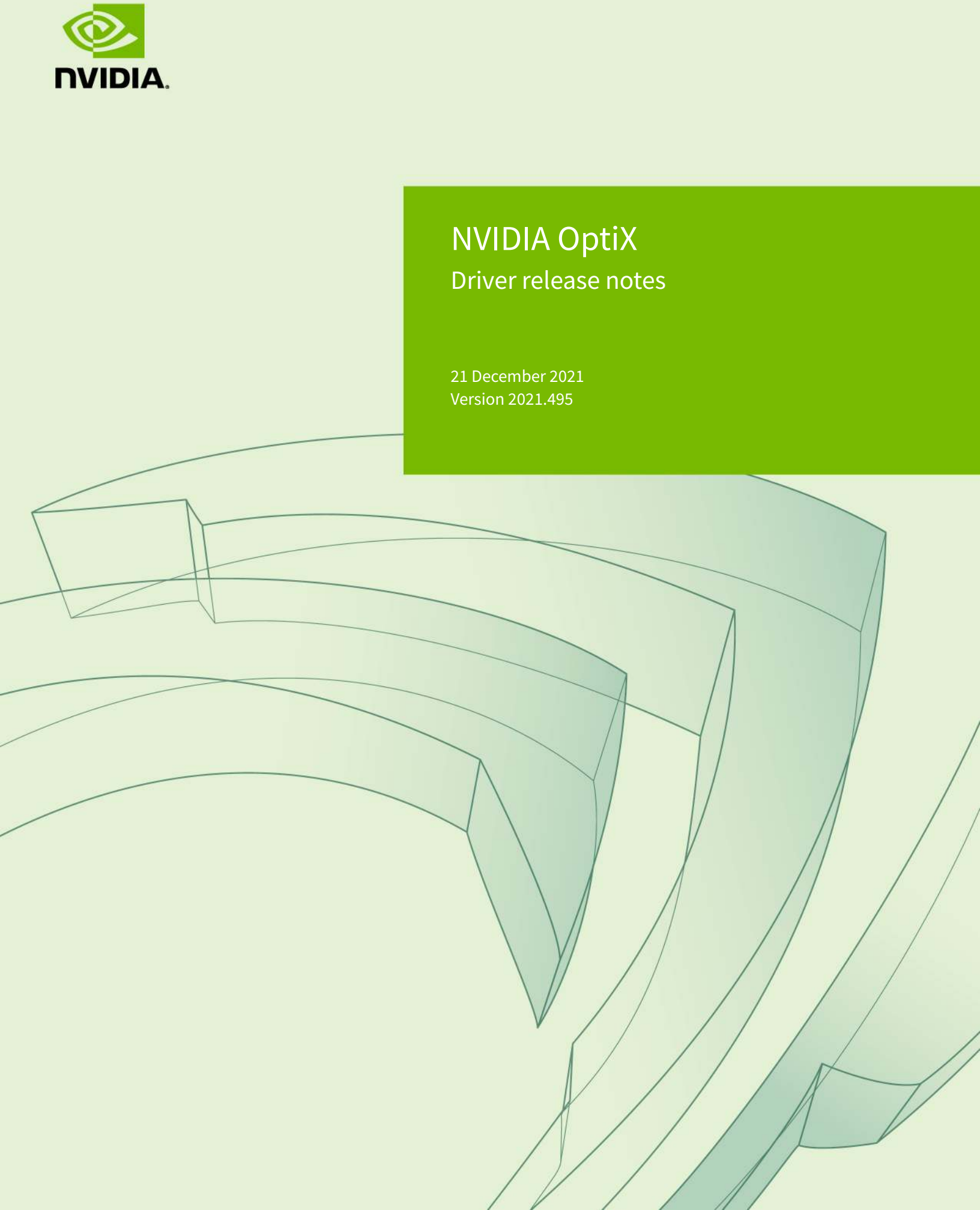

NVIDIA OptiX

Driver release notes

21 December 2021
Version 2021.495

NVIDIA OptiX – Driver release notes

Document build number 355623

Contents

1 Introduction

Welcome to the OptiX driver release notes for NVIDIA Enterprise drivers. For any questions, please email `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[1] or Linux driver and release highlights.[2]

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[3] or Linux driver and release highlights.[4]

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
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
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[5] or Linux driver and release highlights.[6]

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[7] or Linux driver and release highlights.[8]

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[9] or Linux driver and release highlights.[10]

5. 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
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
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[11] or Linux driver and release highlights.[12]

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[13] or Linux driver and release highlights.[14]

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
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
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).

4.1 472.12 (Windows), 470.74 (Linux) – September 20, 2021

This is the fourth 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[15] or Linux driver and release highlights.[16]

4.1.1 What's new in this version

- Bug fixes and performance enhancements
  - Fixed issues seen with the OptiX Denoiser and large resolution scenes (3371561)
  - Fixed an issue with PTX encryption for partner applications (3369656)
  - Various other bug fixes and enhancements

4.1.2 Known issues

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

4.2 471.68 (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[17] or Linux driver and release highlights.[18]

4.2.1 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

4.2.2 Known issues

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

15. https://us.download.nvidia.com/Windows/Quadro_Certified/472.12/472.12-win10-win11-quadro-release-notes.pdf
16. https://www.nvidia.com/download/driverResults.aspx/180475/en-us
17. https://us.download.nvidia.com/Windows/Quadro_Certified/471.68/471.68-win10-win11-quadro-release-notes.pdf
18. https://www.nvidia.com/Download/driverResults.aspx/179599/en-us

4.3 471.41 (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[19] or Linux driver and release highlights.[20]

4.3.1 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

4.3.2 Known issues

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

4.4 471.11 (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[21] or Linux driver and release highlights.[22]

4.4.1 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

4.4.2 Known issues

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

19. https://us.download.nvidia.com/Windows/Quadro_Certified/471.41/471.41-win10-quadro-release-notes.pdf
20. https://www.nvidia.com/Download/driverResults.aspx/177145/en-us
21. https://us.download.nvidia.com/Windows/Quadro_Certified/471.11/471.11-win10-quadro-release-notes.pdf
22. https://www.nvidia.com/download/driverResults.aspx/176525/en-us

5 R495 driver release notes

R495 is a New Feature branch and contains support for the OptiX 7.4 SDK. For any questions, please email OptiX-Help@nvidia.com.

5.1 496.49 (Windows), 495.44 (Linux) – October 26, 2021

This is the second release in the R495 New Feature branch. This release focused on bug fixes from the previous driver. For full driver release notes, visit the Windows driver release notes[23] or Linux driver and release highlights.[24]

5.1.1 What's new in this version

- Bug fixes and performance enhancements
  - Fixed a potential compile error with PTX input (3383443)
  - Various other bug fixes and enhancements

5.1.2 Known issues

Users may notice some performance regressions compared to R470 drivers; this is due to a backend compiler change. Investigations to eliminate the regressions are ongoing.

5.2 496.13 (Windows), 495.29.05 (Linux) – October 14, 2021

This is the first release in the R495 New Feature branch. This was the first release to contain support for the OptiX 7.4 SDK. For full driver release notes, visit the Windows driver release notes[25] or Linux driver and release highlights.[26]

5.2.1 What's new in this version

- Bug fixes and performance enhancements
  - Fixed issues with the OptiX Denoiser and large resolution scenes (200770640, 3371561)
  - Fixed brightness issues within the OptiX Denoiser (200773317)
  - Fixed artifacting issues within the OptiX Demand Loading system (3173192)
  - Various other bug fixes and enhancements

23. https://us.download.nvidia.com/Windows/Quadro_Certified/496.49/496.49-win10-win11-quadro-release-notes.pdf
24. https://www.nvidia.com/download/driverResults.aspx/181274/en-us
25. https://us.download.nvidia.com/Windows/Quadro_Certified/496.13/496.13-win10-win11-quadro-release-notes.pdf
26. https://www.nvidia.com/download/driverResults.aspx/181159/en-us

5.2.2 Known issues

Users may notice some performance regressions compared to R470 drivers; this is due to a backend compiler change. Investigations to eliminate the regressions are ongoing.

