Iray plug-ins & mental ray for Maya

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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
  - NVIDIA’s best solution for those needing complete freedom for film-quality production
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
- SIEMENS PLM
- migenius
- SketchUp
- Substance Designer & Painter
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 Server (Win & Linux)
Iray for Maya (2016, 2017, Win & Linux)
Iray for Rhino (v5 Windows)
Iray for Cinema 4D (Win & Mac)
IRAY FOR RHINO
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
The loading and exchanging of materials, lights, and measurements

**NVIDIA Iray Integrations**

**Native Iray Scalability**
Scaling out of the box, into the data center, and into the cloud

Queue Batch & Interactive Streaming

**NVIDIA Iray Product Scalability**

- Maya
- 3ds Max
- Cinema 4D
- Rhino
- Daz Studio
- Siemens NX

etc.
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

Job is quickly processed
Only new data is sent
All work together on the same image

One or more networked machines using any GPU/CPU combination

Streaming

Interactive image stream
H264, JPG, PNG, or EXR
Scene is synchronized
Small incremental updates

Single Machine of Quadro/Tesla GPUs
IRAY: SCALABLE PERFORMANCE

With Iray, You can always go faster

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1 to All Processors - Windows, Linux, MacOS

Users have control over which to processor(s) to use
Iray Server - Cluster Efficiency

- 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 <3 minute renders.

Cluster Efficiency as Compared to 1 Machine

- Efficiency measured in: iterations/minute/machine
- Machines of Equal Performance
- 3,000 itter., 6,000 itter., 10,000 itter., 20,000 itter.
- 2.7 minutes
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”

**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 tied to resolution

Render time - similar to a turntable animation
NVIDIA Rendering Product Interoperability

Maintaining Efficiency and Intent

- Maya
- 3ds Max
- Cinema 4D
- vMaterials
- NVIDIA
- Rhino
- Native Iray Integrations
- Daz Studio Siemens NX etc.
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

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

Source: Internal NVIDIA ARC performance tests
Exterior Scene Benchmark

Typical exterior showing that even day lit scenes employ global illumination

Source: Internal NVIDIA ARC performance tests
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Thank you for your time

Questions?
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