



What's New in Virtual GPU Software R450 for All Supported Hypervisors

Release Notes

Table of Contents

Chapter 1. Updates by Release.....	1
1.1. Updates in Release 11.13.....	1
1.2. Updates in Release 11.12.....	1
1.3. Updates in Release 11.11.....	2
1.4. Updates in Release 11.10.....	2
1.5. Updates in Release 11.9.....	3
1.6. Updates in Release 11.8.....	3
1.7. Updates in Release 11.7.....	4
1.8. Updates in Release 11.6.....	4
1.9. Updates in Release 11.5.....	5
1.10. Updates in Release 11.4.....	5
1.11. Updates in Release 11.3.....	5
1.12. Updates in Release 11.2.....	6
1.13. Updates in Release 11.1.....	6
1.14. Updates in Release 11.0.....	7

Chapter 1. Updates by Release

Updates for each release in this release family of NVIDIA vGPU software may include new features, introduction of hardware and software support, and withdrawal of hardware and software support.

1.1. Updates in Release 11.13

New Features in Release 11.13

- ▶ Security updates - see *Security Bulletin: NVIDIA GPU Display Driver - June 2023*, which is posted shortly after the release date of this software and is listed on the [NVIDIA Product Security](#) page
- ▶ Miscellaneous bug fixes

Hardware and Software Support Introduced in Release 11.13

- ▶ Support for Red Hat Enterprise Linux with KVM hypervisor 8.8
- ▶ Support for Red Hat Enterprise Linux 8.8 as a guest OS
- ▶ Support for Citrix Virtual Apps and Desktops version 7 2305
- ▶ Support for VMware Horizon 2303 (8.9)

Feature Support Withdrawn in Release 11.13

- ▶ Red Hat Enterprise Linux with KVM hypervisor 8.7 and 8.4 are no longer supported.
- ▶ Red Hat Enterprise Linux 8.7 and 8.4 are no longer supported as a guest OS.

1.2. Updates in Release 11.12

New Features in Release 11.12

- ▶ Security updates - see *Security Bulletin: NVIDIA GPU Display Driver - March 2023*, which is posted shortly after the release date of this software and is listed on the [NVIDIA Product Security](#) page

- ▶ Miscellaneous bug fixes

Hardware and Software Support Introduced in Release 11.12

- ▶ Support for Windows 11 22H2 as a guest OS
- ▶ Support for Windows 10 2022 Update (22H2) as a guest OS
- ▶ Support for Citrix Virtual Apps and Desktops version 7 2303
- ▶ Support for VMware Horizon 2212 (8.8)

1.3. Updates in Release 11.11

New Features in Release 11.11

- ▶ Security updates - see *Security Bulletin: NVIDIA GPU Display Driver - November 2022*, which is updated shortly after the release date of this software and is listed on the [NVIDIA Product Security](#) page

1.4. Updates in Release 11.10

New Features in Release 11.10

- ▶ Security updates - see *Security Bulletin: NVIDIA GPU Display Driver - November 2022*, which is posted shortly after the release date of this software and is listed on the [NVIDIA Product Security](#) page
- ▶ Miscellaneous bug fixes

Hardware and Software Support Introduced in Release 11.10

- ▶ Support for Red Hat Enterprise Linux with KVM hypervisor 8.7
- ▶ Support for Red Hat Enterprise Linux 8.7 as a guest OS
- ▶ Support for Citrix Virtual Apps and Desktops version 7 2209
- ▶ Support for VMware Horizon 2209 (8.7)

Feature Support Withdrawn in Release 11.10



Note: All versions of Microsoft Windows Server 2016 remain supported as a guest OS. Similarly, all versions of Microsoft Windows Server 2016 with Hyper-V role remain supported as a hypervisor. The earlier statement that Microsoft Windows Server 2016 is no longer supported is **incorrect**.

- ▶ VMware vSphere Hypervisor (ESXi) 6.7 and 6.5 are no longer supported.

1.5. Updates in Release 11.9

New Features in Release 11.9

- ▶ Security updates - see *Security Bulletin: NVIDIA GPU Display Driver - August 2022*, which is posted shortly after the release date of this software and is listed on the [NVIDIA Product Security](#) page
- ▶ Miscellaneous bug fixes

Hardware and Software Support Introduced in Release 11.9

- ▶ Support for Citrix Virtual Apps and Desktops version 7 2206
- ▶ Support for VMware Horizon 2206 (8.6)

Feature Support Withdrawn in Release 11.9

- ▶ Citrix XenServer 7.1 is no longer supported.

1.6. Updates in Release 11.8

New Features in Release 11.8

- ▶ Security updates - see *Security Bulletin: NVIDIA GPU Display Driver - May 2022*, which is posted shortly after the release date of this software and is listed on the [NVIDIA Product Security](#) page
- ▶ Miscellaneous bug fixes

Hardware and Software Support Introduced in Release 11.8

- ▶ Support for Red Hat Enterprise Linux with KVM hypervisor 8.6
- ▶ Support for Red Hat Enterprise Linux 8.6 as a guest OS
- ▶ Support for Citrix Virtual Apps and Desktops version 7 2203
- ▶ Support for VMware Horizon 2203 (8.5)

Feature Support Withdrawn in Release 11.8

- ▶ Red Hat Enterprise Linux with KVM hypervisor 8.5 and 8.2 are no longer supported.
- ▶ Red Hat Enterprise Linux 8.5 and 8.2 are no longer supported as a guest OS.

1.7. Updates in Release 11.7

New Features in Release 11.7

- ▶ Security updates - see *Security Bulletin: NVIDIA GPU Display Driver - February 2022*, which is posted shortly after the release date of this software and is listed on the [NVIDIA Product Security](#) page
- ▶ Miscellaneous bug fixes

Hardware and Software Support Introduced in Release 11.7

- ▶ Support for Red Hat Enterprise Linux with KVM hypervisor 8.5
- ▶ Support for Red Hat Enterprise Linux 8.5 as a guest OS
- ▶ Support for Citrix Virtual Apps and Desktops version 7 2112
- ▶ Support for VMware Horizon 2111 (8.4)

Feature Support Withdrawn in Release 11.7

- ▶ Red Hat Enterprise Linux with KVM hypervisor 8.1, 7.8, and 7.7 are no longer supported.
- ▶ Red Hat Enterprise Linux 8.1 is no longer supported as a guest OS.
- ▶ Red Hat Enterprise Linux 7.8 and 7.7 are no longer supported as a guest OS.

1.8. Updates in Release 11.6

New Features in Release 11.6

- ▶ Security updates - see *Security Bulletin: NVIDIA GPU Display Driver - October 2021*, which is posted shortly after the release date of this software and is listed on the [NVIDIA Product Security](#) page
- ▶ Miscellaneous bug fixes

Hardware and Software Support Introduced in Release 11.6

- ▶ Support for Citrix Virtual Apps and Desktops version 7 2109

1.9. Updates in Release 11.5

New Features in Release 11.5

- ▶ Security updates - see [Security Bulletin: NVIDIA GPU Display Driver - July 2021](#)
- ▶ Miscellaneous bug fixes

Hardware and Software Support Introduced in Release 11.5

- ▶ Support for Citrix Virtual Apps and Desktops version 7.2106
- ▶ Support for VMware Horizon 2106 (8.3)

Feature Support Withdrawn in Release 11.5

- ▶ Citrix Hypervisor 7.0 is no longer supported.
- ▶ Red Hat Enterprise Linux with KVM hypervisor 8.3 is no longer supported.
- ▶ Red Hat Enterprise Linux 8.3 is no longer supported as a guest OS.

1.10. Updates in Release 11.4

New Features in Release 11.4

- ▶ Security updates - see [Security Bulletin: NVIDIA GPU Display Driver - April 2021](#)
- ▶ Miscellaneous bug fixes

Hardware and Software Support Introduced in Release 11.4

- ▶ Support for Red Hat Enterprise Linux with KVM hypervisor 8.4
- ▶ Support for Red Hat Enterprise Linux 8.4 as a guest OS
- ▶ Support for Citrix Virtual Apps and Desktops version 7.2103
- ▶ Support for the following releases of VMware Horizon:
 - ▶ VMware Horizon 2103 (8.2)
 - ▶ VMware Horizon 2012 (8.1)

1.11. Updates in Release 11.3

New Features in Release 11.3

- ▶ Security updates - see [Security Bulletin: NVIDIA GPU Display Driver - January 2021](#)

- ▶ Miscellaneous bug fixes

Hardware and Software Support Introduced in Release 11.3

- ▶ Support for Red Hat Enterprise Linux with KVM hypervisor 8.3
- ▶ Support for Windows 10 October 2020 Update (20H2) as a guest OS
Windows 10 May 2021 Update (21H1), which is a bug fix release for Windows 10 October 2020 Update (20H2), is also supported.
- ▶ Support for Red Hat Enterprise Linux 8.3 as a guest OS
- ▶ Support for Citrix Virtual Apps and Desktops version 7 2012

Feature Support Withdrawn in Release 11.3

- ▶ Citrix Hypervisor 8.1 is no longer supported.
- ▶ Red Hat Enterprise Linux with KVM hypervisor 7.6 is no longer supported
- ▶ Red Hat Enterprise Linux 7.6 is no longer supported as a guest OS

1.12. Updates in Release 11.2

New Features in Release 11.2

- ▶ Miscellaneous bug fixes

Hardware and Software Support Introduced in Release 11.2

- ▶ Support for VMware Horizon 7.13

Feature Support Withdrawn in Release 11.2

- ▶ Red Hat Enterprise Linux 6.6 and CentOS 6.6 are no longer supported as a guest OS.

1.13. Updates in Release 11.1

New Features in Release 11.1

- ▶ Support for Multi-Instance GPU (MIG)-backed vGPUs on GPUs that support MIG on Linux with KVM and Red Hat Enterprise Linux with KVM hypervisors
- ▶ Support for GPUDirect[®] technology remote direct memory access (RDMA) on Linux with KVM and Red Hat Enterprise Linux with KVM hypervisors
- ▶ Security updates - see [Security Bulletin: NVIDIA GPU Display Driver - September 2020](#)
- ▶ Miscellaneous bug fixes

Hardware and Software Support Introduced in Release 11.1

- ▶ Support for the following GPUs:
 - ▶ NVIDIA A100 PCIe 40GB
 - ▶ NVIDIA A100 HGX 40GB
- ▶ Support for the following Red Hat hypervisor software releases
 - ▶ Red Hat Enterprise Linux with KVM hypervisor 7.9
 - ▶ Red Hat Virtualization (RHV) 4.4
- ▶ Support for the Red Hat Enterprise Linux 7.9 as a guest OS
- ▶ Support for Citrix Virtual Apps and Desktops version 7 2009

Feature Support Withdrawn in Release 11.1

- ▶ Windows Server 2012 R2 is no longer supported as a guest OS with GPUs based on architectures after NVIDIA Turing™ architecture.

1.14. Updates in Release 11.0

New Features in Release 11.0

- ▶ Cross-branch driver support

This change allows a release of the Virtual GPU Manager from a later major release branch to be used with the NVIDIA vGPU software graphics drivers for the guest VMs from the previous branch.
- ▶ Licensing grace period for unlicensed virtual GPUs and physical GPUs

An unlicensed virtual GPU or physical GPU initially operates at full capability but its performance is degraded over time if a license is not obtained.
- ▶ Miscellaneous bug fixes

Hardware and Software Support Introduced in Release 11.0

- ▶ Support for Citrix Hypervisor 8.2
- ▶ Support for Windows 10 May 2020 Update (2004) as a guest OS
- ▶ Support for Ubuntu 20.04 LTS as a guest OS on Citrix Hypervisor and VMware vSphere
- ▶ Support for Citrix Virtual Apps and Desktops 7 2006
- ▶ Support for VMware Horizon 2006 (8.0)

Feature Support Withdrawn in Release 11.0

- ▶ Citrix Hypervisor 8.0 is no longer supported.
- ▶ The following guest OS releases are no longer supported:
 - ▶ Windows Server 2012
 - ▶ Windows Server 2008 R2
 - ▶ Windows 8.1
 - ▶ Windows 8
 - ▶ Windows 7

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