



# NVIDIA OptiX

## Driver release notes

13 October 2021  
Version 2021.470



---

## **NVIDIA OptiX – Driver release notes**

### **Copyright Information**

© 2021 NVIDIA Corporation. All rights reserved.

Document build number 352877

---

## Contents

1	Introduction	1
2	R460 driver release notes	3
2.1	461.92 (Windows), 460.67 (Linux) – March 18, 2021	3
2.1.1	What’s new in this version	3
2.1.2	Known issues	3
2.2	461.72 (Windows), 460.56 (Linux) – February 26, 2021	3
2.2.1	What’s new in this version	3
2.2.2	Known issues	3
2.3	461.40 (Windows), 460.39 (Linux) – January 26, 2021	4
2.3.1	What’s new in this version	4
2.3.2	Known issues	4
2.4	461.09 (Windows), 460.32.03 (Linux) – January 7, 2021	4
2.4.1	What’s new in this version	4
2.4.2	Known issues	4
2.5	460.89 (Windows), 460.27.04 (Linux) – December 15, 2020	4
2.5.1	What’s new in this version	5
2.5.2	Known issues	5
3	R465 driver release notes	7
3.1	466.11 (Windows), 465.24.02 (Linux) – April 14, 2021	7
3.1.1	What’s new in this version	7
3.1.2	Known issues	7
3.2	465.89 (Windows), 465.19.01 (Linux) – April 7, 2021	7
3.2.1	What’s new in this version	7
3.2.2	Known issues	8
4	R470 driver release notes	9
4.1	471.68 (Windows), 470.63.01 (Linux) – August 10, 2021	9
4.1.1	What’s new in this version	9
4.1.2	Known issues	9
4.2	471.41 (Windows), 470.57.02 (Linux) – July 19, 2021	9
4.2.1	What’s new in this version	9
4.2.2	Known issues	9
4.3	471.11 (Windows), 470.42.01 (Linux) – June 23, 2021	10
4.3.1	What’s new in this version	10
4.3.2	Known issues	10

---

# 1 Introduction

Welcome to the OptiX driver release notes for NVIDIA Enterprise drivers. For any questions, please email [OptiX-Help@nvidia.com](mailto:OptiX-Help@nvidia.com).



## 2 R460 driver release notes

R460 is a Production driver branch and features support for new Ampere GPUs.

### 2.1 461.92 (Windows), 460.67 (Linux) – March 18, 2021

This is the fifth release in the R460 Production branch. This release focused on bug fixes from the previous driver. For full driver release notes, visit the [Windows driver release notes](#)<sup>1</sup> or [Linux driver and release highlights](#).<sup>2</sup>

#### 2.1.1 What's new in this version

- Bug fixes and performance enhancements
  - Minor bug fixes for return values in the Demand Loading library in OptiX 6
  - Various other bug fixes and enhancements

#### 2.1.2 Known issues

There are no known issues to report at the release of this driver.

### 2.2 461.72 (Windows), 460.56 (Linux) – February 26, 2021

This is the fourth release in the R460 Production branch. This release focused on bug fixes from the previous driver. For full driver release notes, visit the [Windows driver release notes](#)<sup>3</sup> or [Linux driver and release highlights](#).<sup>4</sup>

#### 2.2.1 What's new in this version

- This is the first driver to support the NVIDIA RTX 3060 GPU
- Bug fixes and performance enhancements
  - Fixes an issue where Ampere devices could incorrectly report the version of the RTCores present on the device
  - Fixes a crash in `CuMipmappedArrayGetLevel` with dual Ampere GPU
  - Fixes occasional failures with multi-GPU configurations with NVLink
  - Various other bug fixes and enhancements

#### 2.2.2 Known issues

There are no known issues to report at the release of this driver.

---

1. [https://us.download.nvidia.com/Windows/Quadro\\_Certified/461.92/461.92-win10-quadro-release-notes.pdf](https://us.download.nvidia.com/Windows/Quadro_Certified/461.92/461.92-win10-quadro-release-notes.pdf)

2. <https://www.nvidia.com/Download/driverResults.aspx/171392/en-us>

3. [https://us.download.nvidia.com/Windows/Quadro\\_Certified/461.72/461.72-win10-quadro-release-notes.pdf](https://us.download.nvidia.com/Windows/Quadro_Certified/461.72/461.72-win10-quadro-release-notes.pdf)

4. <https://www.nvidia.com/download/driverResults.aspx/170804/en-us>

## 2.3 461.40 (Windows), 460.39 (Linux) – January 26, 2021

This is the third release in the R460 Production branch. This release focused on bug fixes from the previous driver. For full driver release notes, visit the [Windows driver release notes](#)<sup>5</sup> or [Linux driver and release highlights](#).<sup>6</sup>

### 2.3.1 What's new in this version

- Bug fixes and performance enhancements
  - Fixes an issue related alpha values within the OptiX denoiser
  - Fixes an occasion stack overflow when creating a module
  - Improves the security of Incremental Decryption in OptiX
  - Various other bug fixes and enhancements

### 2.3.2 Known issues

There are no known issues to report at the release of this driver.

## 2.4 461.09 (Windows), 460.32.03 (Linux) – January 7, 2021

This is the second release in the R460 Production branch. This release focused on bug fixes from the previous driver. For full driver release notes, visit the [Windows driver release notes](#)<sup>7</sup> or [Linux driver and release highlights](#).<sup>8</sup>

### 2.4.1 What's new in this version

- Bug fixes and performance enhancements
  - Fixes infrequent instabilities that were noted with some OptiX workloads
  - Fixes potential performance regressions seen with Maxwell-based GPUs
  - Improvements made to enhance OptiX code coverage
  - Various other bug fixes and enhancements

### 2.4.2 Known issues

There are no known issues to report at the release of this driver.

## 2.5 460.89 (Windows), 460.27.04 (Linux) – December 15, 2020

This is the first release in the R460 Production branch. This release includes support for NVIDIA RTX A6000. For full driver release notes, visit the [Windows driver release notes](#)<sup>9</sup> or [Linux driver and release highlights](#).<sup>10</sup>

---

5. [https://us.download.nvidia.com/Windows/Quadro\\_Certified/461.40/461.40-win10-quadro-release-notes.pdf](https://us.download.nvidia.com/Windows/Quadro_Certified/461.40/461.40-win10-quadro-release-notes.pdf)

6. <https://www.nvidia.com/download/driverResults.aspx/170134/en-us>

7. [https://us.download.nvidia.com/Windows/Quadro\\_Certified/461.09/461.09-win10-quadro-release-notes.pdf](https://us.download.nvidia.com/Windows/Quadro_Certified/461.09/461.09-win10-quadro-release-notes.pdf)

8. <https://www.nvidia.com/download/driverResults.aspx/168347/en-us>

9. [https://us.download.nvidia.com/Windows/Quadro\\_Certified/460.89/460.89-win10-quadro-release-notes.pdf](https://us.download.nvidia.com/Windows/Quadro_Certified/460.89/460.89-win10-quadro-release-notes.pdf)

10. <https://www.nvidia.com/Download/driverResults.aspx/168208/en-us>



### 2.5.1 What's new in this version

- This is the first driver to support the NVIDIA RTX A6000 GPU
- Bug fixes and performance enhancements
  - Fixes an issue related to sporadic pixel differences during renders
  - Fixes an issue when Windows is unable to handle more than 8 GPUs in the system
  - Improves handling of disk cache corruption
  - Various other bug fixes and enhancements

### 2.5.2 Known issues

Infrequent instabilities have been noted with some OptiX workloads; fixes will be available with the next driver release.



## 3 R465 driver release notes

R465 is a new feature branch and features support for the OptiX 7.3 SDK.

### 3.1 466.11 (Windows), 465.24.02 (Linux) – April 14, 2021

This is the second release in the R465 New Feature branch. This release focused on bug fixes from the previous driver. For full driver release notes, visit the [Windows driver release notes](#)<sup>11</sup> or [Linux driver and release highlights](#).<sup>12</sup>

#### 3.1.1 What's new in this version

- Bug fixes and performance enhancements
  - Improved performance in partner applications
  - Various other bug fixes and enhancements

#### 3.1.2 Known issues

There are no known issues to report at the release of this driver.

### 3.2 465.89 (Windows), 465.19.01 (Linux) – April 7, 2021

This is the first release in the R465 New Feature branch. This release includes support for the OptiX 7.3 SDK. For full driver release notes, visit the [Windows driver release notes](#)<sup>13</sup> or [Linux driver and release highlights](#).<sup>14</sup>

#### 3.2.1 What's new in this version

- This is the first driver to support the OptiX 7.3 SDK
  - Added support for temporal denoising
  - Improved performance of the OptiX Curves primitive
  - The OptiX Demand Loading library is now fully asynchronous, with sparse texture tiles loaded in the background by multiple CPU threads while OptiX kernels execute on the GPU
- Bug fixes and performance enhancements
  - Fixes tiling header for Denoiser
  - Fixes issue with return values in the Demand Loading Library
  - Modules are now allowed to be deleted if their tasks are not being executed

---

11. [https://us.download.nvidia.com/Windows/Quadro\\_Certified/466.11/466.11-win10-quadro-release-notes.pdf](https://us.download.nvidia.com/Windows/Quadro_Certified/466.11/466.11-win10-quadro-release-notes.pdf)

12. <https://www.nvidia.com/download/driverResults.aspx/172836/en-us>

13. [https://us.download.nvidia.com/Windows/Quadro\\_Certified/465.89/465.89-win10-quadro-release-notes.pdf](https://us.download.nvidia.com/Windows/Quadro_Certified/465.89/465.89-win10-quadro-release-notes.pdf)

14. <https://www.nvidia.com/download/driverResults.aspx/171980/en-us>

- BVH size is now updated after compaction
- Fixes issues with dual Ampere GPU configurations
- Various other bug fixes and enhancements

### 3.2.2 Known issues

Some users may experience slower performance in some partner applications.

## 4 R470 driver release notes

R470 is the first Production branch to support the OptiX 7.3 SDK. R465 was the New Feature driver branch where OptiX 7.3 was first released; see “[R465 driver release notes](#)” (page 7).

### 4.1 471.68 (Windows), 470.63.01 (Linux) – August 10, 2021

This is the third release in the R470 Production branch. This release added support for the NVIDIA RTX A2000 and contained bug fixes from the previous driver. For full driver release notes, visit the [Windows driver release notes](#)<sup>15</sup> or [Linux driver and release highlights](#).<sup>16</sup>

#### 4.1.1 What’s new in this version

- Bug fixes and performance enhancements
  - Fixed a potential crash seen in partner applications due to a tile indexing issue
  - Various other bug fixes and enhancements

#### 4.1.2 Known issues

There are no known issues to report at the release of this driver.

### 4.2 471.41 (Windows), 470.57.02 (Linux) – July 19, 2021

This is the second release in the R470 Production branch. This release focused on bug fixes from the previous driver. For full driver release notes, visit the [Windows driver release notes](#)<sup>17</sup> or [Linux driver and release highlights](#).<sup>18</sup>

#### 4.2.1 What’s new in this version

- Bug fixes and performance enhancements
  - Fixed artifact issues seen within the OptiX Denoiser
  - Various other bug fixes and enhancements

#### 4.2.2 Known issues

There are no known issues to report at the release of this driver.

---

15. [https://us.download.nvidia.com/Windows/Quadro\\_Certified/471.68/471.68-win10-win11-quadro-release-notes.pdf](https://us.download.nvidia.com/Windows/Quadro_Certified/471.68/471.68-win10-win11-quadro-release-notes.pdf)

16. <https://www.nvidia.com/Download/driverResults.aspx/179599/en-us>

17. [https://us.download.nvidia.com/Windows/Quadro\\_Certified/471.41/471.41-win10-quadro-release-notes.pdf](https://us.download.nvidia.com/Windows/Quadro_Certified/471.41/471.41-win10-quadro-release-notes.pdf)

18. <https://www.nvidia.com/Download/driverResults.aspx/177145/en-us>

### 4.3 471.11 (Windows), 470.42.01 (Linux) – June 23, 2021

This is the first release in the R470 Production branch. This release includes support for the OptiX 7.3 SDK. For full driver release notes, visit the [Windows driver release notes](#)<sup>19</sup> or [Linux driver and release highlights](#).<sup>20</sup>

#### 4.3.1 What's new in this version

- This is the first Production branch to support the OptiX 7.3 SDK
  - Added support for temporal denoising
  - Improved performance of the OptiX Curves primitive
  - The OptiX Demand Loading library is now fully asynchronous, with sparse texture tiles loaded in the background by multiple CPU threads while OptiX kernels execute on the GPU
- Bug fixes and performance enhancements
  - Fixed performance and artifacting issues within the OptiX Denoiser
  - Various other bug fixes and enhancements

#### 4.3.2 Known issues

There are no known issues to report at the release of this driver.

---

19. [https://us.download.nvidia.com/Windows/Quadro\\_Certified/471.11/471.11-win10-quadro-release-notes.pdf](https://us.download.nvidia.com/Windows/Quadro_Certified/471.11/471.11-win10-quadro-release-notes.pdf)

20. <https://www.nvidia.com/download/driverResults.aspx/176525/en-us>