



# What's New in Virtual GPU Software R470 for All Supported Hypervisors

Release Notes

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# 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 13.6

### New Features in Release 13.6

- ▶ 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

## 1.2. Updates in Release 13.5

### New Features in Release 13.5

- ▶ 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
- ▶ Support for non-transparent local proxy servers when NVIDIA vGPU software is served licenses by a Cloud License Service (CLS) instance
- ▶ Miscellaneous bug fixes

### Hardware and Software Support Introduced in Release 13.5

- ▶ 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)

## Features Deprecated in Release 13.5

The following table lists features that are deprecated in this release of NVIDIA vGPU software. Although the features remain available in this release, they might be withdrawn in a future release. In preparation for the possible removal of these features, use the preferred alternatives listed in the table.

Deprecated Feature	Preferred Alternatives	Additional Information
All versions of Microsoft Windows Server 2016 with Hyper-V role as a hypervisor.	<ul style="list-style-type: none"> <li>▶ Windows Server 2022 with Hyper-V role</li> <li>▶ Windows Server 2019 with Hyper-V role</li> </ul>	Support for Microsoft Windows Server 2016 is planned to be withdrawn by the end of March 2023.
All versions of Microsoft Windows Server 2016 as a guest OS.	<ul style="list-style-type: none"> <li>▶ Windows Server 2022</li> <li>▶ Windows Server 2019</li> </ul>	Support for Microsoft Windows Server 2016 is planned to be withdrawn by the end of March 2023.

## 1.3. Updates in Release 13.4

### New Features in Release 13.4

- ▶ 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 13.4

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

### Feature Support Withdrawn in Release 13.4

- ▶ Citrix XenServer 7.1 is no longer supported.
- ▶ VMware vSphere Hypervisor (ESXi) 6.7 and 6.5 are no longer supported.

## 1.4. Updates in Release 13.3

### New Features in Release 13.3

- ▶ 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 13.3

- ▶ 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 13.3

- ▶ 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.

## 1.5. Updates in Release 13.2

### New Features in Release 13.2

- ▶ 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 13.2

- ▶ 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 13.2

- ▶ 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.

## 1.6. Updates in Release 13.1

### New Features in Release 13.1

- ▶ Support for CUDA profilers on vGPUs on the following GPUs:
  - ▶ NVIDIA A40
  - ▶ NVIDIA A16
  - ▶ NVIDIA A10
  - ▶ NVIDIA RTX A6000
  - ▶ NVIDIA RTX A5000
- ▶ Support for CUDA profilers on MIG-backed vGPUs on the following GPUs on Linux with KVM and Red Hat Enterprise Linux with KVM:
  - ▶ NVIDIA A100 PCIe 80GB
  - ▶ NVIDIA A100 HGX 80GB
  - ▶ NVIDIA A100 PCIe 40GB
  - ▶ NVIDIA A100 HGX 40GB
  - ▶ NVIDIA A30
- ▶ NVIDIA Deep Learning Super Sampling (DLSS) support on NVIDIA RTX Virtual Workstation
- ▶ Support for vSphere Lifecycle Management (vLCM) on VMware vSphere ESXi
- ▶ Support for virtual PCIe topology discovery on VMware vSphere ESXi (requires VMware vSphere ESXi 7.0.3 or later)
 

The topology daemon generates virtual device topology mapping in Linux VMs for use by NVIDIA communication libraries.
- ▶ Security updates - see *Security Bulletin: NVIDIA GPU Display Driver - October 2021*, which is available on 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 13.1

- ▶ Support for the following releases of Ubuntu as a hypervisor:
  - ▶ Ubuntu 20.04 LTS
  - ▶ Ubuntu 18.04 LTS
- ▶ Support for Windows 11 21H2 as a guest OS
- ▶ Support for Citrix Virtual Apps and Desktops version 7 2109

## 1.7. Updates in Release 13.0

This release is not supported on Ubuntu.

### New Features in Release 13.0

- ▶ Support for the following NVIDIA CUDA Toolkit features on NVIDIA vGPU:
  - ▶ Development tools such as IDEs, debuggers, profilers, and utilities as listed under *CUDA Toolkit Major Components* in [NVIDIA CUDA Toolkit Release Notes for CUDA 11.4](#)
  - ▶ Tracing and profiling through the CUDA Profiling Tools Interface (CUPTI)
- ▶ Compatibility with the guest VM drivers from the previous long-term support branch (11)
- ▶ Single-slice GPU instances with decoder support on Red Hat Enterprise Linux with KVM
- ▶ NVIDIA License System support
- ▶ Miscellaneous bug fixes

### Hardware and Software Support Introduced in Release 13.0

- ▶ Support for the following GPUs:
  - ▶ NVIDIA A100 PCIe 80GB
  - ▶ NVIDIA A30
  - ▶ NVIDIA A16
- ▶ Support for Windows Server 2022 with Hyper-V role
- ▶ Support for Windows Server 2022 as a guest OS
- ▶ Support for Citrix Virtual Apps and Desktops version 7 2106
- ▶ Support for VMware Horizon 2106 (8.3)

### Feature Support Withdrawn in Release 13.0

- ▶ The following GPUs are no longer supported on VMware vSphere:
  - ▶ NVIDIA A100 HGX 80GB
  - ▶ NVIDIA A100 PCIe 40GB
  - ▶ NVIDIA A100 HGX 40GB

Instead, these GPUs are supported on VMware vSphere with NVIDIA AI Enterprise.

- ▶ NVIDIA Virtual Compute Server (vCS) is no longer supported on VMware vSphere and C-series vGPU types are no longer available. Instead, vCS is supported on VMware vSphere with NVIDIA AI Enterprise.
- ▶ The base VMware vSphere 7.0 release and VMware vSphere 7.0 Update 1 are no longer supported.

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