NVIDIA VIRTUAL GPU PACKAGING, PRICING AND LICENSING

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TERMINOLOGY

Term	Meaning
SUMs	Support, Upgrade and Maintenance program
Perpetual License	A non-expiring, permanent software license that can be used on a perpetual basis without a need to renew. First year of SUMS is required.
Annual Subscription	A software license that is active for a fixed period as defined by the terms of the subscription license, typically yearly. This includes SUMS for the duration of the license term.
License Manager	An application that manages license allocation, installed on a physical or virtual server.
Concurrent User (CCU)	A method of counting licenses based on active user VMs. If the VM is active and the NVIDIA Virtual GPU Software is running, then this counts as one CCU. A Virtual GPU CCU is independent of the connection to the VM.

OVERVIEW

NVIDIA virtual GPU solutions deliver accelerated virtual desktops and applications from the data center to any user, on any device, anywhere.

This guide covers the entitlement, packaging and licensing of the NVIDIA virtual GPU family of products. It is intended to be a quick reference to understand the product portfolio at a high level, with the corresponding SKU information. It does not contain detailed product information, which can be accessed from the GRID website at http://www.nvidia.com/grid. This document is not intended to replace or contradict the End User License Agreement (EULA). Please refer to the EULA (here) for more detailed information.

NVIDIA Virtual GPU Software Editions	
NVIDIA GRID Virtual Applications	For organizations deploying Citrix XenApp, VMware Horizon RDSH or other RDSH solution. Designed for PC level applications and server based desktops.
NVIDIA GRID Virtual PC	For users who want a virtual desktop but need great user experience leveraging PC Windows® applications, browsers, and high definition video.
NVIDIA Quadro Virtual Datacenter Workstation	For users who want to be able to use remote professional graphics applications with full performance on any device, anywhere.

NVIDIA virtual GPU solutions bring graphics and virtualization capabilities to NVIDIA Tesla data-center deployments, and is currently supported on the following Tesla GPUs. Find certified servers with Tesla GPUs that are supported by GRID at http://www.nvidia.com/grid-certified-servers.

GRID Supported GPU	Tesla M10	Tesla M60	Tesla M6
Use case	User Density-Optimized	Performance-Optimized	Blade-Optimized
Number of GPUs	4 NVIDIA Maxwell GPUs	2 NVIDIA Maxwell GPUs	1 NVIDIA Maxwell GPU
Total NVIDIA CUDA® Cores	2,560 (640 per GPU)	4,096 (2,048 per GPU)	1,536
Total Memory Size	32 GB GDDR5 (8 GB per GPU)	16 GB GDDR5 (8 GB per GPU)	8 GB GDDR5
Max Power	225 W	300 W	100 W
Form Factor	PCIe 3.0 Dual Slot	PCIe 3.0 Dual Slot	MXM
Board Dimensions	10.5" x 4.4"	10.5" x 4.4"	3.2" x 4.1"
Cooling Solution	Passive	Passive / Active	Bare Board

GRID Supported GPU	Tesla P40	Tesla P6	Tesla P100	Tesla P100 PCIe	Tesla P4
Use case	Performance-Optimized	Blade-Optimized	Performance-Optimized	Performance-Optimized	Performance-Optimized
Number of GPUs	1 NVIDIA Pascal GPU	1 NVIDIA Pascal GPU	1 NVIDIA Pascal GPU	1 NVIDIA Pascal GPU	1 NVIDIA Pascal GPU
Total NVIDIA CUDA® Cores	3840	2048	3584	3584	2560
Total Memory Size	24 GB GDDR5	16 GB GDDR5	16 GB HBM2	16 GB HBM2	8 GB GDDR5
Max Power	250 W	90 W	300 W	250 W	50 W/75 W
Form Factor	PCIe 3.0 Dual Slot	MXM	SXM2	PCIe 3.0 Dual Slot	PCIe 3.0 Single Slot (HH & HL)
Board Dimensions	10.5" x 4.4"	3.2" x 4.1"	5.5” x 3”	10.5" x 4.4"	6.6” x 2.7”
Cooling Solution	Passive	Bare Board	Bare Board	Passive	Passive

GENERAL PURCHASING INFORMATION

NVIDIA Virtual GPU Software products can be purchased through NVIDIA Preferred Partners and select server OEMs. A list of these Preferred Partners and OEMS can be obtained from: http://www.nvidia.com/buygrid.

All three NVIDIA Virtual GPU Software products can be purchased as either perpetual licenses with yearly Support Updates and Maintenance agreement (SUMS), or as an

annual subscription. The perpetual license gives the user the right to use the software indefinitely, with no expiration. All NVIDIA Virtual GPU Software products with perpetual licenses must be purchased in conjunction with a minimum of one year of SUMS. This subscription can be renewed on a yearly basis.

The annual subscription offering is a more affordable option to allow IT departments to better manage the flexibility of license volumes. NVIDIA Virtual GPU Software products with annual subscription are bundled with SUMS for the duration of the software's subscription license.

	FEATURES
Maintenance	Access to all maintenance releases, defect resolutions, and security patches for flexibility in upgrading for up to 3 years from general availability of the major version.
Upgrades	Access to all new major version releases including feature enhancements and new hardware support
Direct support	Direct access to NVIDIA support engineering for timely resolution of customer-specific issues
Support availability	Week day business hours (PST)
Support response time	Up to 1 business day
Knowledgebase access	✓
Web support	✓
E-mail support	✓
Phone support	✓

VIRTUAL GPU SOLUTIONS DETAILS

NVIDIA virtual GPU solutions are the industry's most advanced technology for sharing true virtual GPU (vGPU) hardware acceleration between multiple users—without compromising the graphics experience. This virtualization technology ensures complete application compatibility which means features and experience are the same as they would be on a physical device.

1.1 NVIDIA VIRTUAL GPU SOFTWARE EDITIONS

NVIDIA vGPU desktop and application virtualization solutions are designed to bring the power of virtualization to the users who need to be their most productive. vGPU

technology ensures application compatibility, meaning any application that can run in a physical desktop can run in a virtual environment. Organizations can now expand their virtualization footprint without compromise.

NVIDIA virtual GPU solutions are available in three editions: GRID Virtual PC (vPC), Quadro Virtual Datacenter Workstation (vDWS), and GRID Virtual Application (vApp).

GRID Virtual PC

This product is ideal for users who want a virtual desktop but need great user experience leveraging PC Windows® applications, browsers and high definition video. NVIDIA GRID Virtual PC delivers a native experience to users in a virtual environment, allowing them to run all of their PC applications at full performance.

Quadro Virtual Datacenter Workstation

This edition is ideal for mainstream and high-end designers who use powerful 3D content creation applications like Dassault CATIA, SOLIDWORKS, and 3DExcite, Siemens NX, PTC Creo, Schlumberger Petrel, or Autodesk Maya. NVIDIA Quadro Virtual Datacenter Workstation allows users to access their professional graphics applications with full features and performance, anywhere, on any device.

GRID Virtual Applications

For organizations deploying Citrix XenApp, VMware Horizon RDSH or other RDSH solutions. Designed to deliver PC Windows® applications at full performance. NVIDIA GRID Virtual Applications allows users to access any Windows® application at full performance on any device, anywhere.

This edition is suited for users who would like to virtualize applications using XenApp or other RDSH solutions. Windows® Server hosted RDSH desktops are also supported by vApps.

1.2 NVIDIA VIRTUAL GPU SOFTWARE EDITIONS AND ENTITLEMENT

NVIDIA Virtual GPU Software is licensed per concurrent user. Each product includes the following feature entitlement:

Feature	GRID Virtual Apps	GRID Virtual PC	Quadro Virtual Datacenter Workstation
License Entitlement			
Concurrent User (CCU)	Yes	Yes	Yes
Capability Entitlement			
Desktop Virtualization		Yes	Yes
RDSH App Hosting	Yes	Yes	Yes
Windows Guest OS	N/A	Yes	Yes
Linux Guest OS	N/A		Yes
Maximum Displays	N/A	4	4
Maximum Resolution	N/A	2560*1600	4096*2160 (4K)
NVIDIA Quadro Software Feature			Yes
CUDA & OpenCL Supported[1]			Yes
GPU Pass-through Supported[1]	Yes		Yes
BareMetal Supported[2]	Yes		Yes
vGPU Profiles Supported			
512 MB[3]		Yes	Yes
1 GB	Yes	Yes	Yes
2 GB	Yes		Yes
3 GB[4]	Yes		Yes
4GB	Yes		Yes
6GB[4]	Yes		Yes
8 GB	Yes		Yes
12 GB[4]	Yes		Yes
16 GB[5]	Yes		Yes

24 GB[4]	Yes		Yes

[1] Supported only on 8GB 1:1 profiles in Tesla Maxwell cards
[2] Only NVIDIA Tesla M6 Hardware supported as primary display device
[3] Not supported in Tesla Pascal cards
[4] Supported in Tesla P40 cards only
[5] Supported in Tesla P100 and P6 cards only

NVIDIA VIRTUAL GPU SOFTWARE LICENSING AND PRICING

GRID Virtual PC, Quadro Virtual Datacenter Workstation and GRID Virtual Applications are available on a per Concurrent User (CCU) model. A CCU license is required for every user who is accessing or using the software at any given time, whether or not an active connection to the virtualized desktop or session is maintained.

NOTE: CCU is a method of counting licenses based on active user VMs. If the VM is active and the NVIDIA Virtual GPU Software is running, then this counts as one CCU. A virtual GPU CCU is independent of the connection to the VM.

NVIDIA Virtual GPU Software editions can be purchased as either perpetual licenses with annual Support Updates and Maintenance Subscription (SUMS), or as an annual subscription. The first year of SUMS is required with purchase of a perpetual license and can then be purchased as a yearly subscription. For annual licenses SUMS is bundled into the annual license cost.

NVIDIA Virtual GPU Software Pricing is listed in the tables below, find the full SKU list here. Pricing is suggested pricing only, contact your authorized NVIDIA partner for final pricing.

1.1 SUBSCRIPTION CONCURRENT USER LICENSE

An annual subscription is active for a fixed period as defined by the terms of the subscription license. To be kept active, the license will need to be renewed at the end of the subscription period. The subscription license includes the software license and production level SUMS for the duration of the license subscription period.

Annual Subscription Pricing	
GRID Virtual Applications	$10 per CCU subscription
GRID Virtual PC	$50 per CCU subscription
Quadro Virtual Datacenter	$250 per CCU subscription

Workstation	

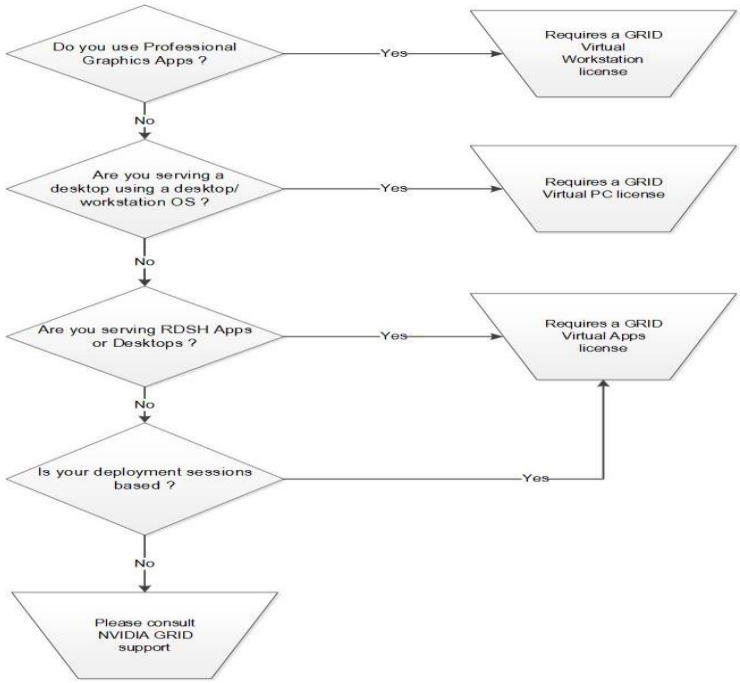
1.2 PERPETUAL CONCURRENT USER LICENSE

A perpetual license allows for use of the licensed software indefinitely. Users that opt to license using this model are required to subscribe to SUMS for the first year. The SUMS subscription can renewed on a yearly basis after the expiring of the initial subscription.

Perpetual Licensing + SUMS Pricing	
GRID Virtual Applications	$20 per CCU perpetual license
	$5 SUMS
GRID Virtual PC	$100 per CCU perpetual license
	$25 SUMS
Quadro Virtual Datacenter Workstation	$450 per CCU perpetual license
	$100 SUMS

1.3 DECIDING THE RIGHT LICENSE BASED ON CAPABILITY AND ENTITLEMENT

The following flowchart provides a simple decision tree to help decide which license is required based on the desired entitlement and capability. If you have further questions or are unable to decide based on the decision tree, please contact NVIDIA GRID Support at http://www.nvidia.com/gridsupport.



The below table summarizes some common use cases of different solutions. This is not an all-inclusive list of possible solutions. If you have questions, please contact NVIDIA GRID Support.

I am using…	I need this license…
Citrix XenDesktop	Virtual PC – for PC level applications Quadro Virtual Datacenter Workstation – for workstation/professional 3D use cases
VMware Horizon (View)	Virtual PC – for PC level applications Quadro Virtual Datacenter Workstation – for workstation/professional 3D use cases
Citrix XenApp	Virtual PC – for PC level applications Quadro Virtual Datacenter Workstation – for workstation/professional 3D use cases
VMware Horizon RDSH	Virtual PC – for PC level applications Quadro Virtual Datacenter Workstation – for workstation/professional 3D use cases

Other RDSH	Virtual PC – for PC level applications Quadro Virtual Datacenter Workstation – for workstation/professional 3D use cases
Microsoft RemoteFX	Virtual PC – for PC level applications
VMware Horizon vSGA	Virtual PC – for PC level applications
VMware Horizon vDGA	Quadro Virtual Datacenter Workstation, Virtual Application
Microsoft Hyper-V (DDA)	Quadro Virtual Datacenter Workstation, Virtual Application

1.4 NVIDIA LICENSE MANAGER

NVIDIA Virtual GPU Software requires NVIDIA License Manager to be installed and running to manage allocation of CCU licenses. A license is checked out from the license manager pool when GRID VM boots up, and is returned when the VM shuts down. Once the license is checked out, the VM can continue to use it without any connectivity to the license server for up to 7 days. To help maintain continued access to GRID in an event of license manager or network error, an option to deploy a backup license manager is also available. The backup license manager can serve licenses to GRID VMs if primary license manager fails.

NVIDIA Virtual GPU Software requires NVIDIA License Manager to be installed and running to manage allocation of CCU licenses. License manager and the license file can be downloaded along with NVIDIA Virtual GPU from the NVIDIA Licensing Portal. For details on how to install licenses, refer to the GRID Quick Start Guide.

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