RealityServer® — The 3D Web Services Platform

Ludwig von Reiche, COO, mental images GmbH
About mental images

• Founded 1986
• World’s largest 3D component software team
• Fundamental R&D, patented technologies
• Academy Award® winning product
• NVIDIA subsidiary since 2007
mental images Markets

• Digital Content Creation (DCC)
  • Motion Picture Studios
  • Interactive Entertainment Developers and Providers

• Computer Aided Design (CAD)
  • Automotive
  • Aerospace
  • Industrial Engineering
  • Architecture and Spatial Management

• Scientific Computing
mental ray® OEM Customers

Integrated into over 10M seats of leading CAD and DCC tools:

• Autodesk
  • AutoCAD®
  • Autodesk® Inventor®
  • Autodesk® Revit®
  • Autodesk® 3ds Max®
  • Autodesk® Maya®

• Dassault Systèmes
  • CATIA® V4 and V5
  • SolidWorks®

• AVID
  • Softimage®|XSI®

• Others
mental ray® at work
mental ray® at work
mental ray® at work
mental ray® live
RealityServer® Overview

A scalable 3D Web Services Platform

RS Apps
RealityServer
CPUs
GPUs

CAD and DCC systems
System Integration
Deployment & Hosting
Enterprise Integration

Any mobile or fixed client with Web or network access

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RealityServer Architecture 1/4

- Potentially Petabytes of Storage
- Highly scalable parallel processing on up to thousands of CPUs and GPUs
- User interaction—minimal bandwidth impact
- Optional Client Software
  - Flash®
  - Acrobat®
  - DWF Viewer
  - 3D XML Viewer
- Client with Client Software
  - HTML Browser

Files: .mi, .js, .xml, bitmaps, shaders
RealityServer Architecture 2/4

Client-side Presentation Layer

API
- JavaScript
- C++

Server Platform
- Session Manager
- HTTP Server
- Scene Database
- Renderers

Design & Creation Tools

CRM
ERP
PDM

HTTP,
Internet, VPN, Intranets, WLAN

Custom Application
Design, Development and System Integration

RealityServer Platform

Resource Infrastructure
(Hardware and Enterprise Software)
RealityServer Architecture 3/4

- Self-organizing clusters of hosts
- Multiple symmetric hosts
- Multiple network connections
- IP Multicast

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RealityServer Platform

Resource Infrastructure
(Hardware and Enterprise Software)
RealityServer Architecture 4/4

- Distributed data ownership
- Programmed redundancy
- Fault tolerance
- Lost hosts automatically recovered

RealityServer Platform

Resource Infrastructure (Hardware and Enterprise Software)
RealityServer @ mydeco.com

- B2C configuration platform for highly customizable products (interior decoration)
- 30,000+ 3D models from several hundred vendors
- Using simple 2D modeling and 3D model representation
- Supports user-generated content
- Integrates with other application services (e.g. Facebook)

- Live demo ...
Data Preparation with RealityDesigner™

RealityDesigner ...  
... handles scene graph  
... supports configurations  
... converts mental ray shaders into MetaSL shaders  
... handles textures and environments  
... supports multiple cameras

RealityDesigner is available for  
- Generic Integration  
- Autodesk 3ds Max  
- Autodesk Maya  
- Softimage | XSI  
- SolidWorks

API  
- JavaScript  
- C++

Server Platform  
- Session Manager  
- HTTP Server  
- Scene Database  
- Renderers

RealityServer Platform

Data Preparation

Resource Infrastructure  
(Hardware and Enterprise Software)
RealityServer @ ProjectHub

- Professional design collaboration across multiple sites and professions
- Easily deploy original 2D and 3D content
- Visual collaboration for improved and timely decision-making

- Live demo...
RealityServer @ KTGY

- Architecture and construction marketing solution with high quality visualization
- B2B visualization platform for interactive walkthrough of 3D buildings and cityscapes

- Video ...
RealityServer 2.2 Web Services

Reference implementations for common web application programming environments

- Simplify Web integration
- Supported environments:
  - Flex/Flash
  - Microsoft Silverlight
  - DHTML/Ajax
- Available from September 2008
RealityServer @ Design Review

- Highest quality, collaborative CAD-based visualization
- Realtime raytracing with image-based lighting
- Multi-site collaboration with various modes of control
- IP protection
- Live demo ...
RealityServer in Summary

- Leverage your 3D assets in new web-based application services
- Protect your 3D assets through server-based Web application services
- Use available tools for straightforward application integration

Get started:

- **See us ...** at NVISION booth # 326
- **Download ...** free RealityServer Developer Edition from [www.mentalimages.com/realityserver](http://www.mentalimages.com/realityserver)
- **Contact us ...** in North America: Randy Ochs ([rochs@mental.com](mailto:rochs@mental.com))
  in Europe & A/P: Ludwig von Reiche ([ludwig@mental.com](mailto:ludwig@mental.com))