

# Multiverse Studio

Manage 3D complexity with efficient scene assembly, powerful set dressing, inter-ops with DCC apps — Multiverse is lighting fast, memory efficient, easy to use.

Quickly read, display, playback complex scenes in Maya® VP2 from on-disk packed geometry. Assemble and dress large sets with copy, instance & affine transformations. Assign materials/displacements and override attributes in a hierarchical fashion. Defer geometry generation at render-time in 3Delight, Arnold and RenderMan® with linear, topology-varying and deformation 3D motion blur. In addition, by leveraging on open source standards, Multiverse empowers inter-ops between Autodesk® Maya® and other DCC Apps such as SideFX® Houdini and Foundry Katana®.

— Made in Japan by J CUBE, in partnership with Foundry

## What's New in Version 5

January 15, 2018 — build v5.2.0

#### **New Features**

- Multiverse Look Outliner (MLO) Provides ability to quickly expand complex hierarchy trees, pattern-search, select hierarchy items and perform multiple hierarchical overrides for visibility, material/displace assignments, attribute set overrides and affine transformations. Always operates on packed geometry, fully in-sync with the Maya<sup>®</sup> VP2.
- **Hierarchical Selection** Allows to select any hierarchy item of a packed geometry without unpacking it both in the VP2 and in the new Multiverse Panel UI.
- **Hierarchical Assignments** It is now possible to assign materials/displacements and attributes to any hierarchy item of a packed geometry without unpacking it.
- **Procedural Resolve** Arnold, 3Delight and RenderMan<sup>®</sup> procedurals resolve materials, displacements and attributes assignments and overrides procedurally.
- Alembic and USD Sequences Allows writing & reading in Maya<sup>®</sup> sequences of Alembic or USD files as "file-per-frame" (rather than as a single, and potentially very large, file). File-per-frame sequences can be also written by Houdini 16.5.
- Alembic Layering Allows to selectively write and easily read Alembic data as layers and override any properties, such as Transforms, Positions, UVs, Normals etc.
- **Playback Caching** Largely improved playback performance of packed geometry thanks to a new parallel architecture and an dry-run playback cache.
- **New Draw Modes** "Bounding boxes" and "Point cloud" modes are fast and efficiently draw modes for packed geometry, respectively drawing as a bounding box or as a point cloud for each hierarchy item.
- **Rich Shading in VP2** Shading and texturing in VP2 according to material assignment to hierarchy items. Shading is enabled for all data: poly mesh, curves and points.





#### Improvements

- Hiding nodes with Maya's (CTRL+H) does not slow down playback anymore. Note that hiding a node, unlike using Multiverse's "bypass draw" mode, will not render the node.
- Generally improved reading speed.
- Generally reduced memory usage.
- Significantly reduced memory usage with duplicates.
- Largely improved performance when expanding hierarchies, now in the Multiverse Look Outliner: nearly instantaneous results even with very complex hierarchies.
- Velocity motion blur now properly matches the camera shutter type in Arnold, 3Delight and RenderMan<sup>®</sup> procedurals.
- Largely improved stability in the Arnold procedural during IPR.
- Largely improved update speed in the Arnold procedural during IPR.
- Full support of Arnold extension attributes for meshes, points, curves and mesh lights.
- Support for drawing of n-gons in VP2.
- Generally Improved the Katana reader.
- Better performance of point and curves in VP2.
- When unpacking, new shape nodes pivots are centered to their bounding box.
- Arnold, 3Delight and RenderMan® procedurals handle white spaces in file names.

#### Other

- New website at <a href="http://multi-verse.io">http://multi-verse.io</a>
- New user documentation.
- A Windows Installer is now provided.
- New Slack channel for customers invite/login
- Updated Alembic to v1.7.4
- Updated USD to v0.8.2
- Deposed Maya 2015 support, now the minimum supported version is 2016. Maya 2015 support can still be provided, to customers only.
- MLO functions depose older unpack functions which were removed from the shelf. They are currently available on Marking Menus for backwards compatibility only.

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