S8675
Latest Innovations In Graphics Virtualization With Citrix and NVIDIA

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MARCH 2018
User Experience
New Demands for Graphics

• Professional graphics and AR/VR
  – Always keen on improvements in visual quality and performance
  – 4K monitors becoming popular (bandwidth impact)
  – Augmented Reality (AR) and Virtual Reality (VR) market growing at 58% CAGR

• Knowledge workers
  – Windows 10 experiences
  – Virtual web browsers
  – High DPI displays becoming common
  – High Availability (HA) of graphics acceleration critical as it becomes mainstream
The previous VDA install mode selection...

HDX 3D Pro

HDX 3D Mode is recommended for data center machines with graphics hardware (GPU).

**Configuration**

**Install the Virtual Delivery Agent (VDA) in HDX 3D Pro mode?**

- No, install VDA in standard mode
  - Recommended for most VDI deployments with standard office applications and for Remote PC Access.

- Yes, install VDA in HDX 3D Pro mode
  - Recommended for data center machines with GPUs and graphic intensive applications (3D rendering), using the GPU vendor's driver. Refer to Citrix documentation for compatible display graphics hardware.
Simplified Handling of Graphics

Unified VDA installation package with XenApp and XenDesktop 7.16+

User Policy Setting

GPU automatically used when present

Optimize for 3D graphics workload

Standard VDA

HDX 3D Pro VDA

Unified VDA Installer
H.265 High Efficiency Video Coding

Full-screen in 7.16, “Selective H.265” NVENC coming in 7.17

New Platinum Edition feature

Car visualizer workload:
- Better image quality
- ~25% bandwidth reduction compared to H.264

http://carvisualizer.plus360degrees.com/threejs/

Hardware encode & decode

Up to 40% Bandwidth Savings
HDX Monitor Tool
& NVIDIA-SMI

C:\Program Files\NVIDIA Corporation\NVSMI>nvidia-smi encodersessions

# GPU Session Process     # Idx  Id  Id
0   314  852

Codec Type
H.265

Component_PREFERRED_VideoCodecType
H.265
BEST USER EXPERIENCE WITH NVIDIA GRID
Local like latency at high scale with NVIDIA GRID

~216ms decrease in End User Latency

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~74% better consistency in End User Latency

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Test Configuration: Dell EMC R740, 2 x 20 Intel Xeon Gold 6148 CPU @ 2.40 GHz (HT & Turbo), 512 GB RAM, 2 x NVIDIA Tesla M10 GPU, XenDesktop 7.15 LTSR
NVIDIA GRID VGPU INCREASES USER DENSITY

Up to ~37% reduction in CPU utilization with NVIDIA GRID

ESX Server - % Core Utilization (Steady State)

Cirrus Knowledge Worker Workload (Excel, Word, PowerPoint, Chrome, Media Player, PDF)
Monitoring GPU Performance in XenApp and XenDesktop

• Director web-based console
• Version 7.14+
• GPU utilization
• GPU RAM
• Encoder/Decoder
• NVIDIA Tesla M60 cards
High Availability for Graphics-accelerated Sessions

Live migrate running VMs between XenServer hosts with NVIDIA vGPU XenMotion

Tech Preview Requirements

- XenServer 7.3
- NVIDIA Pascal family of GPUs
- NVIDIA GRID VPC software license
- Windows workloads
Resources

• HDX Landing Page
  – www.citrix.com/hdx

• HDX Blogs
  – www.citrix.com/blogs/tag/hdx/

• HDX YouTube Videos
  – bit.do/CitrixHDVVideos
Don’t miss these other sessions...

• S8646 - Autodesk BIM Cloud Workspace on Azure and Citrix Customer Panel Discussion
  – Wednesday, Mar 28, 10:00 AM - 10:50 AM Room 231

• S8821 - Leveraging NVIDIA Quadro vDWS and Citrix XenDesktop with Enlightened Data Transport Globally.
  – Thursday, Mar 29, 4:00 PM - 4:50 PM Room 231