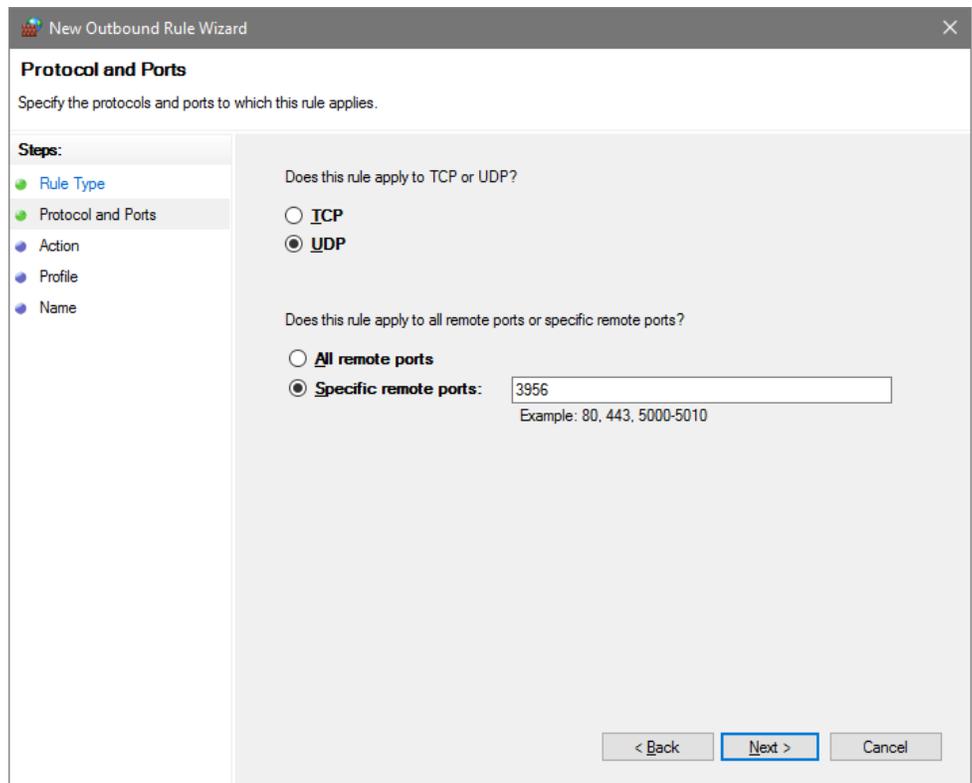
1. Open the **Windows firewall with Advanced Security** tool.
2. Create a new outbound rule.
 - On the left pane, click **Outbound Rules**.
 - On the right pane, click **New Rule**.



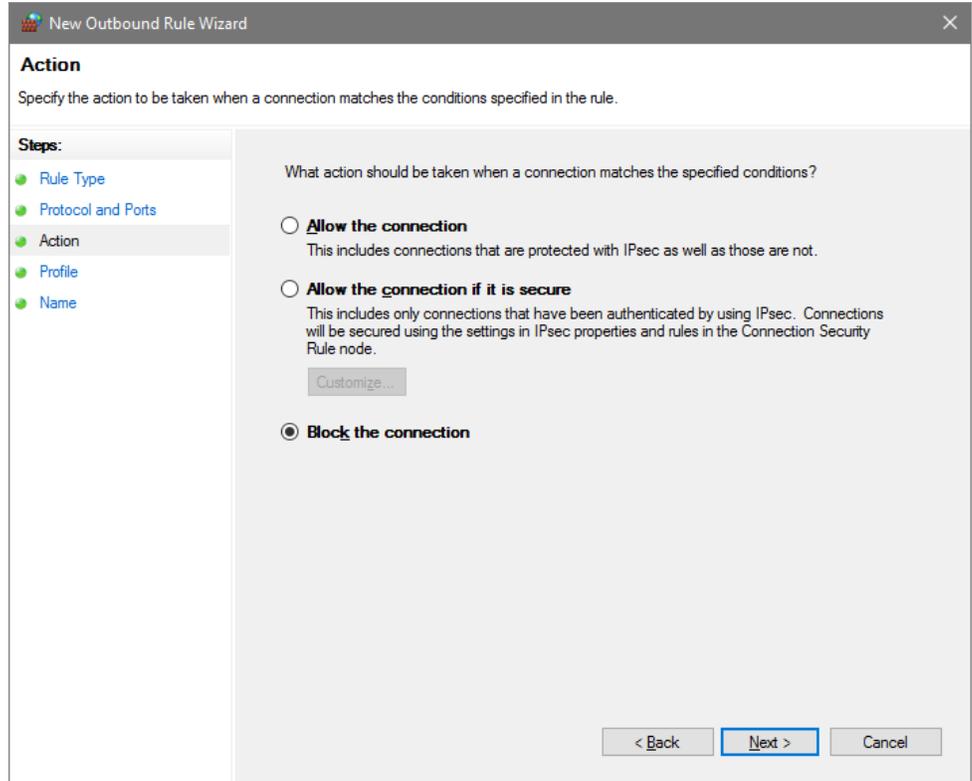
3. Select the **Port** option, and then click **Next**.



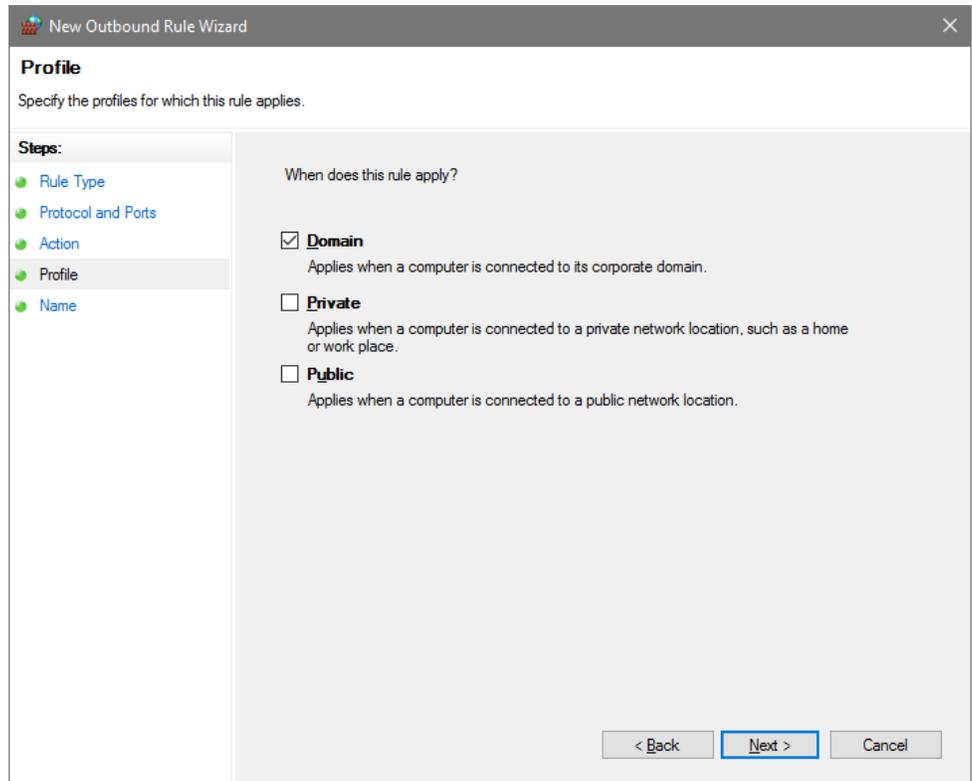
4. Select the **UDP** option and type **3956** in the **Specific remote ports** field. Then click **Next**.



5. Select the **Block the connection** option, and then click **Next**.



6. Select the **Domain** check box and clear the other two check boxes. Then click **Next**.



7. Type a name for the rule in the **Name** field, and type a description in the **Description** field. Then click **Finish**.

The screenshot shows a window titled "New Outbound Rule Wizard" with a close button in the top right corner. Below the title bar, the word "Name" is displayed in bold. Underneath, it says "Specify the name and description of this rule." On the left side, there is a "Steps:" list with five items: "Rule Type", "Protocol and Ports", "Action", "Profile", and "Name". The "Name" step is currently selected and highlighted. The main area of the wizard contains two input fields. The first is labeled "Name:" and contains the text "Basler Pylon GigE Port 3956 Block". The second is labeled "Description (optional):" and contains the text "Port 3956 outbound UDP block on the domain adapter only. Prevents Pylon from seeing other cameras on a corporate network." At the bottom right of the wizard, there are three buttons: "< Back", "Finish" (which is highlighted with a blue border), and "Cancel".

8. Close the **Windows firewall with Advanced Security** tool.

Creating a Disc Image of the System Controller Hard Drive

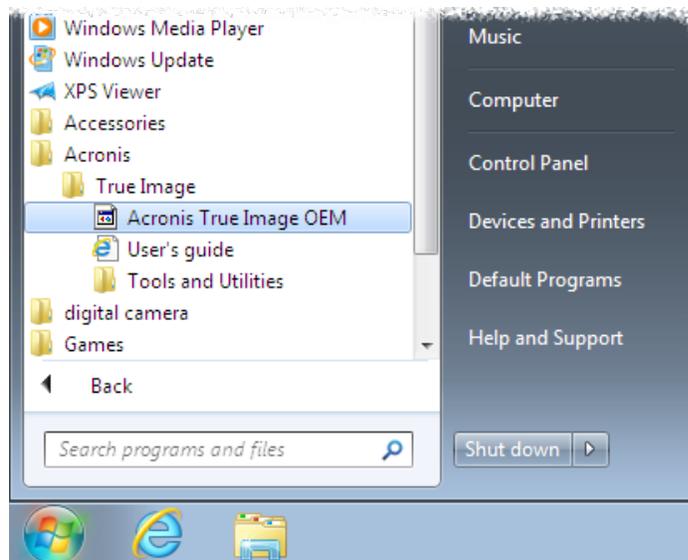
The Acronis True Image OEM disc imaging software comes pre-installed on the system controller. You can use this software to make a disc image of the system controller hard drive and create a bootable USB drive. In the event of unrecoverable damage to the hard drive, you can use the bootable USB drive to recover the system.

Do not use a bootable USB drive to restore the system controller to a previous state without first consulting the QVI Service Department or the QVI channel partner who provided your system.

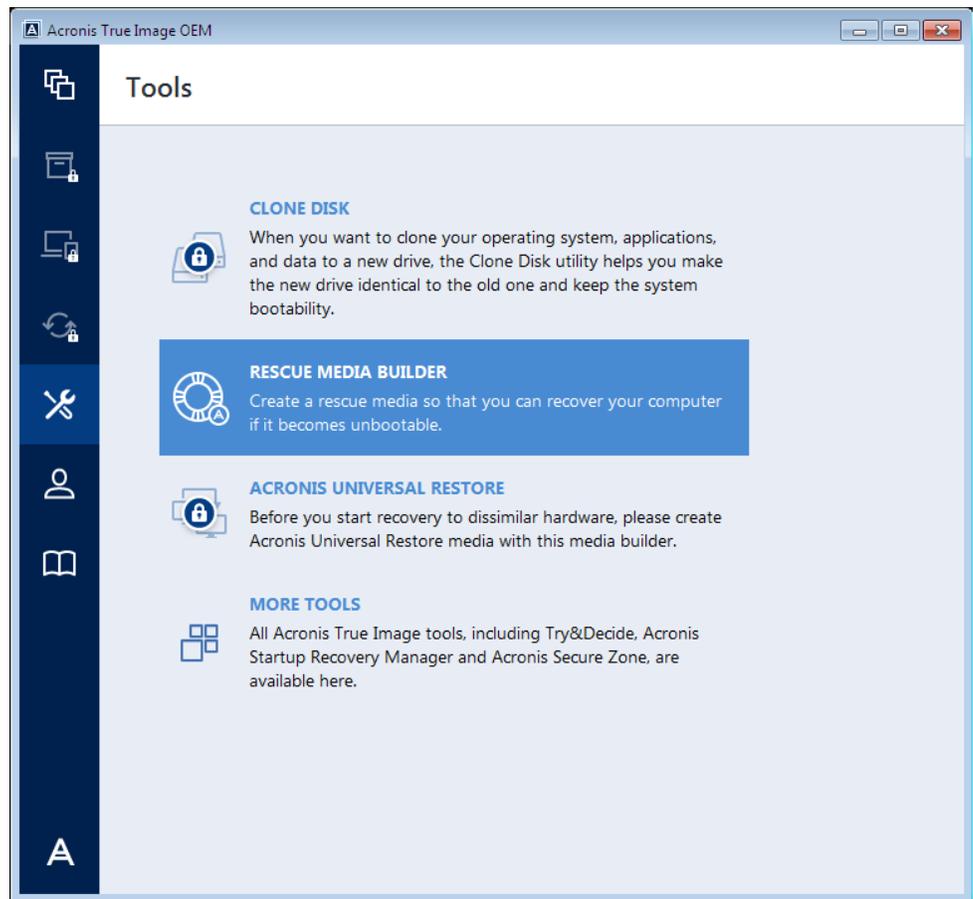
NOTE: Systems built before October 2016 do not have the Acronis True Image OEM disc imaging software installed on the system controller. For that generation of systems, contact the QVI channel partner who provided your system for information on how to create a disc image of the hard drive.

To create a disc image

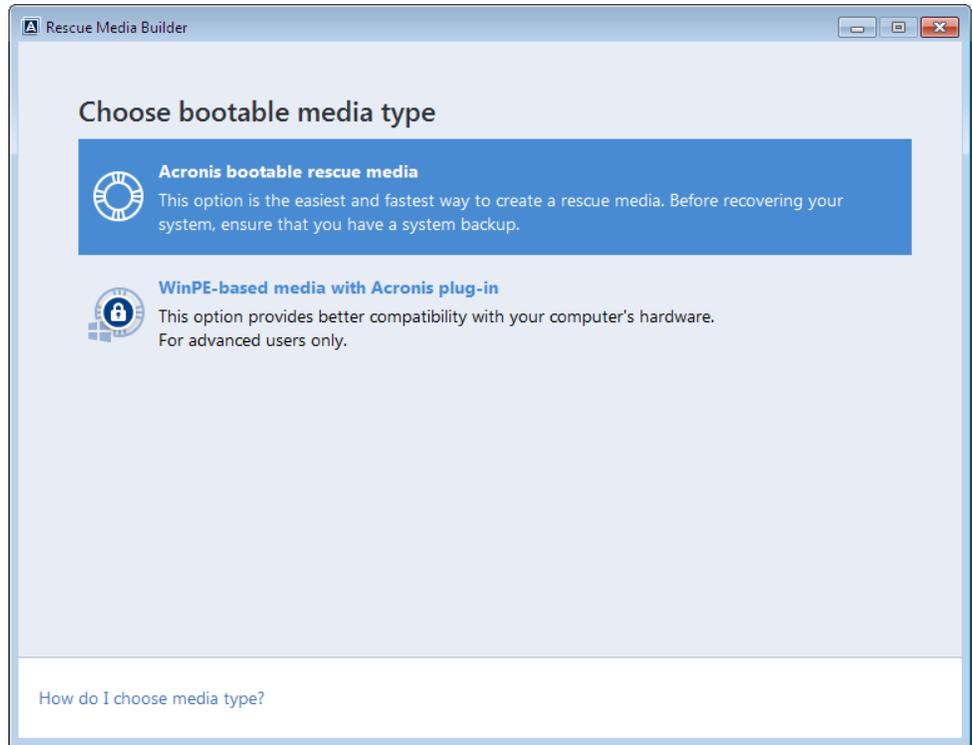
1. Plug a USB drive with at least 32 GB (64 GB recommended) of free space into one of the available USB ports on the system controller.
2. Start **Acronis True Image OEM** from the **Start** menu.



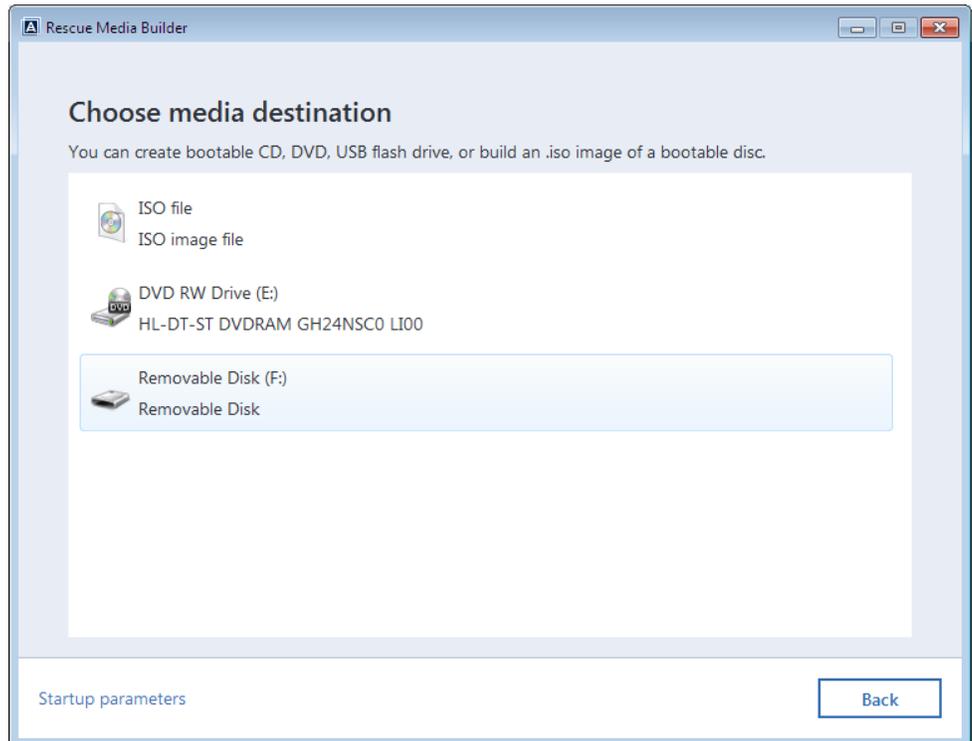
3. Click the **Tools** button and then click **Rescue Media Builder**.



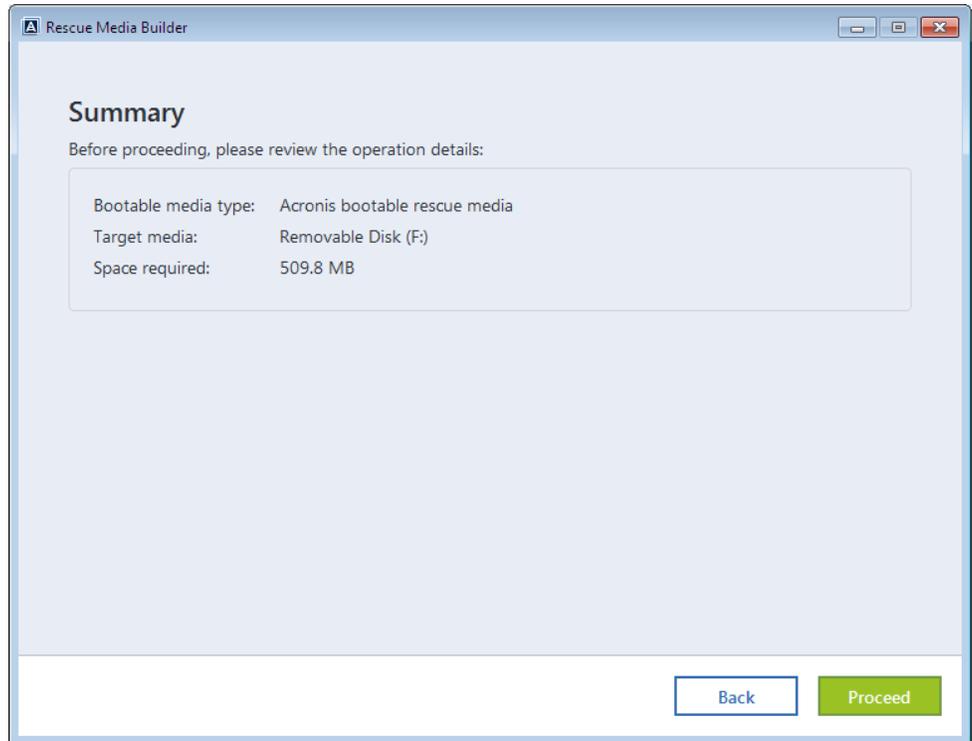
4. Click **Acronis bootable rescue media**.



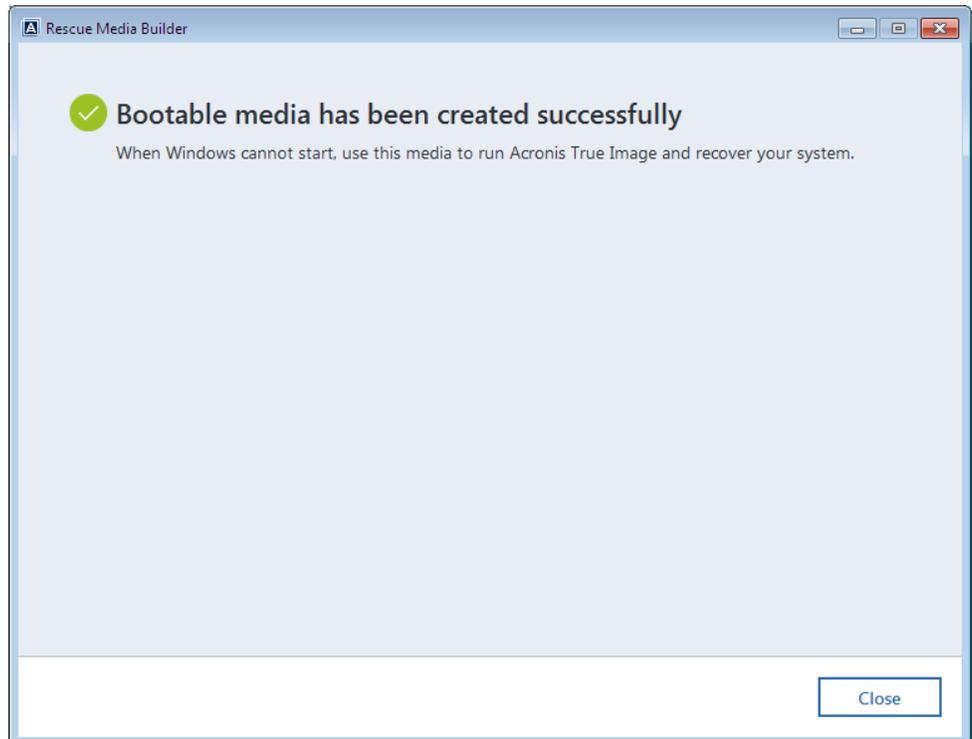
5. Click the removable USB drive you installed in Step 1.



6. Click **Proceed**.



7. Wait for the software to finish writing files to the USB drive. Then click **Close**.



8. Close Acronis True Image OEM.

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