



# NVIDIA Tesla Compute Cluster Driver for Windows

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## Release Notes



# 01 NVIDIA TESLA COMPUTE CLUSTER DRIVER FOR WINDOWS

This edition of Release 256 Notes describes the Release 256 Tesla Compute Cluster (TCC) Drivers for Microsoft® Windows®. NVIDIA provides these notes to describe performance improvements and bug fixes in each documented version of the driver.

- ▶ “About the TCC Driver” on page 1
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## About the TCC Driver

### Overview

The Tesla Compute Cluster (TCC) driver package is designed for compute cluster nodes that have one or more Tesla products installed.

### Benefits

Following are the primary benefits of using the Tesla Compute Cluster driver package:

- ▶ TCC drivers make it possible to use NVIDIA GPUs in nodes with non-NVIDIA integrated graphics.
- ▶ NVIDIA GPUs on systems running the TCC drivers will be available via Remote Desktop, both directly and via cluster management systems that rely on Remote Desktop.
- ▶ NVIDIA GPUs will be available to applications running as a Windows service (i.e. in Session 0) on systems running the TCC drivers.

## 2D or 3D Graphics are not Supported

- ▶ *The TCC driver does not include support for 2D or 3D graphics functionality and cannot be installed concurrently with other NVIDIA display drivers. It should not be used in systems that require NVIDIA graphics hardware acceleration for displays.*

## Running CUDA Applications

- ▶ This release of the TCC driver supports CUDA C/C++ applications and libraries that rely on the CUDA C Runtime and/or CUDA Driver API.
- ▶ NVIDIA GPUs running the TCC driver will be available for CUDA applications running via services or Remote Desktop.
- ▶ In this release, all GPUs will be in compute exclusive mode. As a result, only one CUDA context may exist on a particular device at a time.
- ▶ SDK applications that use graphics will not run properly with the TCC driver. The following are examples of CUDA SDK applications that are not supported:

bicubicTexture	boxFilter	cudaDecodeD3D9	smokeParticles
cudaDecodeGL	fluidsD3D9	fluidsGL	SobelFilter
imageDenoising	Mandelbrot	marchingCubes	volumeRender
nbody	oceanFFT	particles	
postProcessGL	recursiveGaussian	simpleD3D10	
simpleD3D10Texture	simpleD3D11Texture	simpleD3D9	
simpleD3D9Texture	simpleGL	simpleTexture3D	

## Supported Tesla Products

This driver release supports the following NVIDIA Tesla products:

- ▶ Tesla S870
- ▶ Tesla S1070
- ▶ Tesla C1060
- ▶ Tesla M1060
- ▶ Tesla M2050
- ▶ Tesla C2050
- ▶ Tesla S2050



**Note:** Configurations using a GHIC are not supported.

## Supported Operating Systems

- ▶ Windows Server 2008 (64-bit)
- ▶ Windows Server 2008 R2 (64-bit)

## Installation



**Note:** The TCC driver does not provide CUDA-DirectX/OpenGL interoperability. It is a “non-display” driver, and NVIDIA GPUs using this driver will not support DirectX or OpenGL hardware acceleration.

### Instructions

- ▶ Run **NVIDIADisplayWinServer2008x64(259\_03)Int.exe** from the TCC driver package.
- ▶ To perform a silent installation, use the “-s” switch.

### Installation on Systems with non-TCC NVIDIA GPUs

- ▶ NVIDIA GPUs running the TCC driver may coexist with other display devices.
- ▶ The TCC driver is overinstalled over any NVIDIA display driver in the system—the NVIDIA TCC driver then becomes the only driver for all NVIDIA GPUs in the system. If the TCC driver is uninstalled at a later time, the previous driver is not restored.
- ▶ Non-supported NVIDIA GPUs appear as “VGA adapters” in the Windows Device Manager and can be used to drive displays.

Non-supported NVIDIA GPUs can still function as CUDA devices, but the GPU’s graphics functionality is not available to applications.

## Changes in this Release

### New in Release 256

- ▶ Added support for CUDA 3.1
- ▶ Added support for the following Tesla hardware:
  - Tesla C1060
  - Tesla C2050
  - Tesla S2050

### Changes and Fixed issues in Version 259.03

- ▶ Improved performance for Tesla C2050, M2050, and S2050.

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