

Graphics in the Cloud

Will Wade, NVIDIA VGX Product Line Manager

GTC | San Jose Convention Center | May 15, 2012

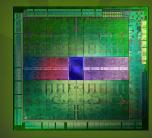
A Brand New Idea...

Graphics

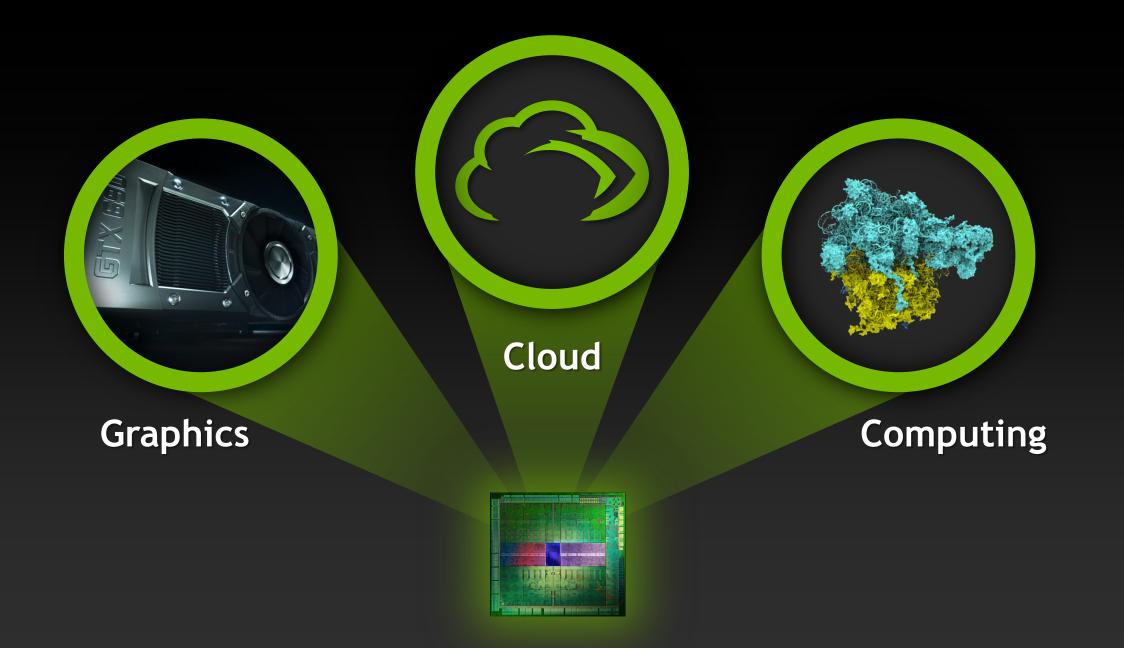
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G1% 協調



Computing



"BYOD" Movement







Windows PCs

Tablets and Smartphones

Mac PCs

Enterprise Computer Users





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DESIGNER (CATIA, CS6, Inventor) **25**M

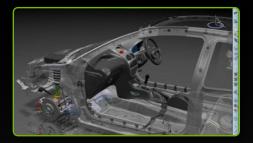
POWER USER (PLM, Med Img, Showcase) 200M

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)



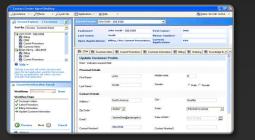
DESIGNER (CATIA, CS6, Inventor)



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POWER USER (PLM, Med Img, Showcase)

KNOWLEDGE WORKER (MS Office, Photoshop)



TASK WORKER (Call Center Apps)

GPU Passthrough

PC

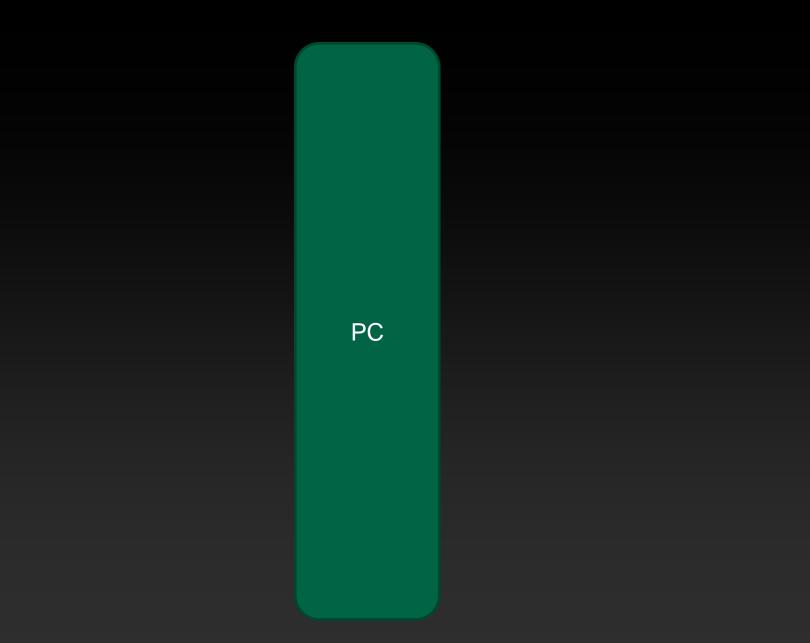
Software (CPU) Rendered Graphics

NVIDIA VGX

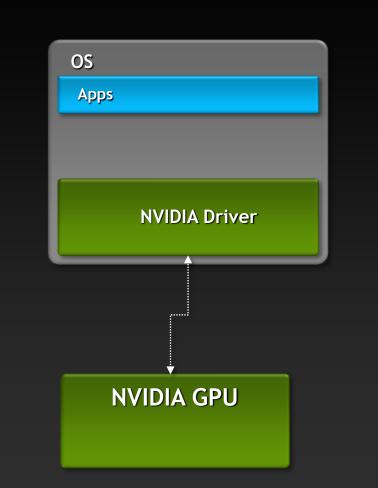
API

Intercept

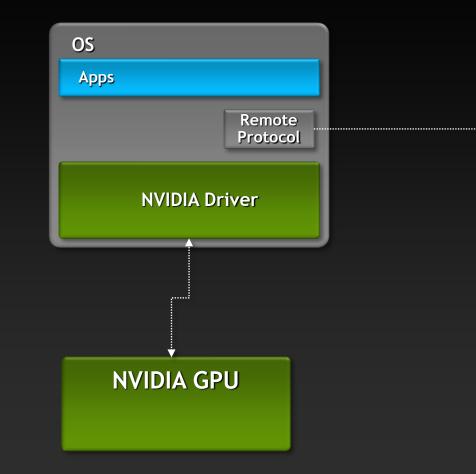
(DX9)







PC



- Citrix HDX 3D Pro
- HP RGS
- NICE
- Schlumberger LiveQuest
- TeamViewer

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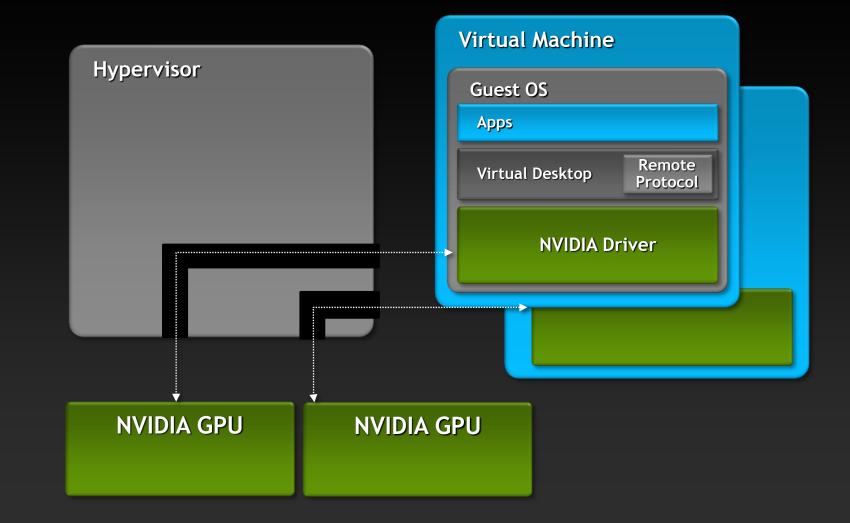
- Consumer Applications
 - Splashtop
 - GoToMyPC

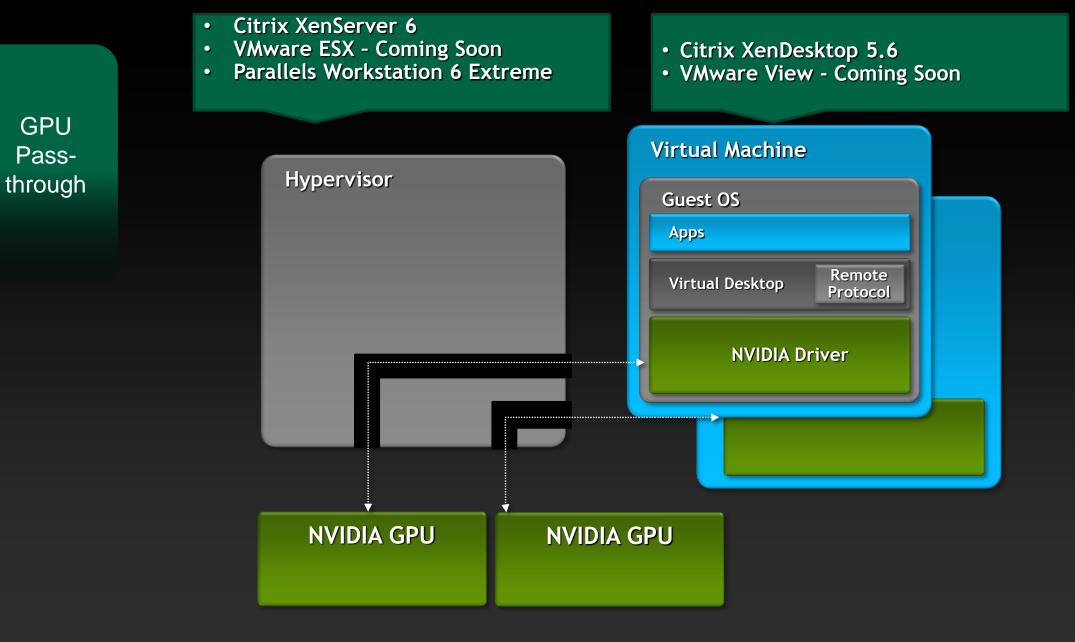
	Hypervisor		V	irtual Machine		
				Guest OS Apps		
				Virtual Desktop	Remote Protocol	
				Software Gra Software En	aphics coder	
Software (CPU) Rendered						
Graphics	CPU					

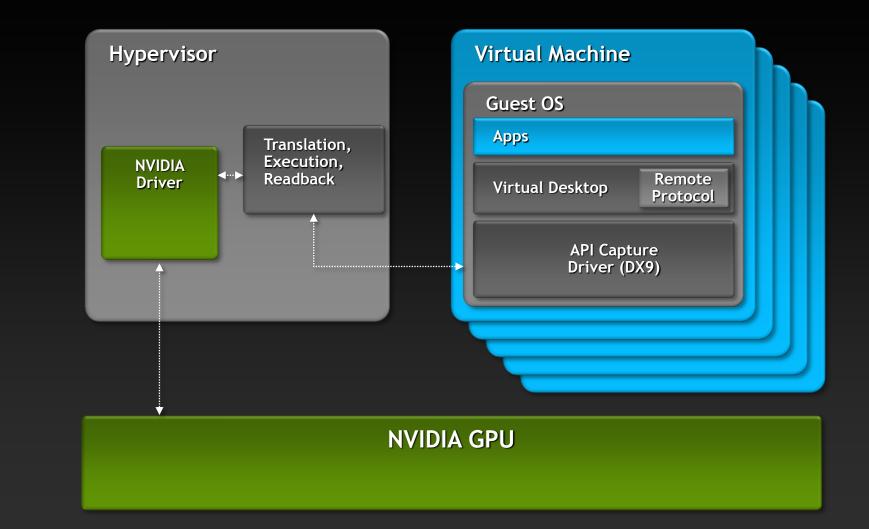
GPU Passthrough

	Virtual Machine	
Hypervisor	Guest OS	
	Аррз	
	Virtual Desktop	Remote Protocol
	NVIDIA Dr	iver
NVIDIA GPU		

GPU Passthrough







API Intercept

Hypervisor

- Microsoft Server 2008 HyperV
- VMware ESX Coming Soon

Virtual Desktop

- Microsoft RemoteFX
- VMware View Coming Soon

NVIDIA GPU

API Intercept



NEW!



NVIDIA VGX

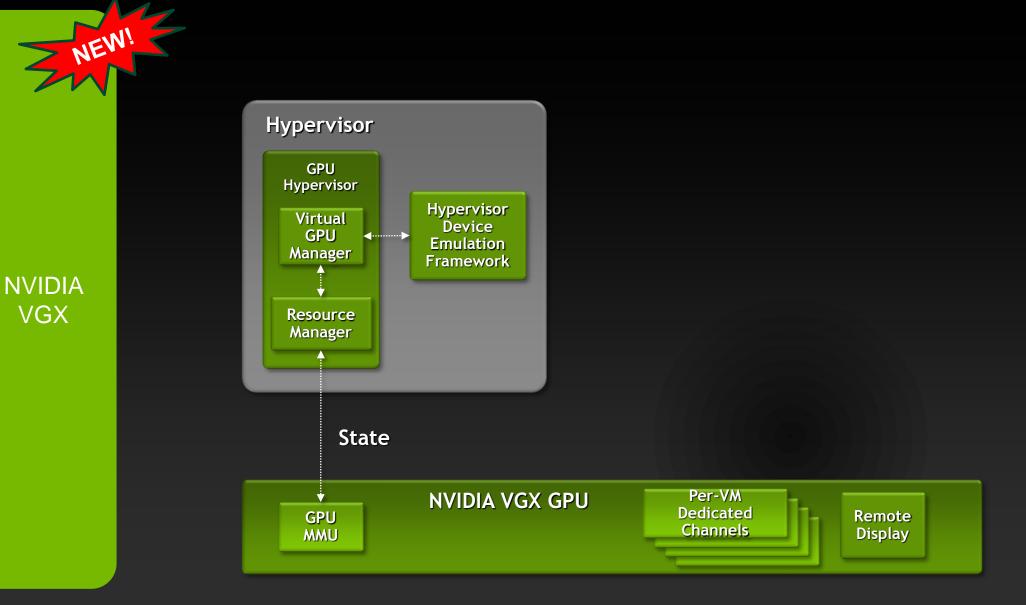


GPU MMU

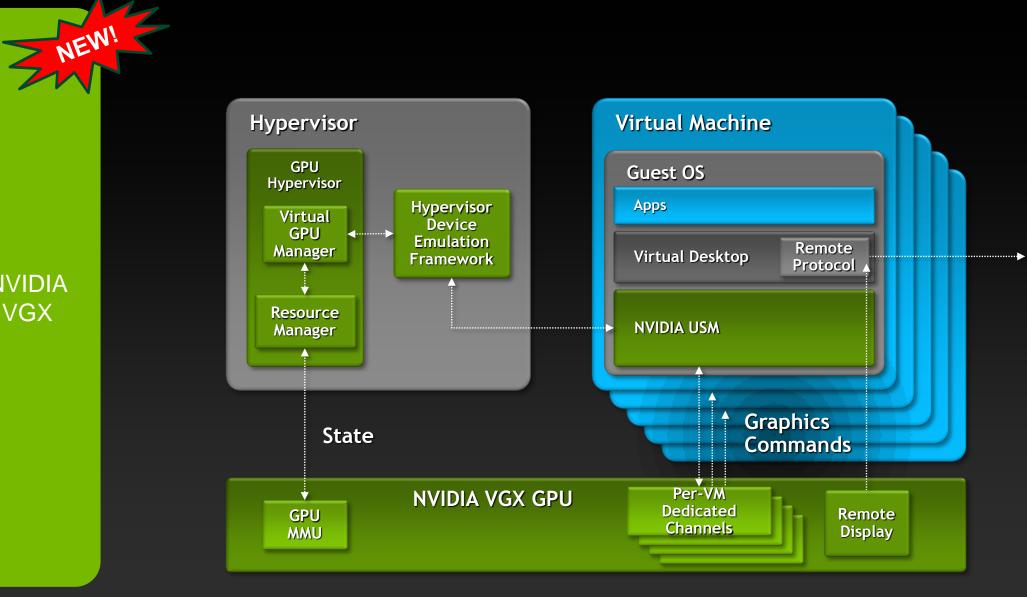
Per-VM
Dedicated
Channels

Remote Display

NVIDIA VGX



NVIDIA VGX



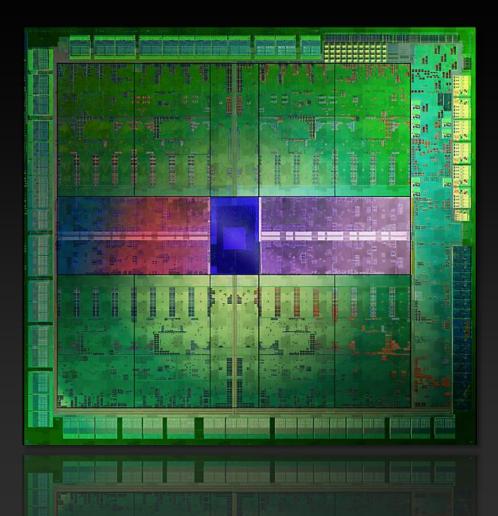
NVIDIA® VGXTM Platform Frees Users to Run A True PC as a Service From Any Connected Device

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

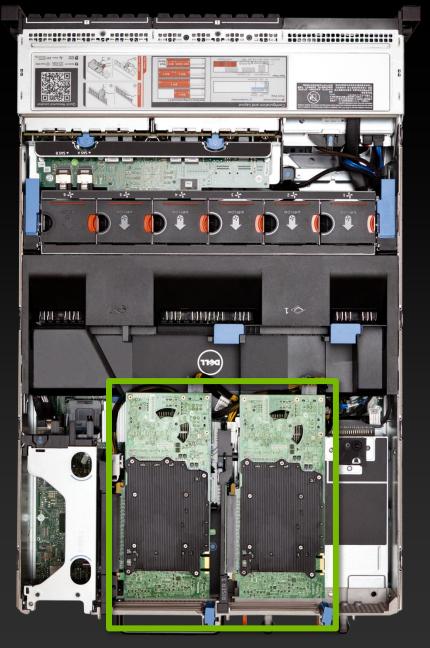
NVIDIA[®] VGX[™] Board

Hardware Virtualization Four GPUs, 16GB of Frame Buffer

Low Latency Remote Display Dedicated h.264 Encoder

Datacenter Efficiency New SMX Shader Design, Passively Cooled











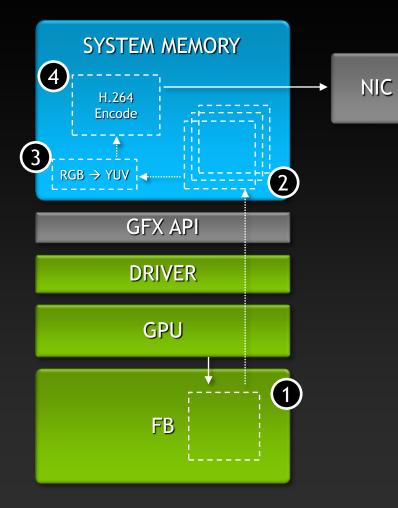




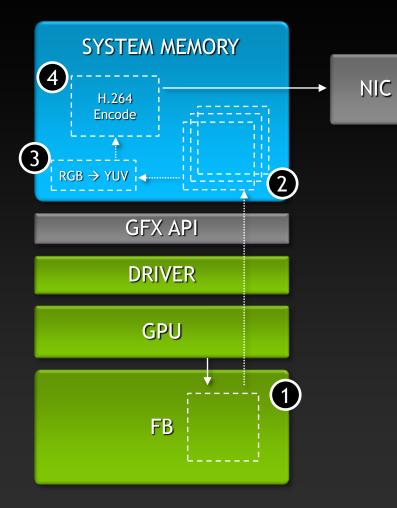


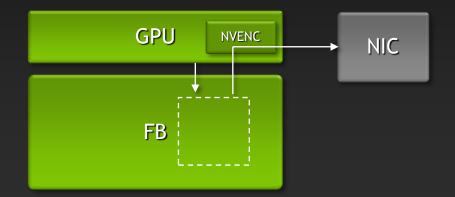


NVIDIA VGX Remote Display



NVIDIA VGX Remote Display







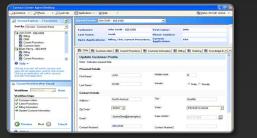
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TASK WORKER (Call Center Apps) GPU Passthrough

Software (CPU) Rendered Graphics NVIDIA VGX

API

Intercept

(DX9)

Thank You