


Client:	Autodesk
Project:	Autodesk Maya 2011 Benchmarks
Complete Benchmark Report	
 Pfeiffer Consulting 01001011	

Table of Contents

About the Benchmarks.....	3
About the Benchmark Project.....	4
Aim of the benchmark project	4
Technical Details.....	4
Computer Models Used for Benchmarking	4
Application Software	4
Benchmark Methodology	5
The Pfeiffer Consulting Methodology for Productivity Benchmarks	5
Benchmark Definition and Execution.....	5
Complete List of Benchmarks.....	6
Introduction	6
Maya Productivity Benchmarks	6
Complete Results: Tables	8
Complete Results: Charts.....	10

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Pfeiffer Consulting 01001011	Client: Autodesk	Project: Autodesk Maya 2011 Benchmarks
	Document: Complete Benchmark Report	

About the Benchmarks

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	Document: Complete Benchmark Report	

About the Benchmark Project

Aim of the benchmark project

This benchmark project was defined to measure the productivity and efficiency increases linked to features and user interface improvements introduced in recent releases of Autodesk Maya, as compared with Autodesk Maya 8.5.

Technical Details

Computer Models Used for Benchmarking

- **Hardware**

Benchmarks were conducted on two identical Dell™ Precision™ T7400 workstations equipped with 2.83GHz quad-core Intel® Xeon® processors and with 4 to 32 GB of RAM.

The workstations were factory-configured respectively for 32-bit and 64-bit Windows® operating systems.

- **System Software**

Benchmarks were conducted using standard installations of Windows 7 (Maya 2011) and Windows XP (Maya 8.5).

- **Memory**

- The 64-bit workstation was equipped with 32GB of RAM.
- The 32-bit workstation was equipped with 4GB of RAM.

- **Configuration**

- All benchmarks were conducted on standard configuration workstations completely re-initialized for the benchmarks.

Application Software

The benchmarks were conducted using a default installation of Autodesk Maya 8.5 and Maya 2011.

Default settings were used for memory allocation and other settings unless otherwise stated.

About the Benchmarks	
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	Client: Autodesk	Project: Autodesk Maya 2011 Benchmarks
	Document: Complete Benchmark Report	

Benchmark Methodology

The Pfeiffer Consulting Methodology for Productivity Benchmarks

The Pfeiffer Consulting Methodology for Productivity Benchmarks is based on real world tasks and assignments executed by operators, rather than relying on computer scripting. These highly perfected measures provide a reliable way to document the impact of technology on productivity in a way no simple performance benchmark can. More importantly, these productivity measures document the impact of user interface efficiency as well as hardware performance.

The basic aim of the methodology is simple: to emulate the real-world productivity achieved by an experienced operator. Benchmarks are defined and executed in such a way that only the actual time necessary to achieve a given result is measured.

The Pfeiffer Consulting Methodology for Productivity Benchmarks is extremely flexible, and has been used over the last decade to measure aspects as diverse as workflow productivity of creative software; the impact of screen-size on operator efficiency; real-world productivity increases linked to different computing platforms; or hard to quantify aspects such as menu latency and user interface friction. Please visit www.pfeifferreport.com for more information and a wide variety of benchmark reports.

Benchmark Definition and Execution

All benchmarks conducted were specifically defined for this project by experienced professionals with a deep understanding of the workflows in question.

In order to assess productivity gains that a new release or a different product may (or may not) bring, we start by analyzing the minimum number of steps necessary to achieve a given result in each of the applications that have to be compared.

Once this list of actions has been clearly established, we start to execute the operation or workflow in each program, with the help of seasoned professionals who have long-standing experience in the field and with the programs that are tested.

In order to be certain that no lag or operator-induced delays are included in the productivity measures, each benchmarked example is cut down into small segments of three or four steps each.

After an initial training phase, each segment is executed 3 times, and the average time is used as a result. The cumulative times for all segments that form a complete workflow example are then used as benchmark results.

No scripting was used for the execution of the benchmarks.

The use of common keyboard shortcuts and contextual menus was authorized.

About the Benchmarks	
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	Client: Autodesk	Project: Autodesk Maya 2011 Benchmarks
	Document: Complete Benchmark Report	

Complete List of Benchmarks

Introduction

The benchmarks compared the productivity impact four important feature groups of Maya: Modeling tools, intelligent selection, soft selection and object-level soft selection, and workflow improvements including the Auto Resize option for fluid containers, and the recently introduced Camera Sequencer.

For each group of features, several frequently occurring operations were defined by professional users of Maya, and were executed on both releases of the software.

- For any additional questions regarding the benchmarks or the methodology, please contact research@pfeifferreport.com
- For any question regarding the features of Autodesk Maya please visit www.autodesk.com

Maya Productivity Benchmarks

- **Modeling Tools**

Benchmarks of recently introduced modeling functionality covered several features, including the Spin Edge Tool, the Merge Vertex Tool and Smooth Mode.

- ▶ **Spin Edge Tool:** Rearrange Group of 10 edges
- ▶ **Smooth Mode:** Make simple modification
- ▶ **Smooth Mode:** Make multiple modifications
- ▶ **Merge Vertex Tool:** Merge 10 vertices

- **Intelligent Selection**

Enhanced selection functionality for polygonal modeling was benchmarked using a variety of frequently used selection operations: selecting edge loops, face loops and vertex rings. The Multi Mode Selection, which allows for fast switching between selection of different component types, was benchmarked with simple and complex operations.

- ▶ **Intelligent Selection:** Select 2 edge loops
- ▶ **Intelligent Selection:** Select Face Loop
- ▶ **Intelligent Selection:** Select Vertex Ring
- ▶ **Multi Mode Selection:** Modify one object
- ▶ **Multi Mode Selection:** Reshape three objects

About the Benchmarks

	Client: Autodesk	Project: Autodesk Maya 2011 Benchmarks
	Document: Complete Benchmark Report	

- **Soft Selection/Object-Level Soft Selection**

Soft Selection benchmarks included simple and complex controlled scaling of regions of a polygon mesh. Object-level soft selection benchmarks were executed with small and larger groups of objects.

- ▶ **Soft Selection:** Simple scaling of components
- ▶ **Soft Selection:** Scaling of two regions
- ▶ **Object-Level Soft Selection:** Arrange 5 objects
- ▶ **Object-Level Soft Selection:** Arrange group of 15 objects

- **Workflow Enhancements**

Two significant workflow enhancements introduced in recent releases of Maya were benchmarked for this project. The Camera Sequencer was benchmarked on the creation of a walkthrough with multiple camera positions; the Auto Resize option for fluid containers was timed on an animation sequence involving testing and adapting an animated fluid container.

- ▶ **Camera Sequencer:** Create scene with 4 cameras
- ▶ **Auto Resize Fluid Container:** Tests and adapt animation

About the Benchmarks	
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Pfeiffer Consulting 01001011	Client: Autodesk	Project: Autodesk Maya 2011 Benchmarks
	Document: Complete Benchmark Report	

Complete Results: Tables

	Client: Autodesk	Project: Autodesk Maya 2011 Benchmarks
	Document: Complete Benchmark Report	

Time in seconds. Shorter is better	Maya 8.5	Maya 2011
Modeling Tools		
▶ Spin Edge Tool: Rearrange Group of 10 edges	57.94	15.10
▶ Smooth Mode: Make simple modification	17.99	3.03
▶ Smooth Mode: Make multiple modifications	33.06	8.67
▶ Merge Vertex Tool: Merge 10 vertices	43.52	15.17
Intelligent Selection		
▶ Intelligent Selection: Select 2 edge loops	8.28	3.37
▶ Intelligent Selection: Select face loop	10.56	2.52
▶ Intelligent Selection: Select vertex ring	14.86	4.64
▶ Multi Mode Selection: Modify one object	13.19	5.45
▶ Multi Mode Selection: Reshape three objects	36.01	17.82
Soft Selection/Object-Level Soft Selection		
▶ Soft Selection: Simple scaling of components	72.33	19.71
▶ Soft Selection: Scaling of two regions	95.67	28.08
▶ Object-Level Soft Selection: Arrange 5 objects	9.23	4.54
▶ Object-Level Soft Selection: Arrange group of 15 objects	25.62	6.36
Workflow Enhancements		
▶ Camera Sequencer: Create scene with 4 cameras	260.00	45.00
▶ Auto Resize Fluid Container: Tests and adapt animation	366.00	86.00

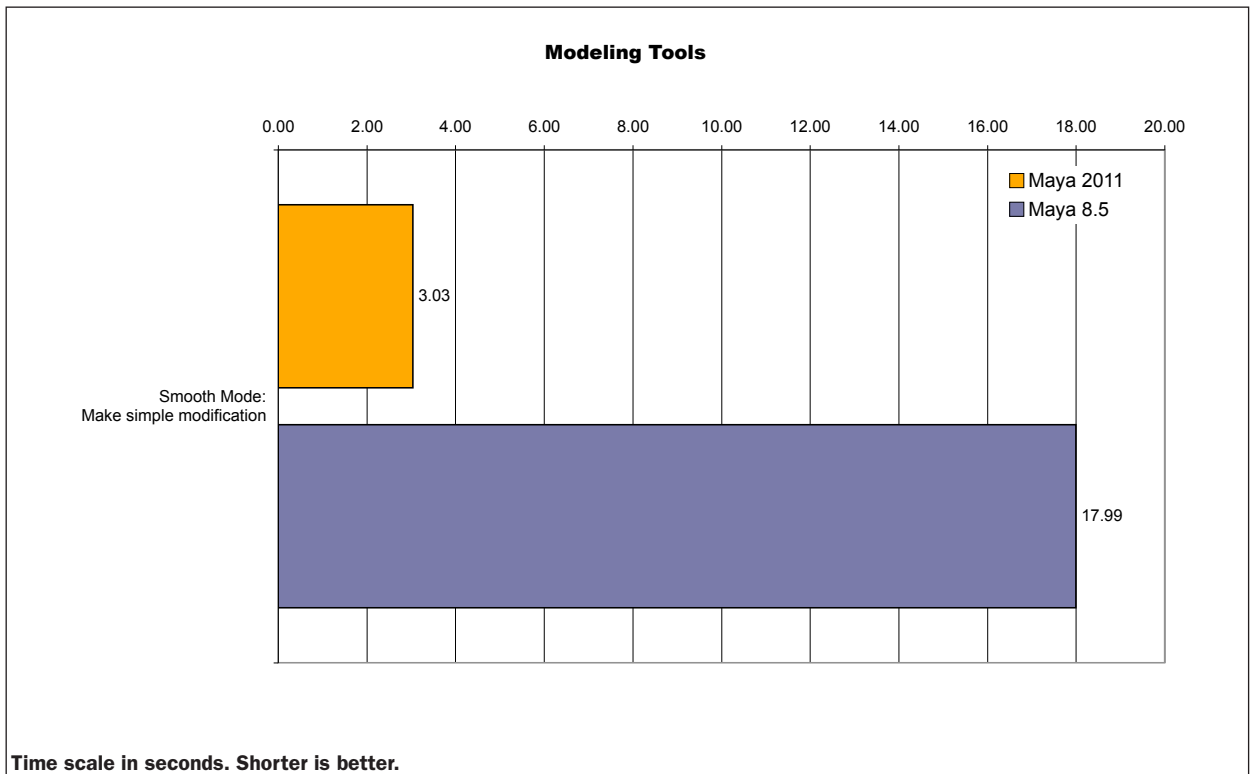
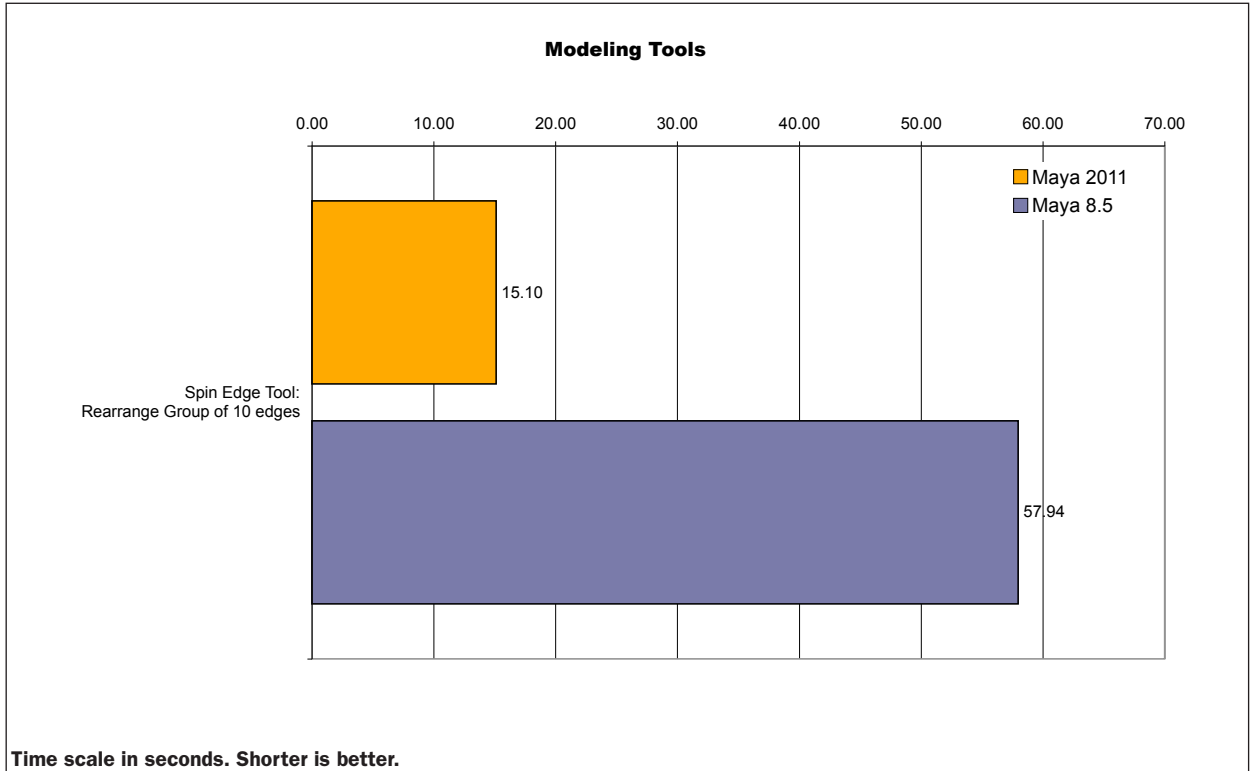
Time scale in seconds. Shorter is better.

Complete Results: Tables	
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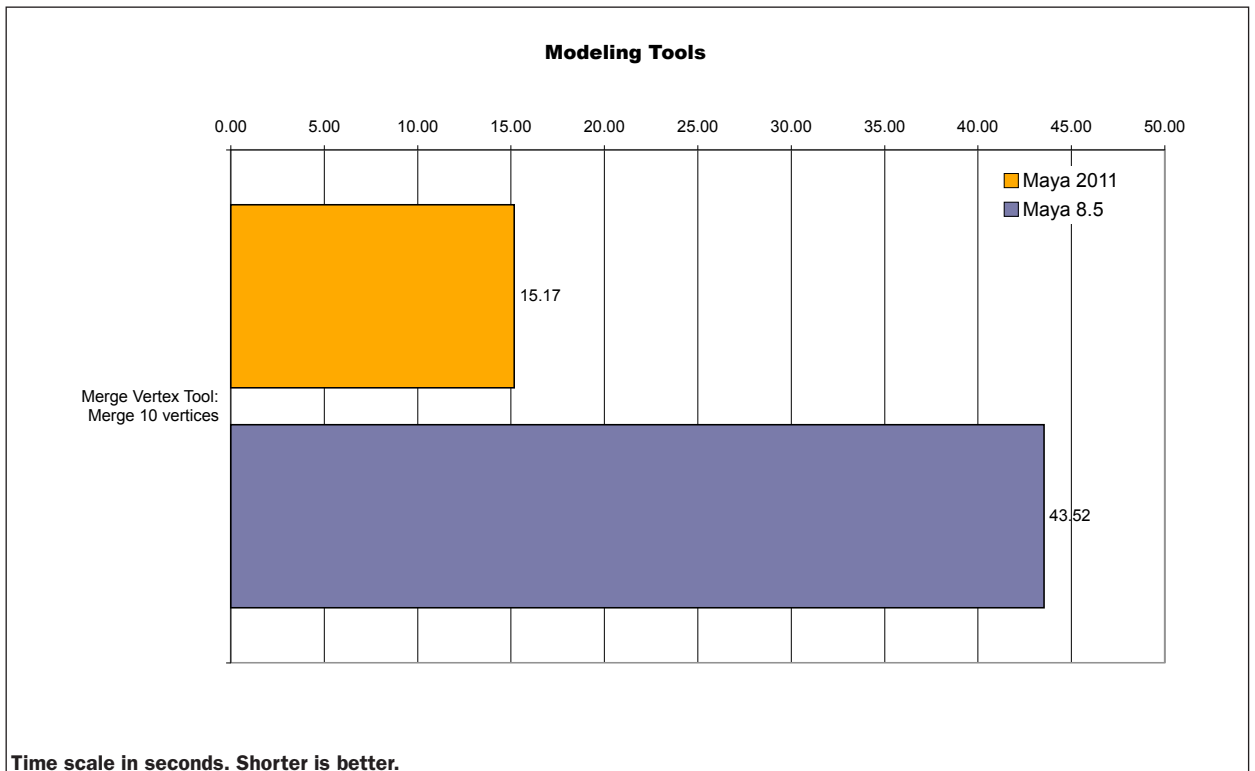
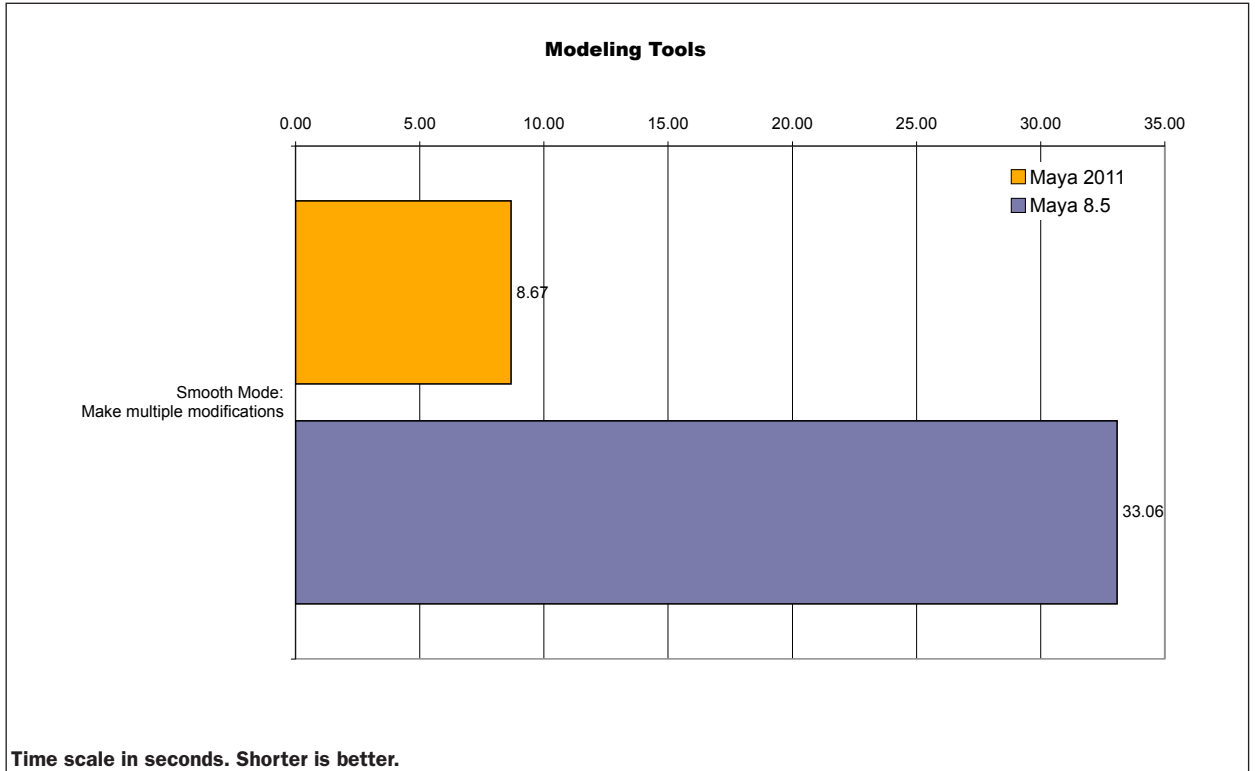
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	Document: Complete Benchmark Report	

Complete Results: Charts

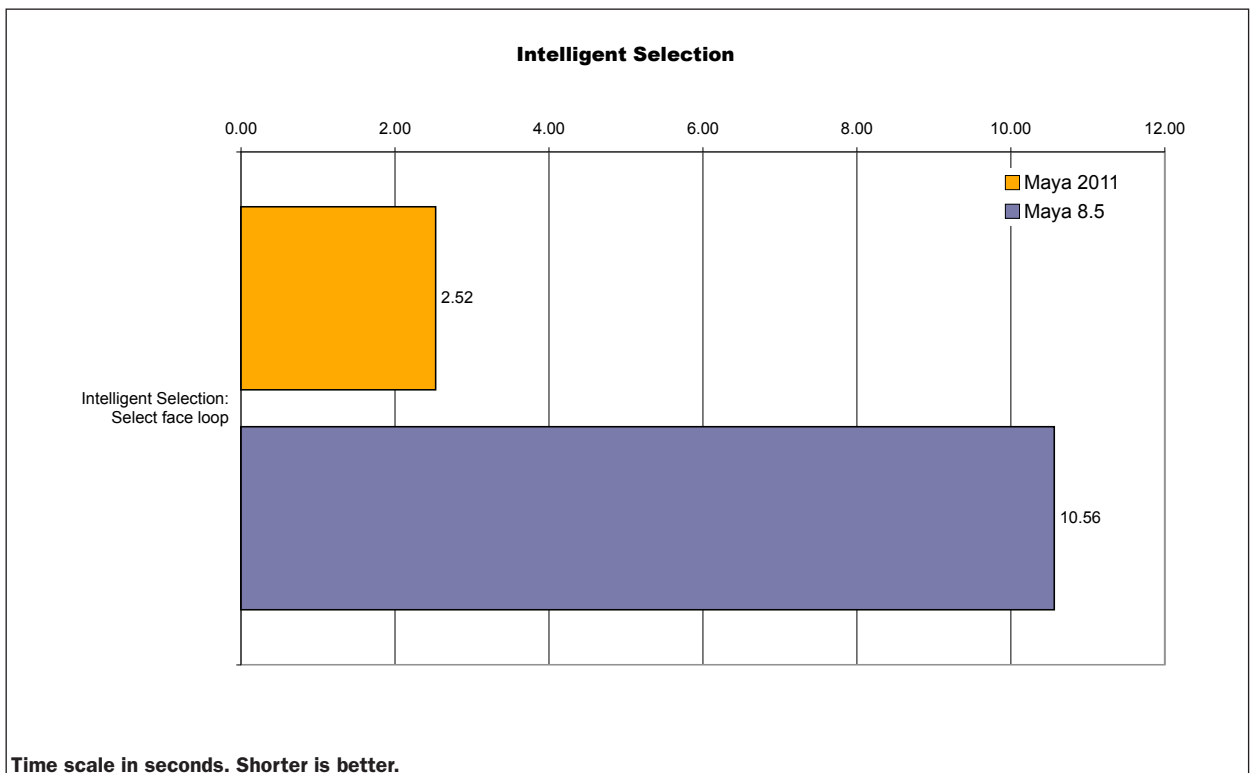
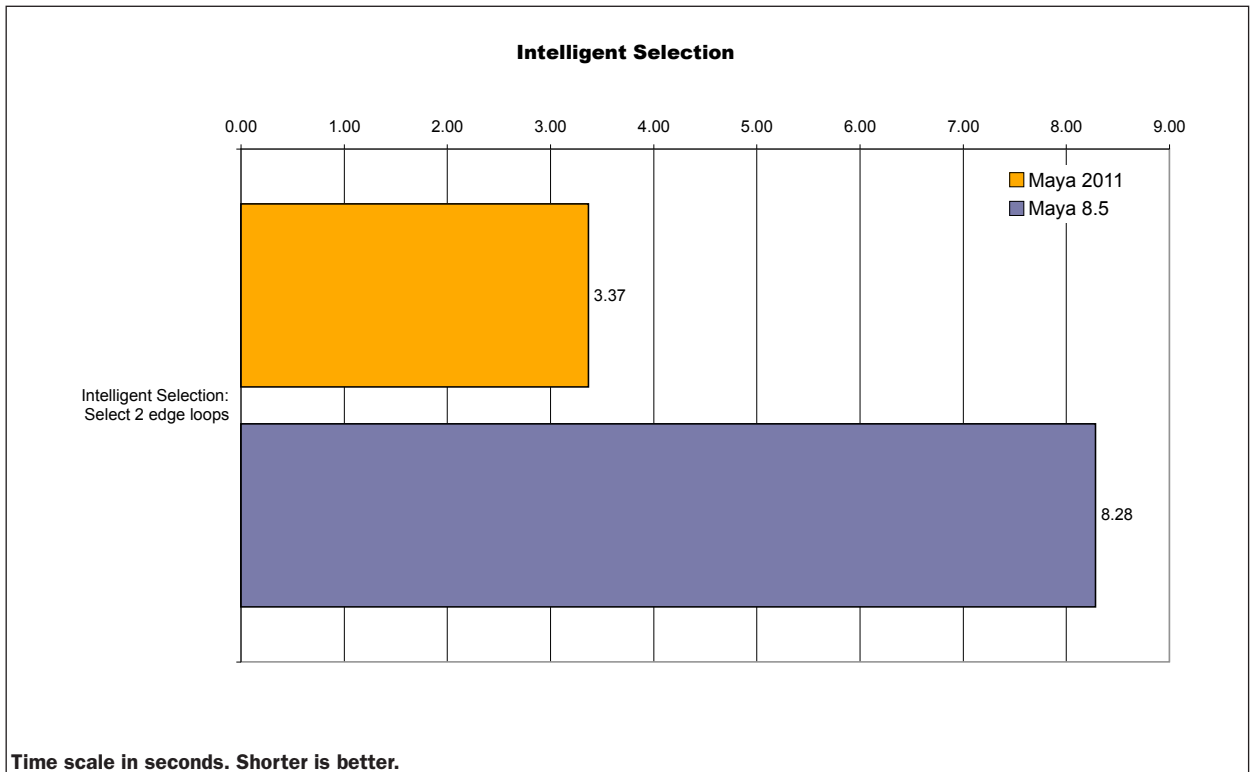
Complete Results: Charts	
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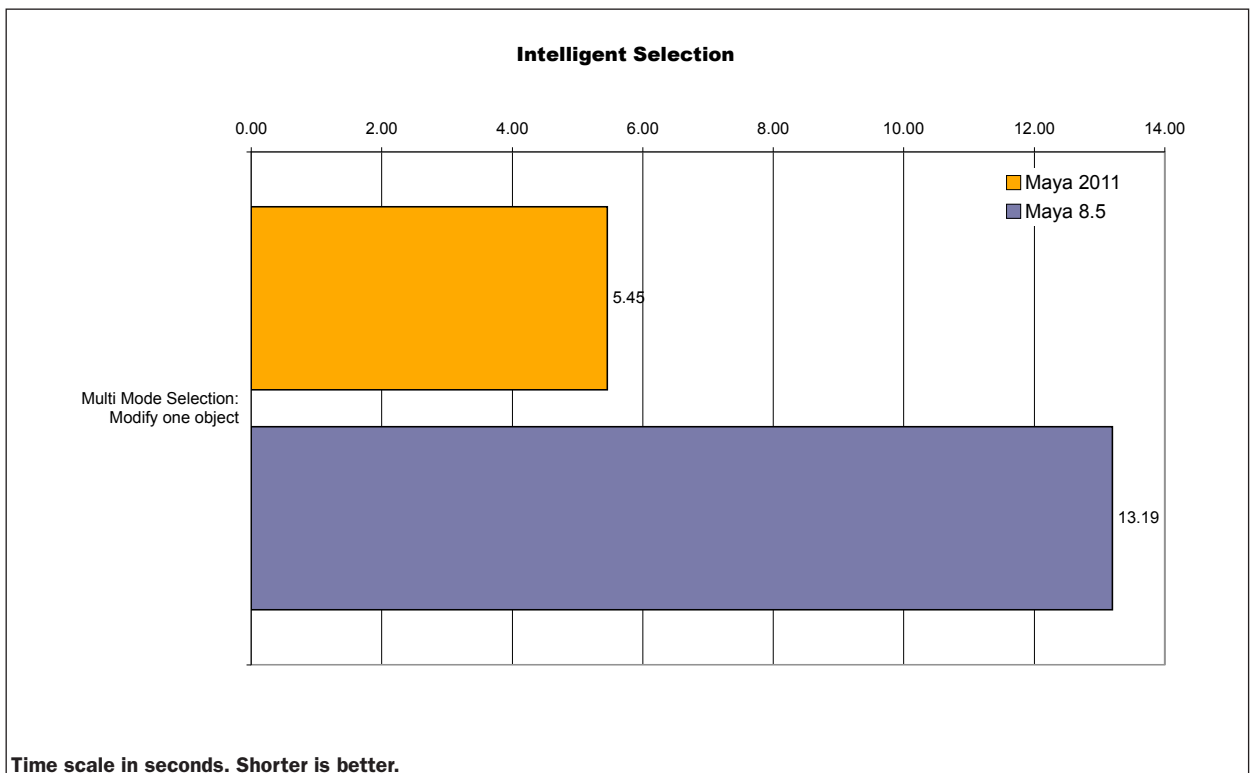
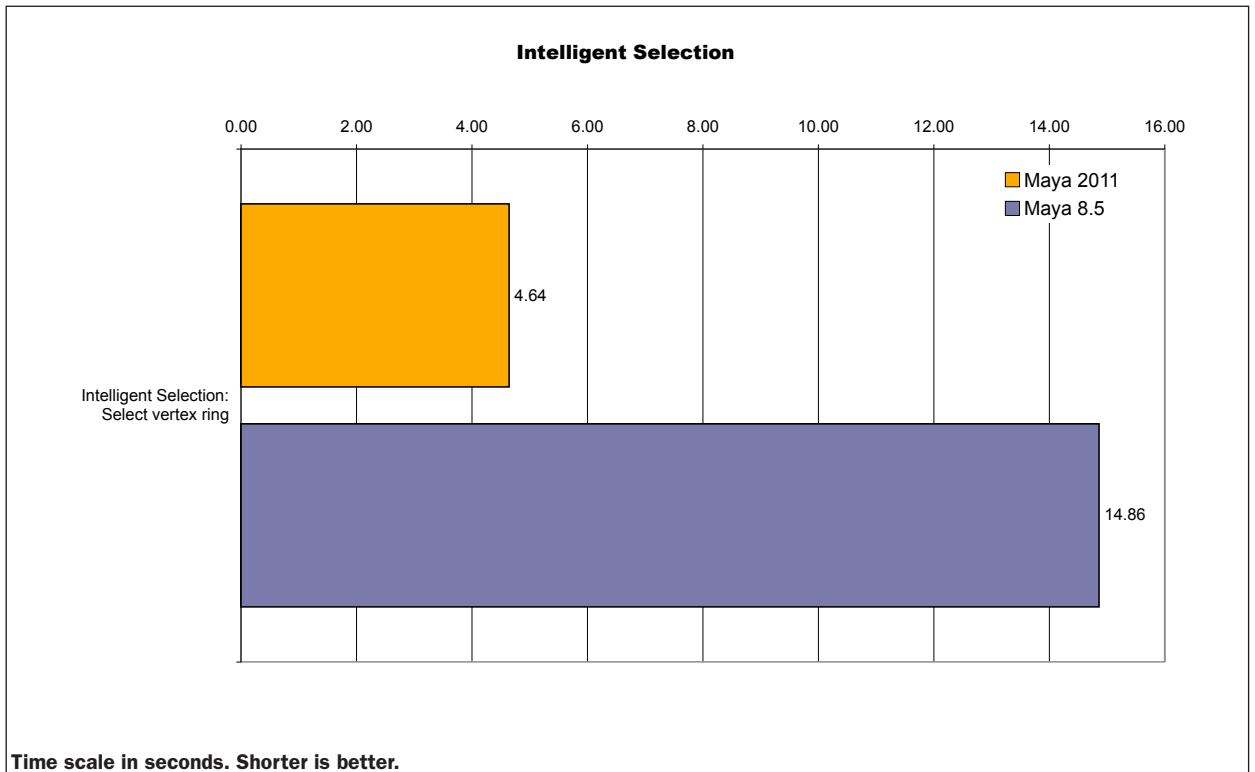
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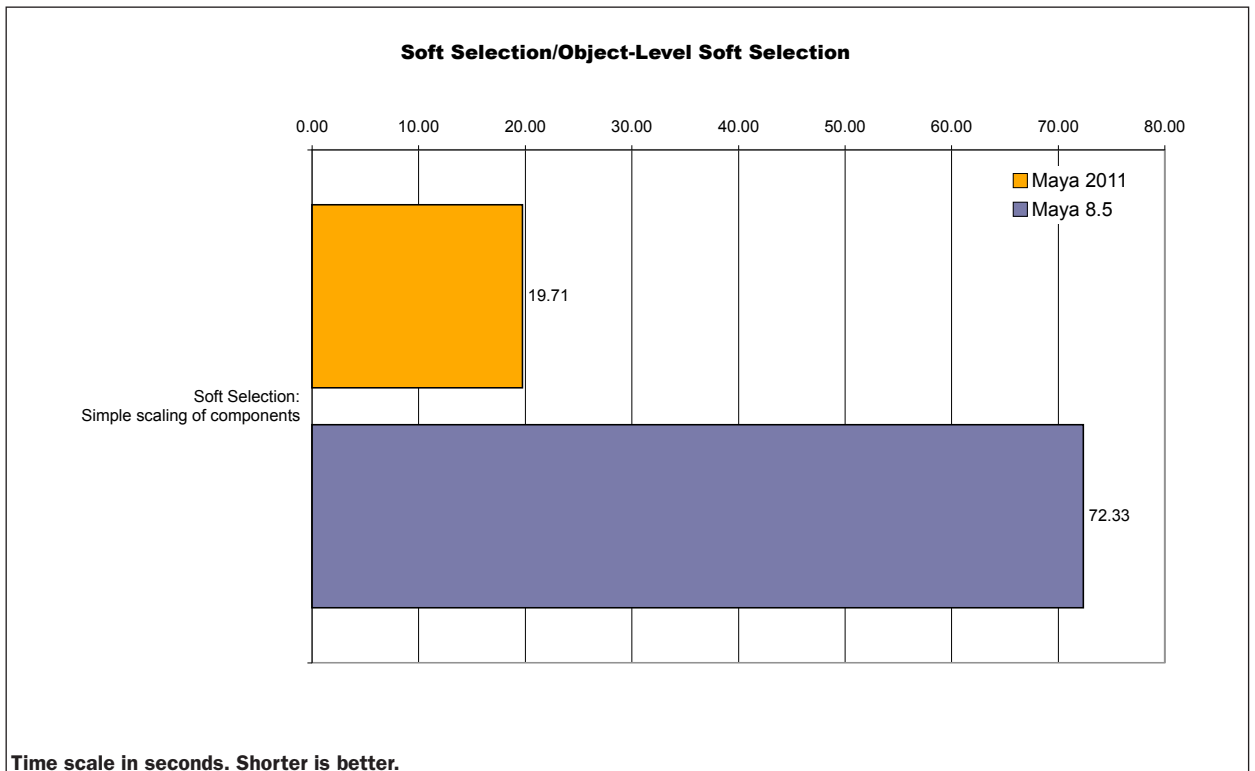
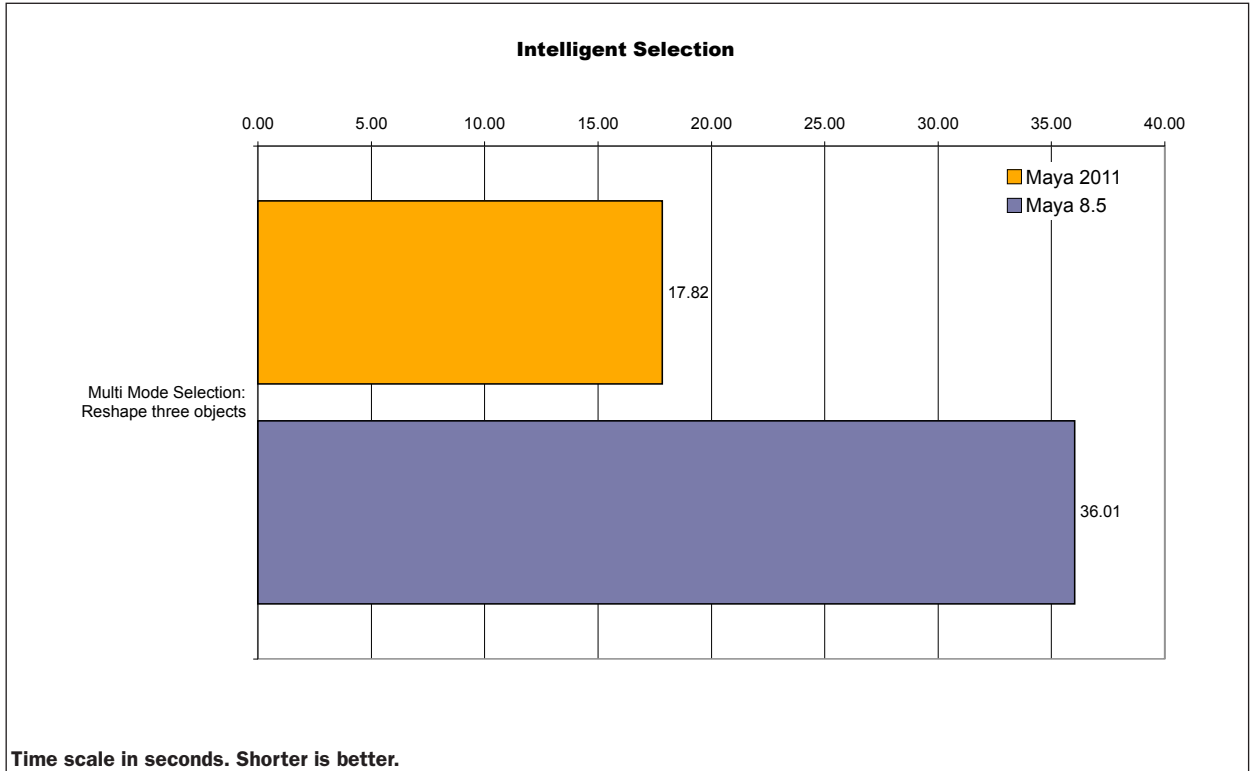
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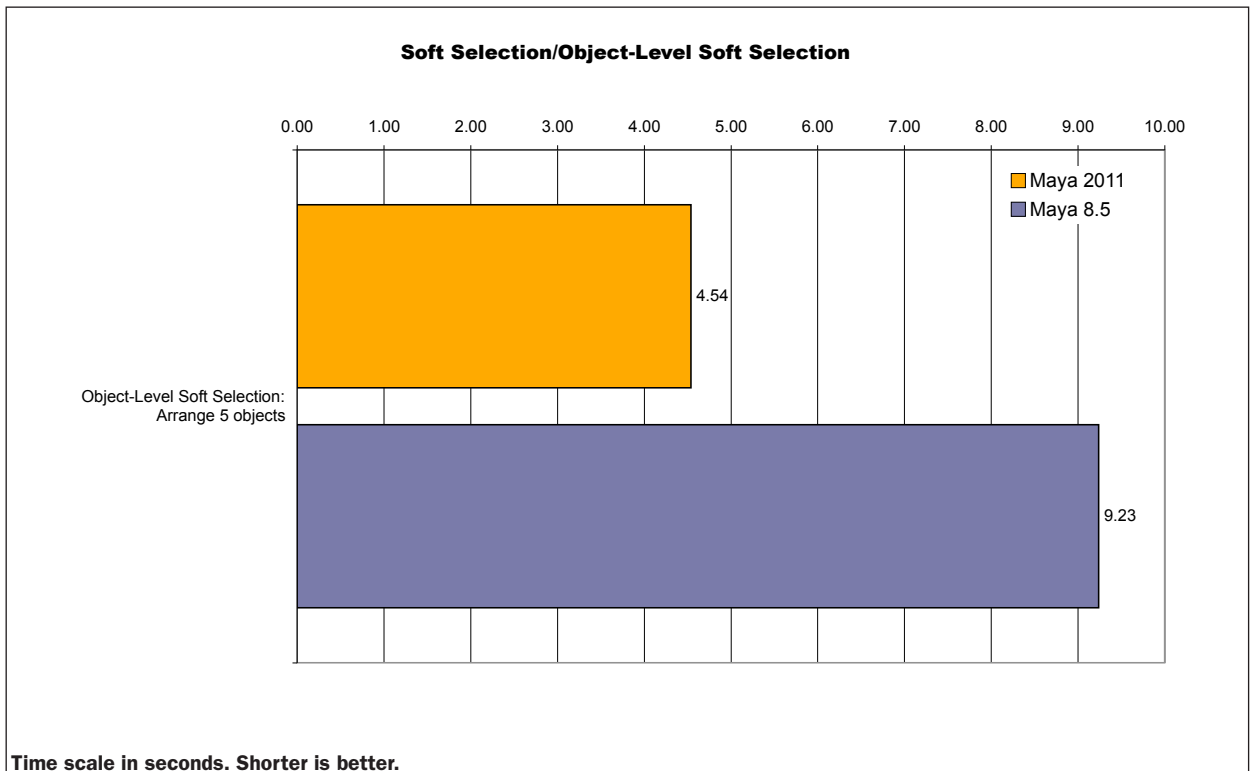
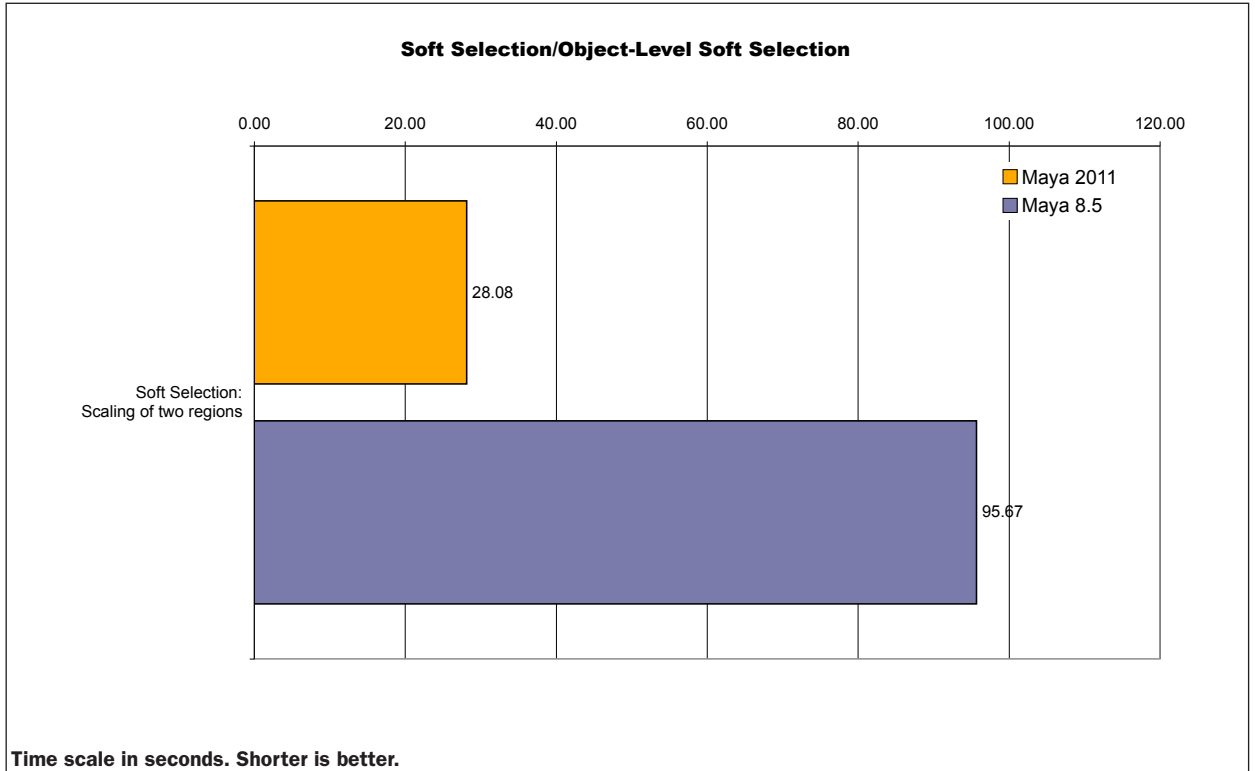
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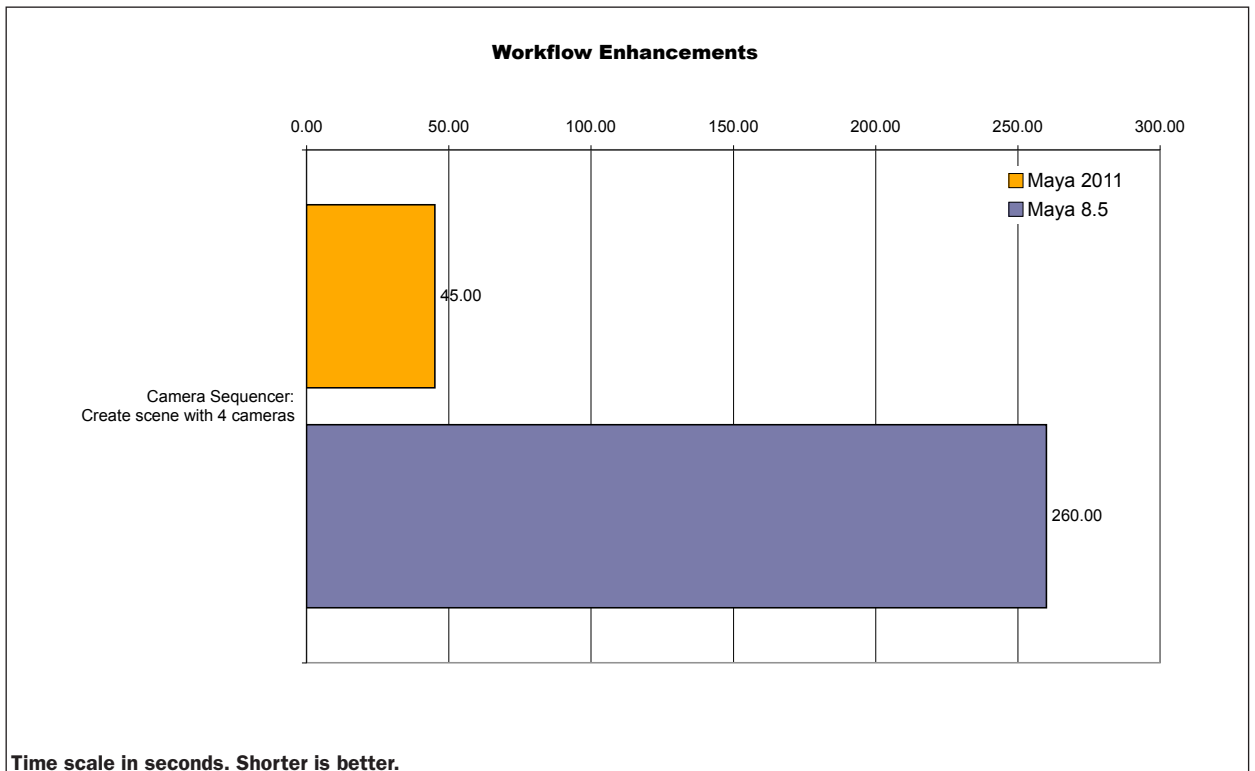
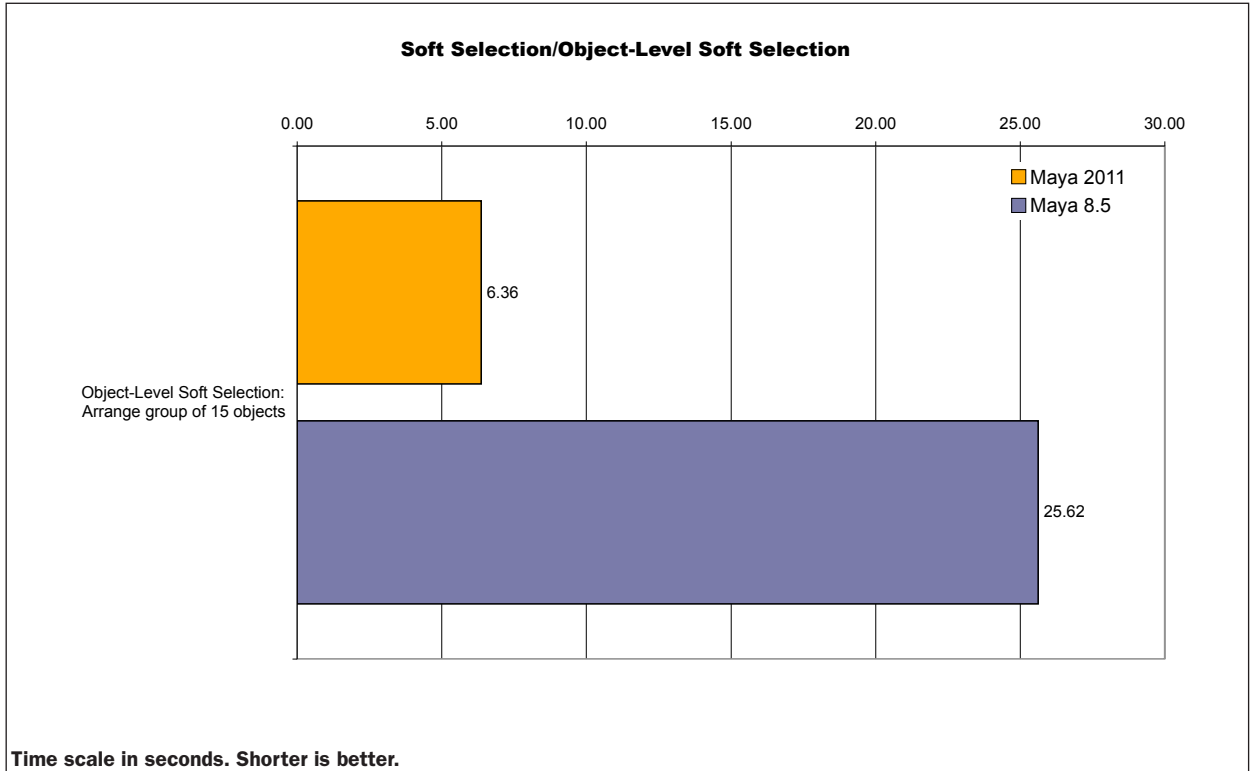
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Complete Results: Charts



Complete Results: Charts



Complete Results: Charts

