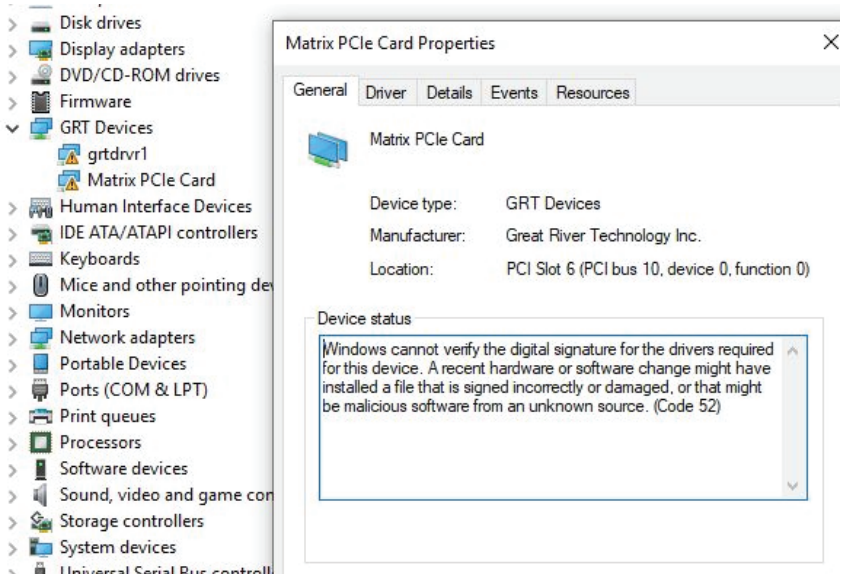
Driver Signing and Digital Signature Requirements

May 6, 2019

This document contains information about Windows driver signatures and driver signing requirements. All Great River Technology drivers are digitally signed. Windows must be able to verify this digital signature before it will load the driver.

If you have an old version of the Matrix driver (before ver 7.0) or your version of Windows does not contain the latest Windows security updates, the Great River Technology driver may appear as shown below in the Device manager. If this is the case, you will not be able to open a driver to any card, run the test applications, or communicate with the card from your own application. Note the yellow warning triangles on "grtdrvr1" and "Matrix PCIe Card" and the text in the "Device status" box. These are indications that Windows has refused to load the driver due to a driver signature problem.



To resolve this problem, you will need to use one of the methods below (#1 should be used if at all possible) to enable the Matrix driver.

1. Update Windows and Matrix driver

Updating Windows and Matrix driver are combined here because these may be related, depending on the version of Windows you are using. When Windows is installed on a computer, you should run Windows Update so that of the latest security updates will be installed. Some of these security updates are used by Windows to verify digital certificates.

A. Run "Windows Update" to install all of latest Windows updates. Allow this process to complete (the computer may reboot and this can take some time). Installing all of the Windows updates may resolve

the driver signature issue so no further action will be required. Note that some Computers have a "locked" image and cannot be updated, or there is no way to connect to the Internet to acquire the Windows updated files. In this case you may be able to resolve the problem by installing the latest GRT Matrix driver (see next step).

B. Install the latest Matrix driver (version 7.0 as of the date of this document). This contains the latest GRT digital signature and the Microsoft kernel-mode driver signature required by Windows 10.

About Windows Versions:

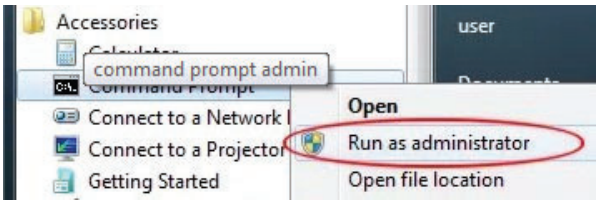
Updating Windows is critical on Windows 7-64bit because the base installation of Windows 7-64bit usually cannot verify driver signatures without the updates. However, if you are using Windows 7-32bit or Windows 10 and installing all Windows updates does not resolve the problem, installing the latest GRT Matrix driver may resolve the problem.

If you are unable to resolve the problem by updating Windows and/or using the latest Matrix driver, you may be able to get the Matrix driver working by disabling driver signature enforcement or by turning off EUFI Secure Boot. See the sections below to accomplish this.

2. Disabling the driver signature enforcement

To disable driver signature enforcement, run the following steps.

A. Open Command Prompt as Administrator



B. Type the following commands:

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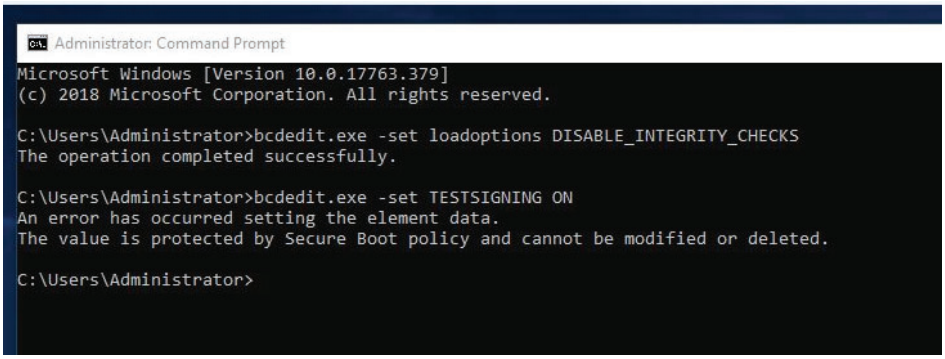
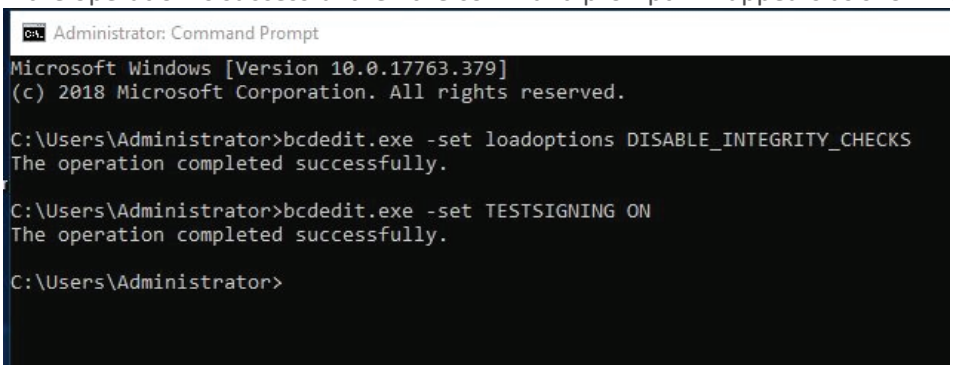
bcdedit.exe -set loadoptions DISABLE_INTEGRITY_CHECKS
bcdedit.exe -set TESTSIGNING ON
```

If you see the error shown below about secure boot policy, you must disable secure boot policy first before running both of these commands. See Section 3 below for disabling Secure Boot.



If the operation is successful then the command prompt will appears as shown below



C. Restart the computer

Check the device manager. It should show all drivers working properly as shown below.

If you want to revert the changes you've made, you can run Command Prompt as an administrator, then enter the following commands:

bcdedit -set loadoptions ENABLE_INTEGRITY_CHECKS
bcdedit -set TESTSIGNING OFF

Your computer will restart and you will be able to install non-digitally signed drivers.

3. Disabling Secure Boot (in computer's UEFI)

Secure Boot is enabled by default on some systems. To disable secure boot, run the following steps:

A. Open the PC BIOS menu. You can often access this menu by pressing a key during the boot sequence, such as F1, F2, DEL, F12, or Esc.

B. Find the Secure Boot setting, and set it to Disabled. This option is usually in either the Security tab, the Boot tab, or the Authentication tab.

C. Save changes and exit. The PC will reboot.

D. Run steps in section 2 to disable driver signature enforcement.