A Brand New Idea...
“BYOD” Movement

Windows PCs

Tablets and Smartphones

Mac PCs
Enterprise Computer Users

- DESIGNER (CATIA, CS6, Inventor) 25M
- POWER USER (PLM, Med Img, Showcase) 200M
- KNOWLEDGE WORKER (MS Office, Photoshop) 400M
- TASK WORKER (Call Center Apps) 100M
DESIGNER
(CATIA, CS6, Inventor)

POWER USER
(PLM, Med Img, Showcase)

KNOWLEDGE WORKER
(MS Office, Photoshop)

TASK WORKER
(Call Center Apps)
DESIGNER (CATIA, CS6, Inventor)

POWER USER (PLM, Med Img, Showcase)

KNOWLEDGE WORKER (MS Office, Photoshop)

TASK WORKER (Call Center Apps)

PC

GPU Pass-through

NVIDIA VGX

API Intercept (DX9)

Software (CPU) Rendered Graphics
- Citrix HDX 3D Pro
- HP RGS
- NICE
- Schlumberger LiveQuest
- TeamViewer
- ...

- Consumer Applications
  - Splashtop
  - GoToMyPC
Software (CPU) Rendered Graphics

Hypervisor

Virtual Machine

Guest OS
- Apps
- Virtual Desktop
- Remote Protocol
- Software Graphics
- Software Encoder
GPU Pass-through

Hypervisor

Virtual Machine

Guest OS
- Apps
- Virtual Desktop
- Remote Protocol

NVIDIA Driver

NVIDIA GPU
GPU Pass-through

Hypervisor

Virtual Machine
- Guest OS
  - Apps
  - Virtual Desktop
    - Remote Protocol
- NVIDIA Driver

NVIDIA GPU

NVIDIA GPU
• Citrix XenServer 6
• VMware ESX - Coming Soon
• Parallels Workstation 6 Extreme

• Citrix XenDesktop 5.6
• VMware View - Coming Soon

GPU Pass-through

Hypervisor

Virtual Machine

Guest OS
- Apps
- Virtual Desktop

NVIDIA Driver

Remote Protocol

NVIDIA GPU
API Intercept

Hypervisor

NVIDIA Driver

Translation, Execution, Readback

Virtual Machine

Guest OS

Apps

Virtual Desktop

Remote Protocol

API Capture Driver (DX9)

NVIDIA GPU
Hypervisor
- Microsoft Server 2008 HyperV
- VMware ESX - Coming Soon

Virtual Desktop
- Microsoft RemoteFX
- VMware View - Coming Soon

API Intercept

NVIDIA GPU
NVIDIA® VGX™ Platform
Frees Users to Run A True PC as a Service From Any Connected Device

**VGX Board**
World’s First Virtualized GPU

**VGX HyperVisor**
True Virtual PC, Running Any App

**User Selectable Machines**
Enterprise Manageability
KEPLER
THE WORLD’S FIRST GPU for CLOUD COMPUTING

Virtualized GPU
Low Latency Remote Display
Super energy-efficiency
NVIDIA® VGX™ Board

**Hardware Virtualization**
Four GPUs, 16GB of Frame Buffer

**Low Latency Remote Display**
Dedicated h.264 Encoder

**Datacenter Efficiency**
New SMX Shader Design, Passively Cooled
NVIDIA VGX Remote Display

SYSTEM MEMORY

1. FB
2. GFX API
3. DRIVER
4. GPU

RGB → YUV

H.264 Encode

NIC

SYSTEM MEMORY

1. FB
2. GPU
3. GFX API
4. DRIVER

NVENC

NIC
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GPU Pass-through

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Software (CPU) Rendered Graphics
Thank You