

# Iray plug-ins & mental ray for Maya



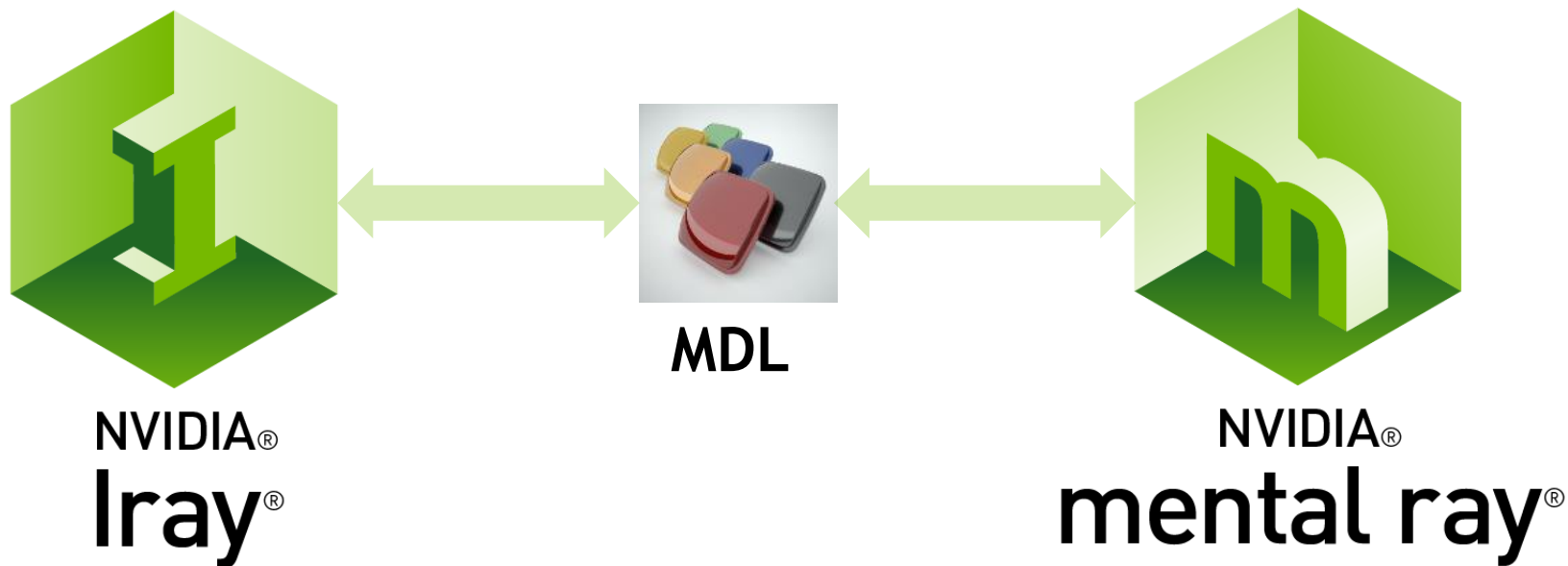
Phillip Miller & Peter De Lappe

SIGGRAPH 2016

July 26, 2016

# NVIDIA Iray and mental ray

Bookends covering the widest range of rendering needs



- For the Design Industry
- NVIDIA's best solution for designers wanting to predict and present their designs
- For the M&E Industry
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# NVIDIA Iray®

Used Across the Industry for 7 Years

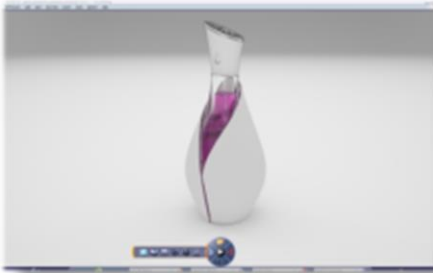
The renderer of choice by major software companies for their industry leading products

- Used in flagship products like Dassault Systems Catia, SolidWorks and Siemens NX
- Also in mainstream products like Substance Designer & Painter and DAZ Studio
- Used in custom applications within major corporations for critical decision making (Honda, Lockheed Martin, Old Castle, etc.)



# NVIDIA Iray

## Shipping Integrally within Commercial Products



Catia V6 and  
Industrial Designer



3ds Max (in mental ray)



DAZ Studio



Patchwork 3D

**SOLIDWORKS**



Visualize

**SIEMENS PLM**



NX 11

migenius



SketchUp



Substance Designer & Painter



# BUT APPLICATION OPPORTUNITIES ARE INFREQUENT



**NVIDIA now Providing Iray Directly to End Users**

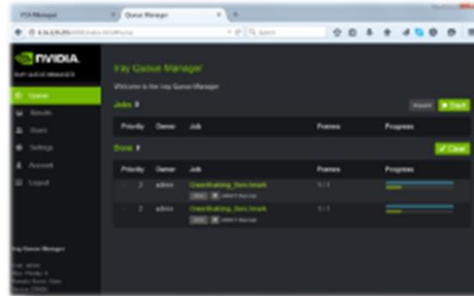
Enabling Everyone with the Latest Iray Technology and Capabilities

# NVIDIA Iray Plug-In Offerings

## Bringing the Very Latest Iray Technology



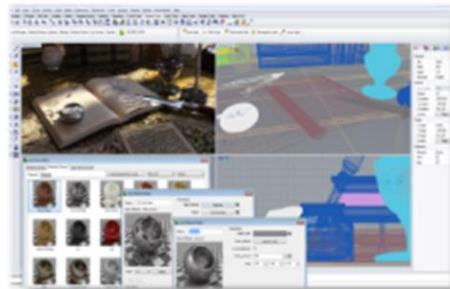
Iray for 3ds Max  
(2015, 2016, 2017)



Iray Server  
(Win & Linux)



Iray for Maya  
(2016, 2017, Win & Linux))



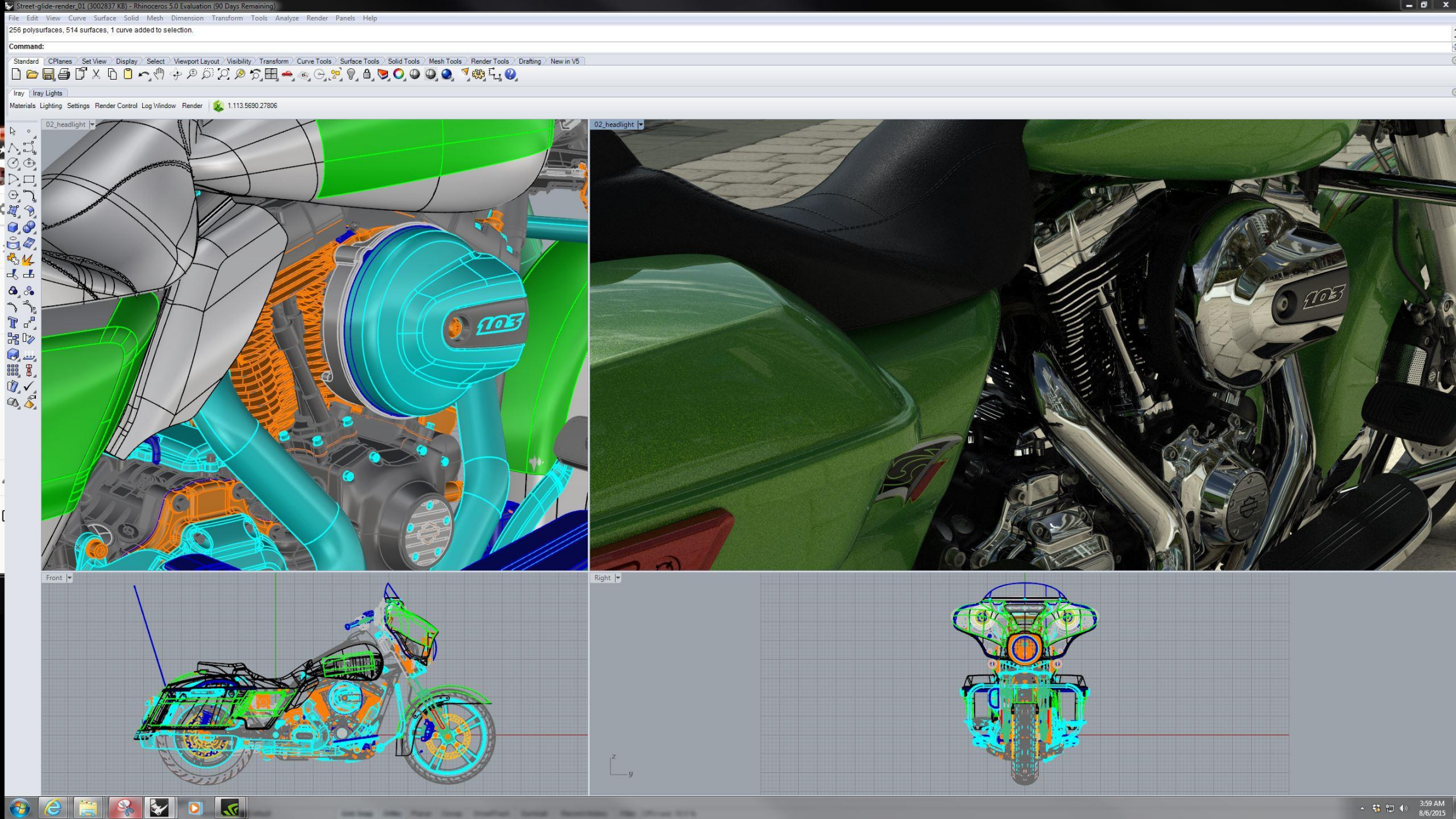
Iray for Rhino  
(v5 Windows)



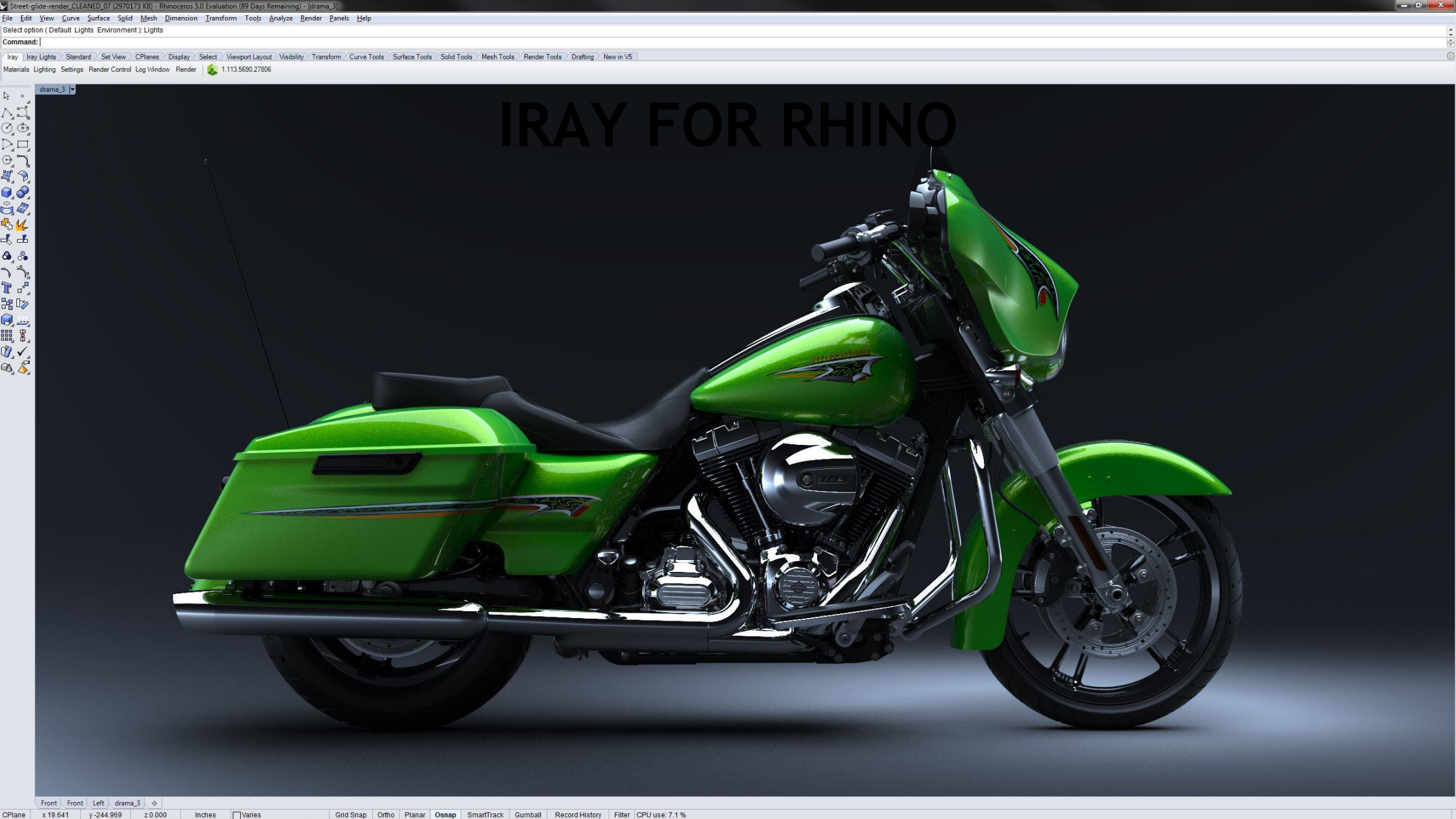
Iray for Cinema 4D  
(Win & Mac)



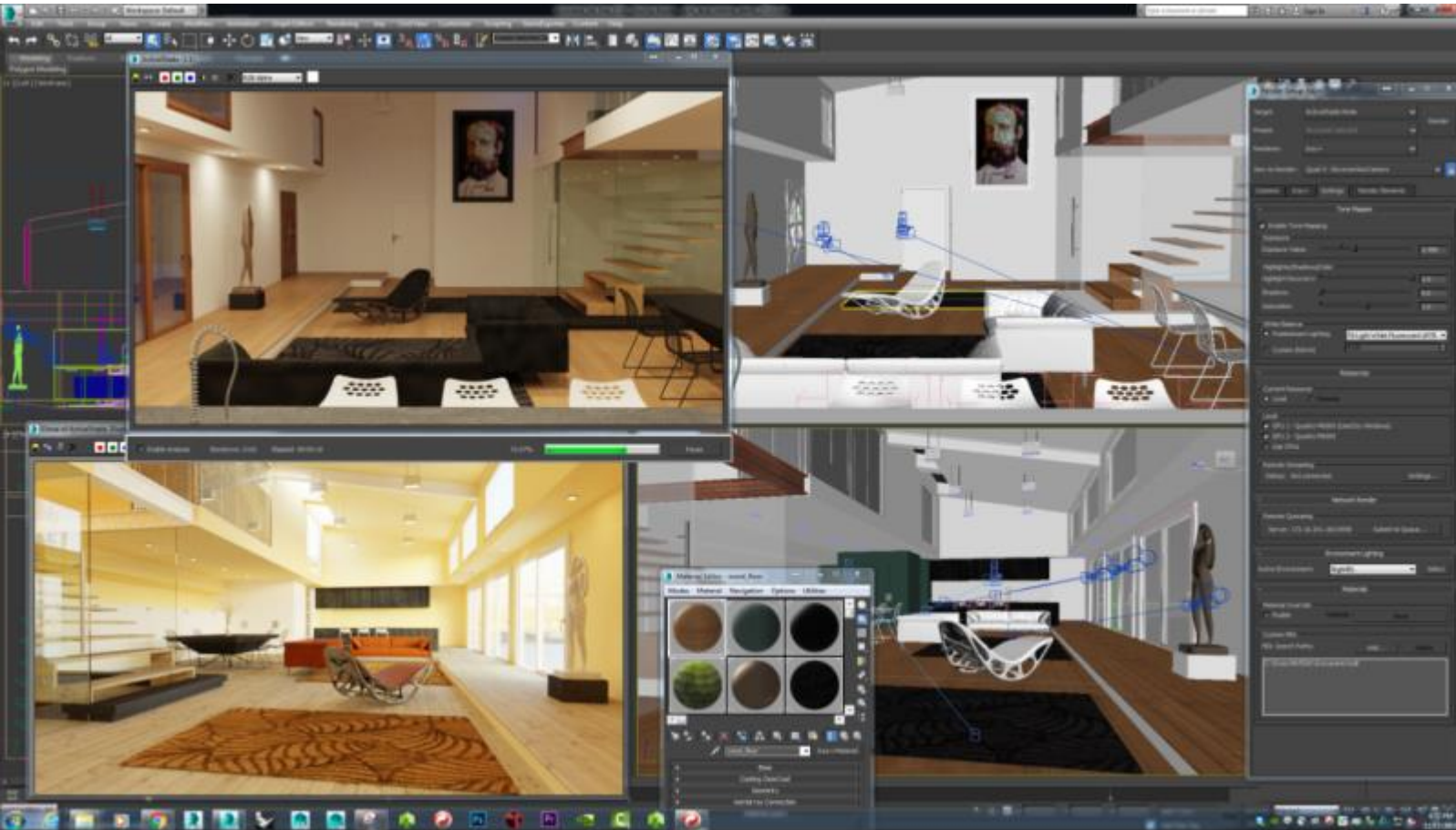








# Bringing the “Full” Iray to 3ds Max



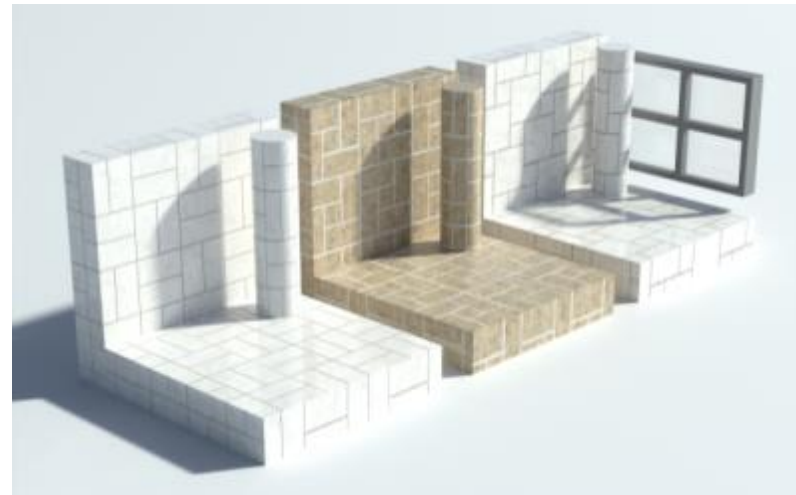
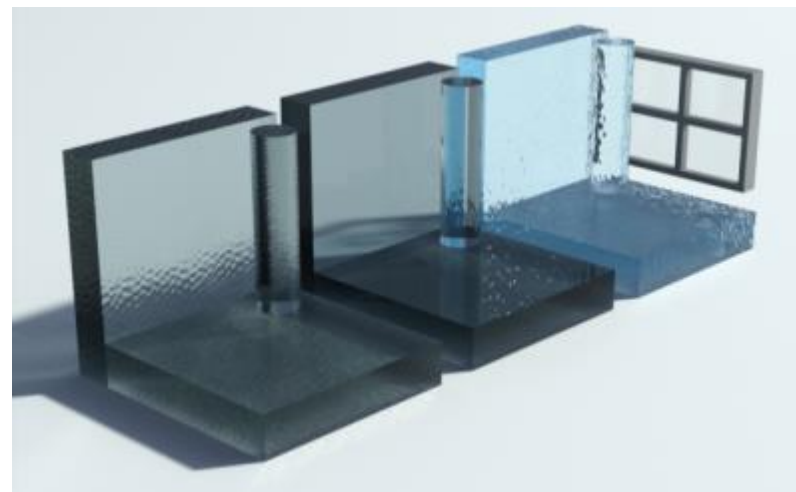
Improvements over native:

- Faster interaction & “start up”
- New fast ray tracing mode
- MDL materials and layering
- MDL import/export
- VR Camera Support
- Distributed rendering to Iray Server cluster or VCAs
- Remote streaming to Iray Server machine or VCAs



# vMaterials - Verified for Accuracy

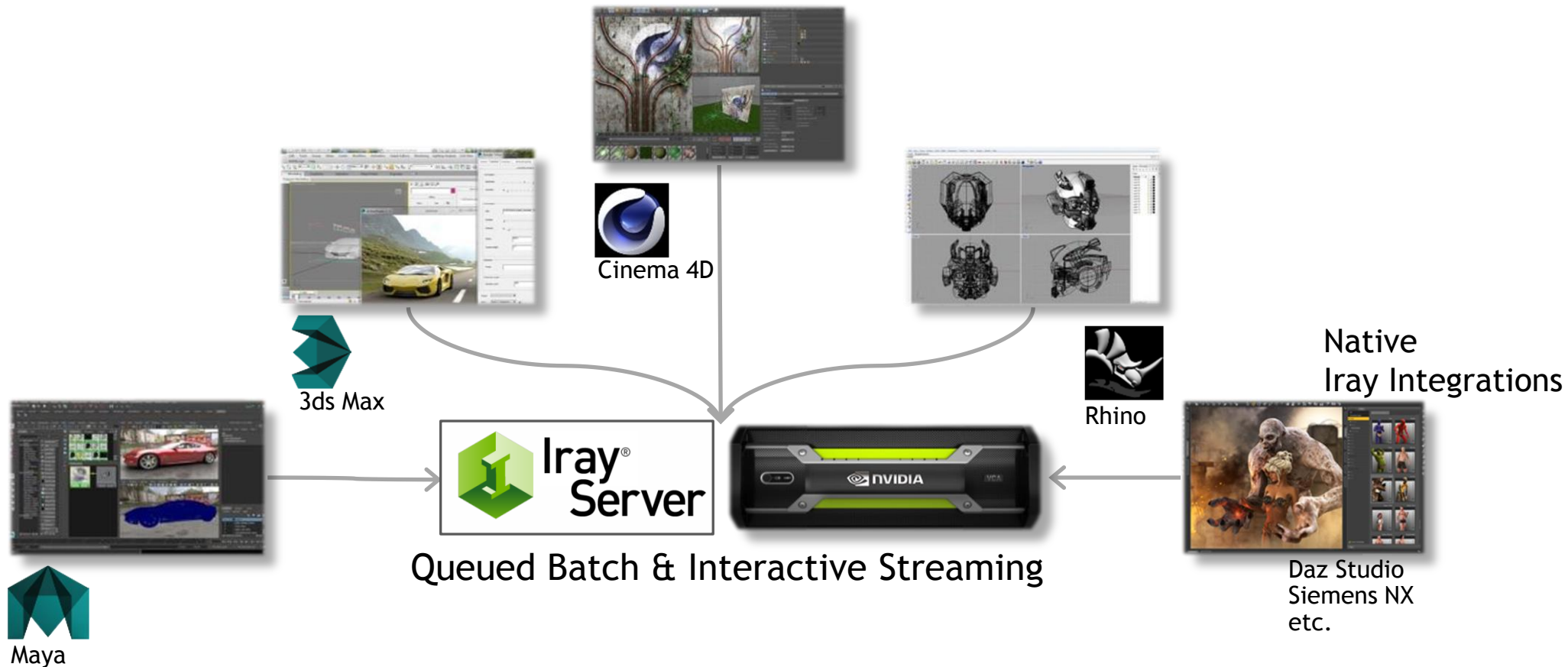
+800 of Free to Use MDL Materials





# NVIDIA Iray Product Scalability

Scaling out of the box, into the data center, and into the cloud



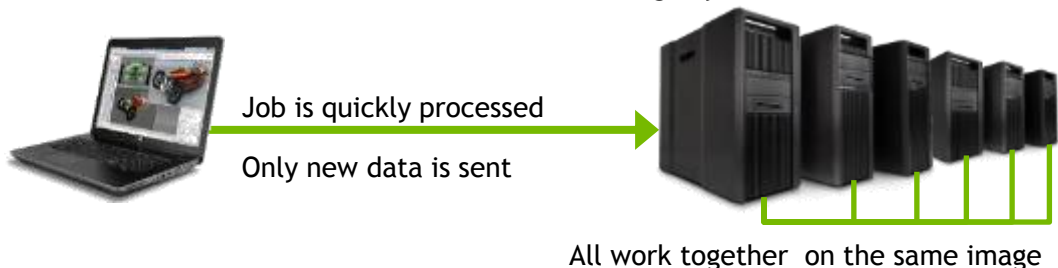
# Iray Server

## Queuing and Streaming Across Your Network

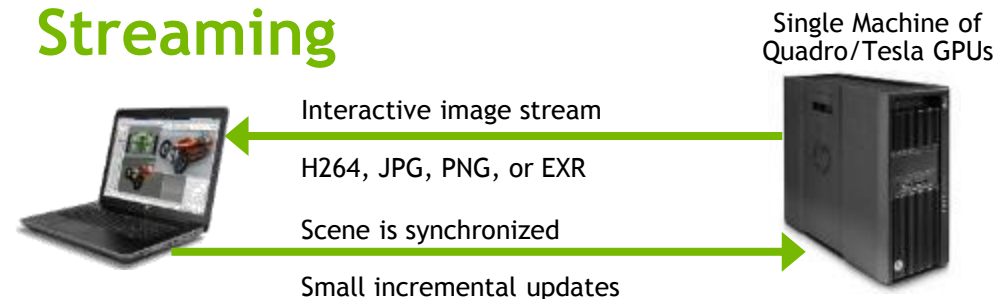


- Stream from a Single Machine
- Batch to a Cluster of Machines
- Cluster setup is fast, no networking expertise req'd
- Central, web-based Queue Manager
- Modify & resubmit jobs without going back to host

### Queuing

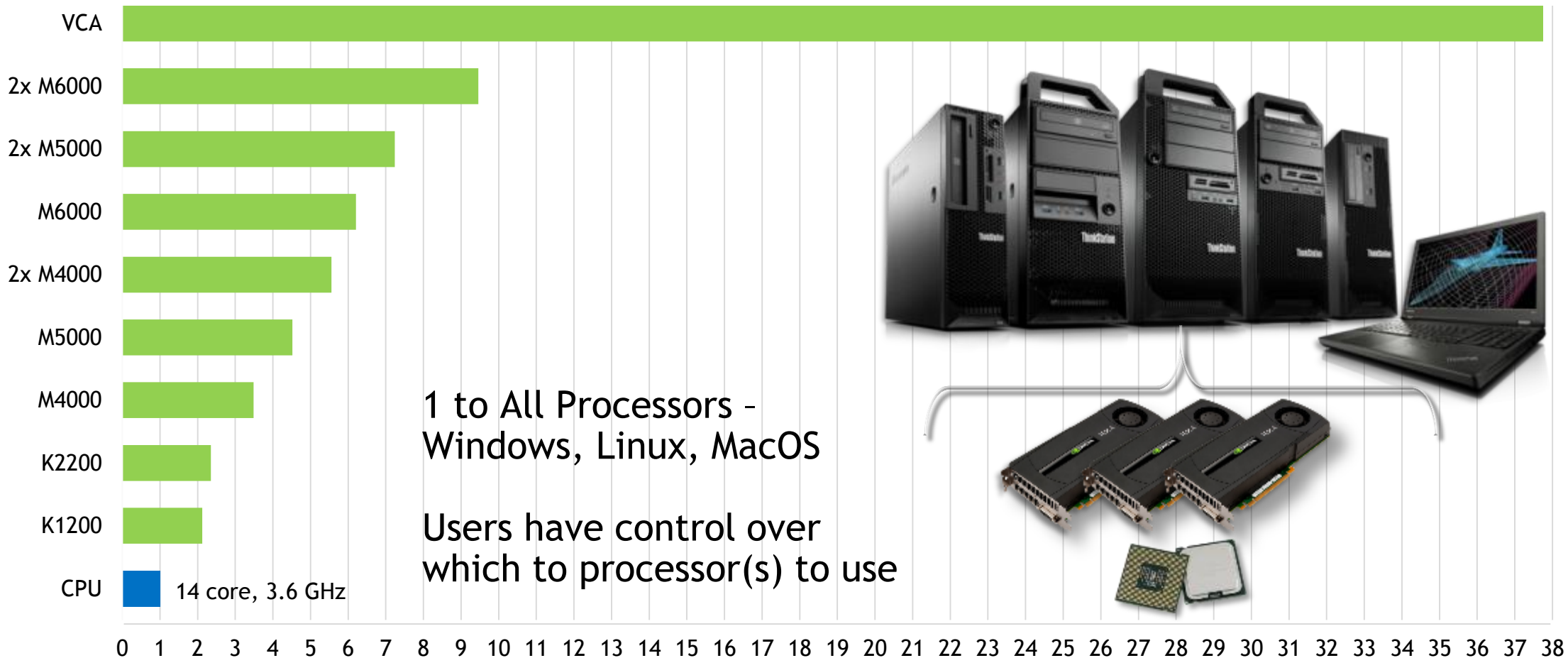


### Streaming



# IRAY: SCALABLE PERFORMANCE

With Iray, You can always go faster

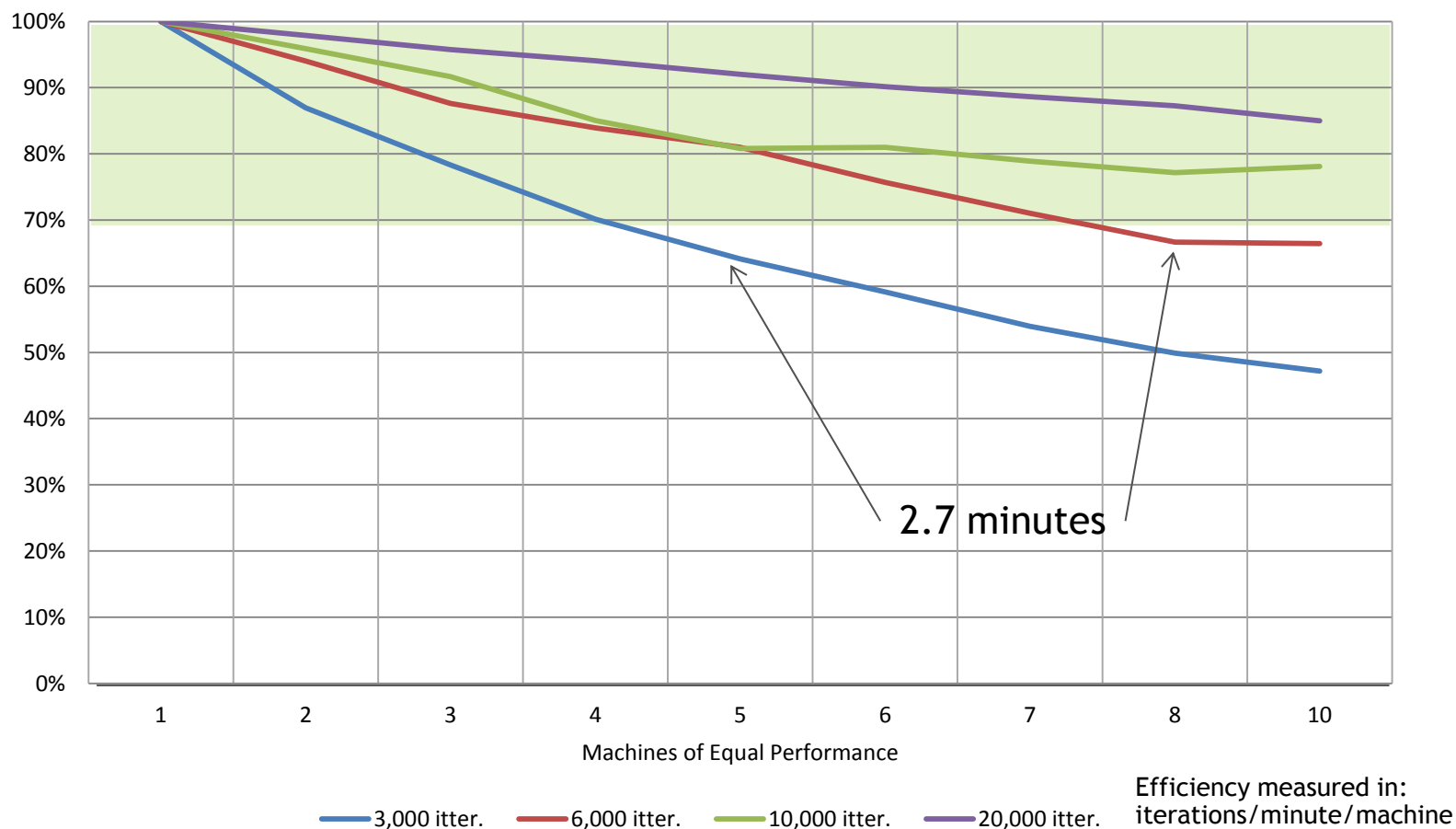




# Iray Server - Cluster Efficiency

Cluster Efficiency as Compared to 1 Machine

- The longer the render the more efficient the cluster
- Industry efficiency target is typically 70% - which Iray Server can exceed
- Only dipping below 70% for <3minute renders



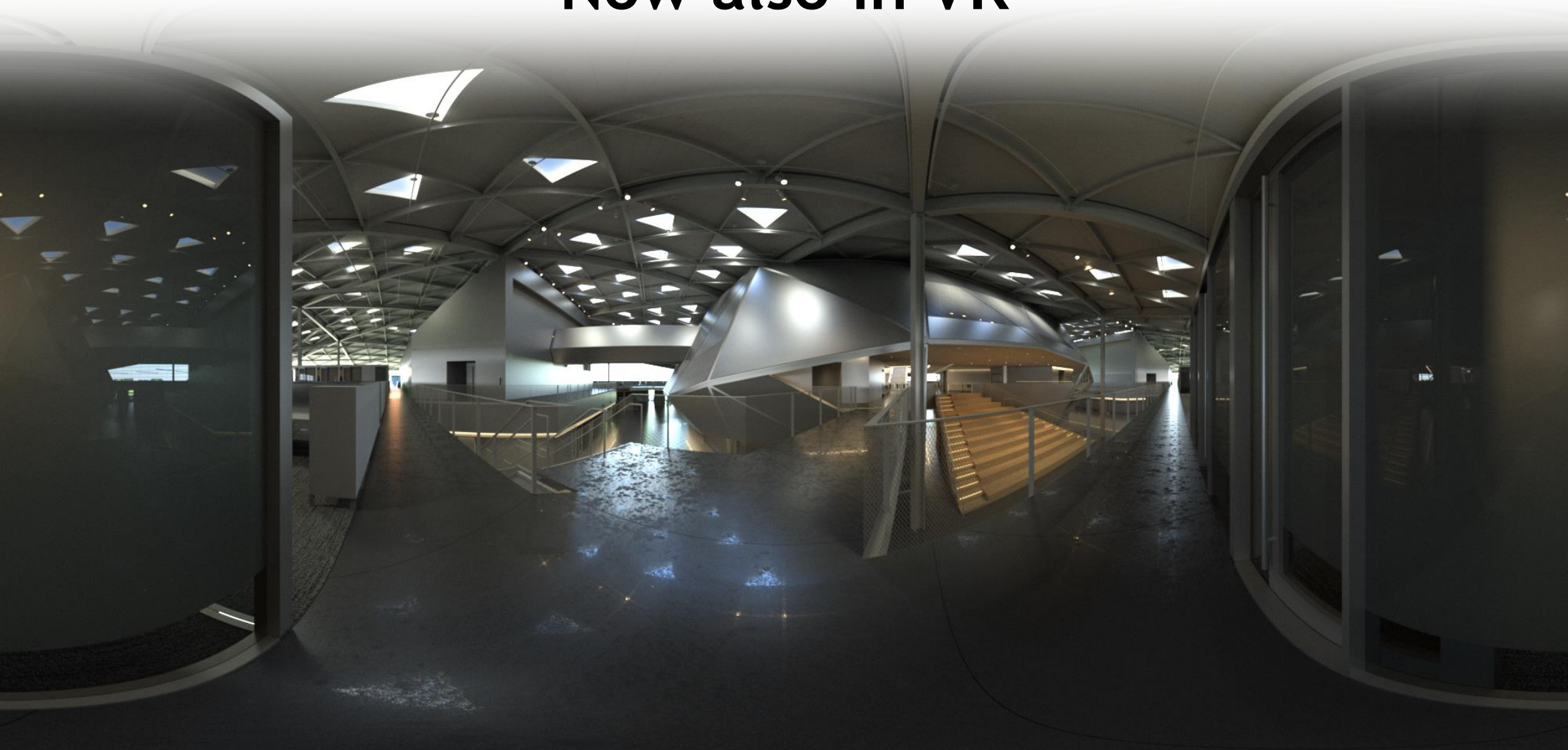








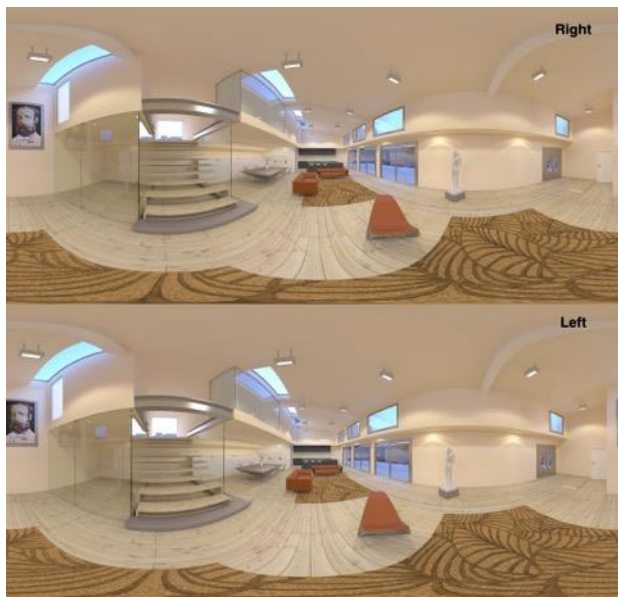
# Now also in VR



# Understanding the Different VR Types

## VR Snapshots

- Pre-rendered, **static** result
- You can look around but you can't move
- Transition to any number of views with NVIDIA "Pro VR Viewer"



Render time tied to resolution

## Iray VR

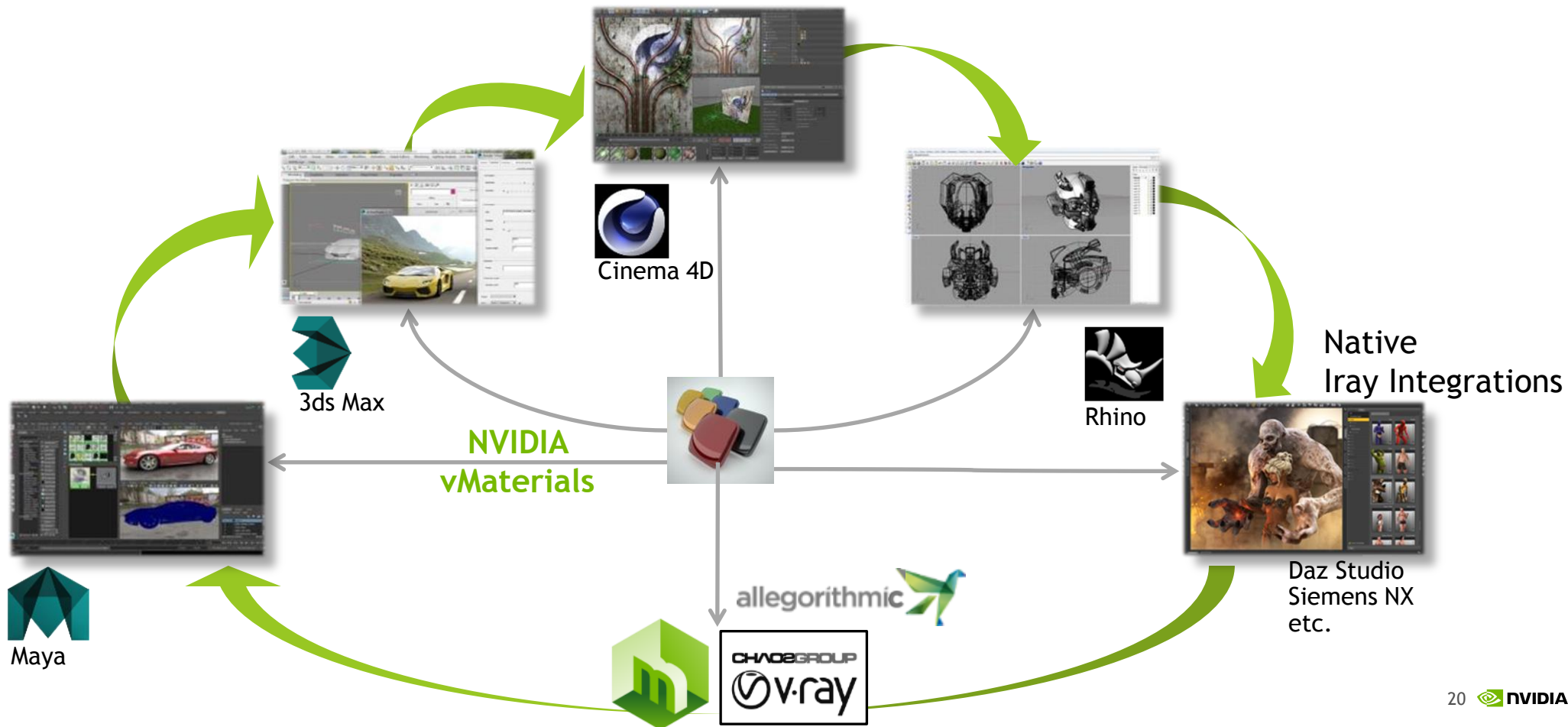
- Pre-rendered, **explorable** result
- You can move and see from any vantage point (within your viewing volume)
- Merges Iray accuracy with VR freedom



Render time - similar to a turntable animation

# NVIDIA Rendering Product Interoperability

Maintaining Efficiency and Intent





# IRAY - EVOLVING QUICKLY

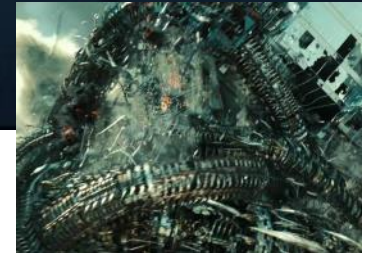
## Plug-Ins are Ideal for Keeping Pace

Plug-ins will continue to evolve at their own pace, including the latest Iray functionality along the way, and supporting multiple host versions

All future updates are included in the annual license- you just need to be current.



# mental ray



# mental ray® for Maya

Soon Coming Directly to End Users from NVIDIA

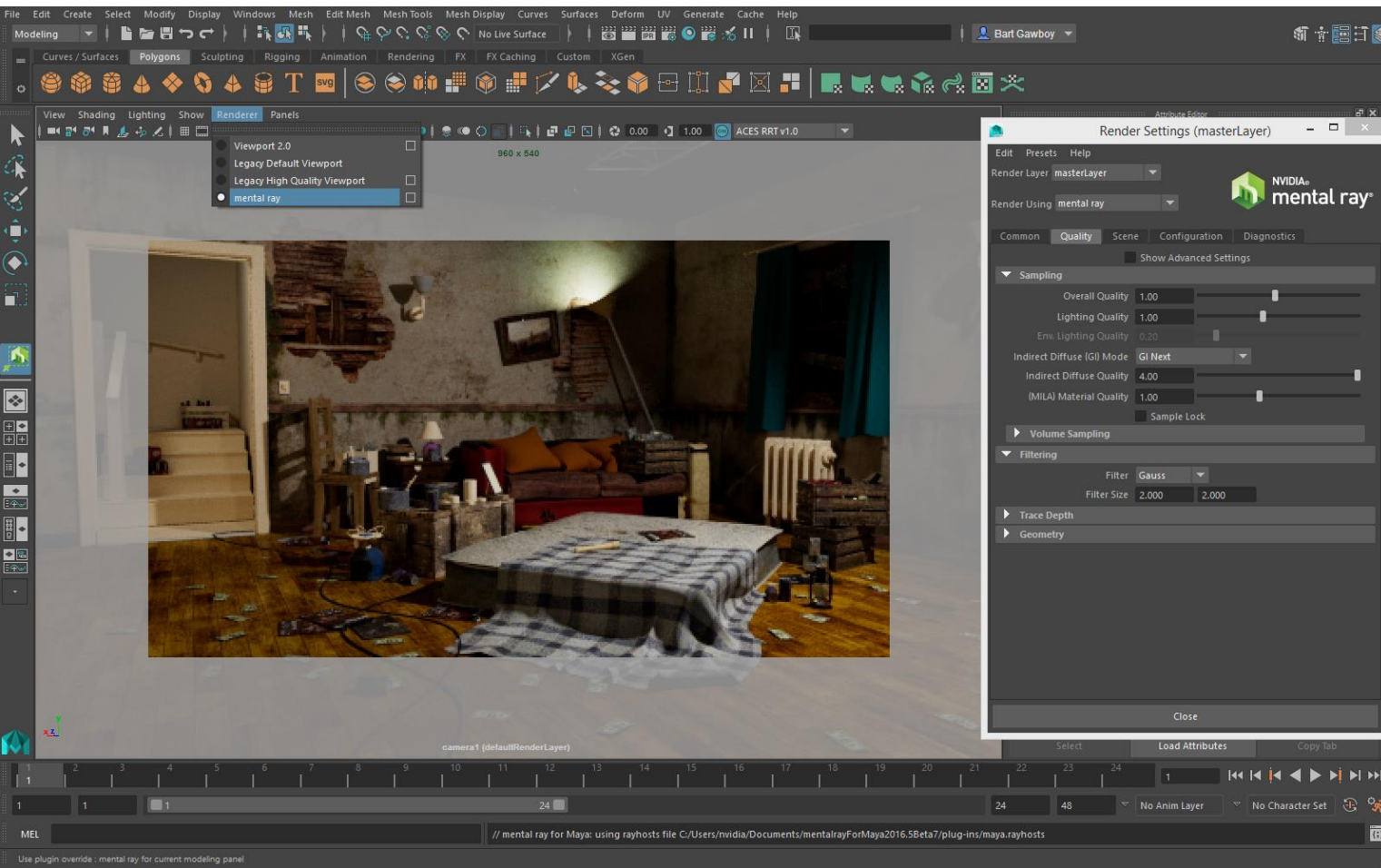
- Starting with Maya 2017  
mental ray will be available directly from those creating it
- **mental ray for Maya** plug-in product coming in late summer
  - Now improving the workflow in ways we've wanted to for years
  - New version brings many workflow improvements and meaningful GPU acceleration
  - In Beta since August with +100 sites
  - Users of Maya 2016, 2016.5 & 2017 encouraged to join our Beta:  
[mental-ray-beta@nvidia.com](mailto:mental-ray-beta@nvidia.com)
- Pricing and policies to be announced closer to availability





# mental ray® for Maya

Now interactive in Maya viewport, with progressive feedback

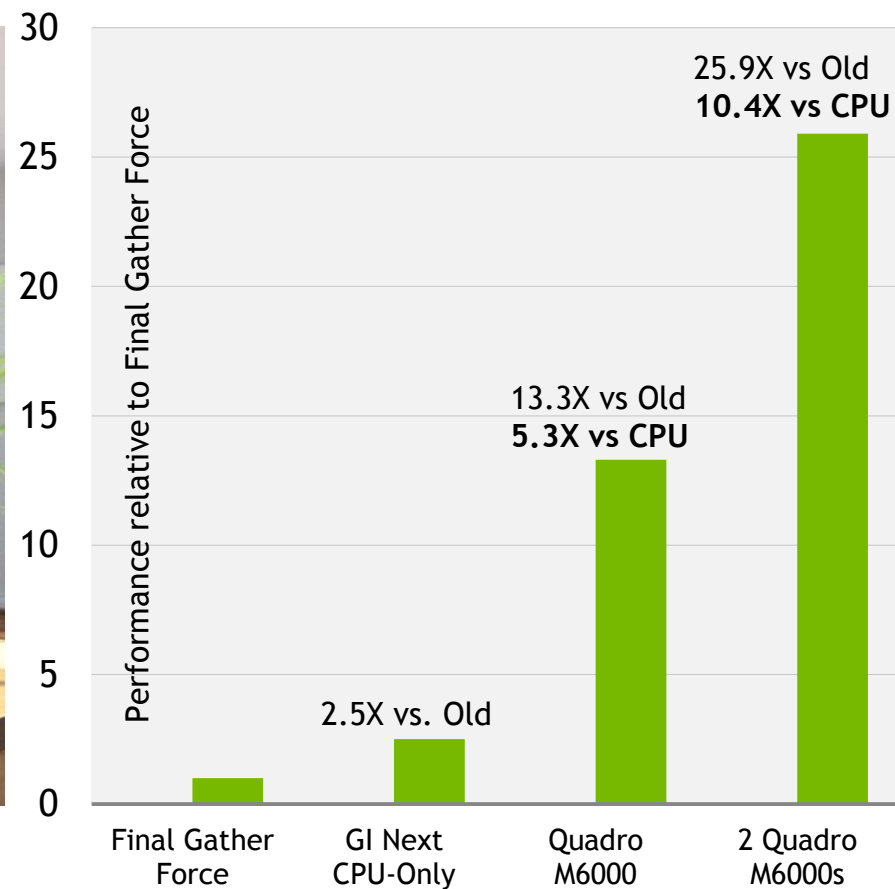


- GI-Next for Global Illumination
  - 2-4X faster than previous GI of equal quality
  - FAR easier to use
    - now just a quality slider
  - GPU accelerated
    - 4-5X from adding a top end GPU
  - Any scene setup for GI can switch to GI-Next in a minute
- GPU notes:
  - Uses CPUs with GPUs
  - Same results from CPU and GPU
    - Only geometry is loaded on GPU (textures are free)
  - Works with all mental ray shaders and in-camera effects

# Interior Scene Benchmark



Typical interior with mostly indirect lighting coming from off-camera windows



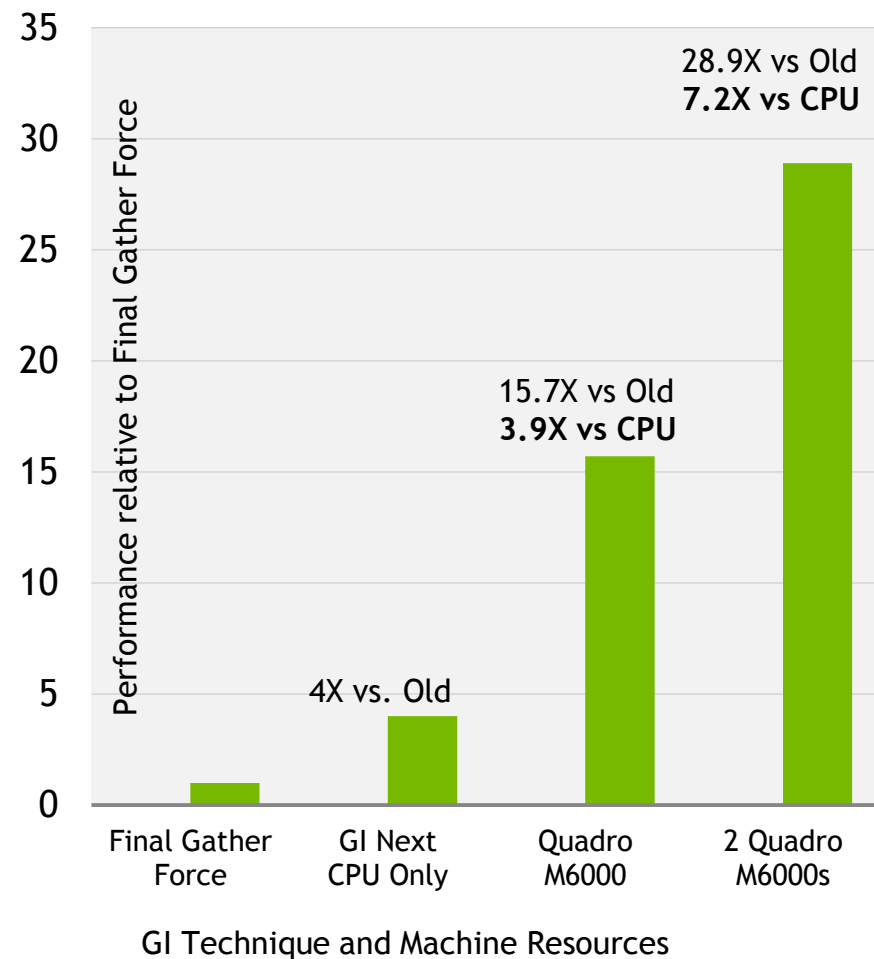
GI Technique and Machine Resources

Source: Internal NVIDIA ARC performance tests

# Exterior Scene Benchmark



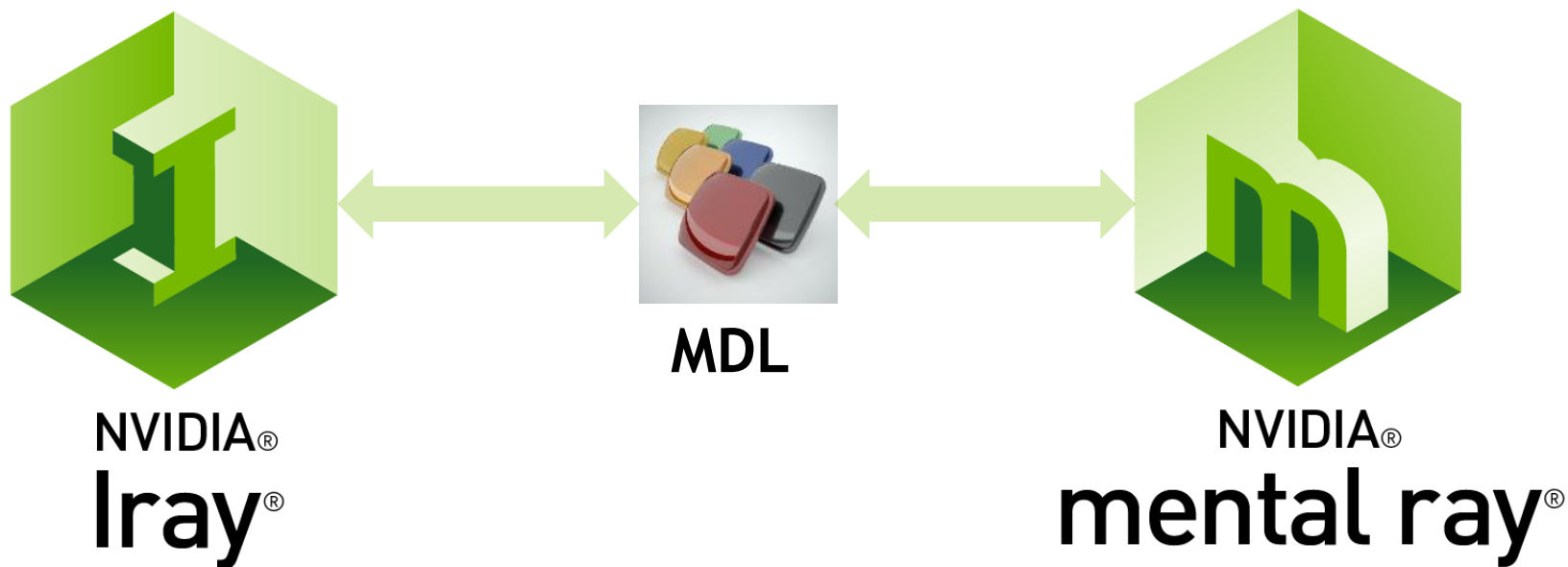
Typical exterior showing that even day lit scenes employ global illumination





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# Thank you for your time

# Questions?



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# NVIDIA Iray®

## Accurate Rendering Made Easy

Key things to know about:

- **Physically-Based Simplicity:** works like the real-world, so you work like a photographer
- **Highly Interactive:** see results as you adjust cameras, DOF, materials, lights, geometry
- **Interactive = Final:** you're always working within the final renderer and not a preview
- **Tightly Integrated:** working the way you'd expect within the hosting application
- **Highly Scalable:** in the machine or across the network so you can always go faster

