



# VR-TheWorld Server 4.1 Release Notes

This release note contains the following release-specific information for VR-TheWorld Server 4.1.

|                                                 |   |
|-------------------------------------------------|---|
| System Requirements .....                       | 2 |
| New Features and Updates .....                  | 2 |
| Updates to the VR-TheWorld Data Installer ..... | 3 |

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## System Requirements

VR-TheWorld Server 4.1 supports:

- Ubuntu 20.04 or later
- Red Hat Enterprise Linux (RHEL) 8 and later
- Windows 10 or later. The OS must support Windows Subsystem for Linux 2 (WSL2)

**i** CentOS Linux was an open-source enterprise operating system designed to be completely compatible with Red Hat Enterprise Linux. However, it has now transitioned to CentOS Stream, which acts as an upstream source for RHEL. New features will be introduced into CentOS Stream, where the bugs are worked out, and ultimately the new updates trickle down to RHEL. Since it is no longer essentially RHEL without the cost of a subscription, CentOS Stream is not a supported operating system.

## New Features and Updates

VR-TheWorld Server 4.1 is a major upgrade with many feature improvements, a refreshed user interface, and numerous bug fixes.

- Implemented a new licensing system (requires a new license key for all upgrades).
- Updated all front- and back-end dependencies to updated versions.
- Upgraded GUI to use Cesium, supporting a full 3D globe instead of merely 2D.
- Added the ability to set the GUI to either Dark or Light mode.
- Added MBTiles Raster layer type, allowing you to serve tiles from an existing MBTiles file.
- Implemented a new Job system that shows all long-running jobs in a single interface.
- Implemented backfilling tiling algorithm that speeds up tiling of large datasets by tiling them from the bottom up and reuses higher resolution tiles instead of source data to generate lower LODs.
- Improved speed of elevation layer tiling.
- Added masking and opacity support to Collection layers.
- Added support for Elevation Collection layers.
- Implemented resumable chunked file uploading to increase stability when uploading large files using the web interface and also to allow for multiple simultaneous file uploads.
- Added metadata support to layers to allow you to provide key/value pairs that are included in any MBTiles exports.

- Added support for using remote file sources via HTTP and Amazon S3 to layers.
- Implemented new file processing framework to allow you to run operations on files like reprojection, translation, and converting MSL elevation files to WGS84.
- Added ability to save elevation tiles in Mapbox Terrain RGB format in addition to TIFF and Cesium Quantized Mesh.
- Added ability to generate WebP tiles for Raster layers.
- Added support for WMS 1.3, in addition to 1.0 and 1.1, and improved GUI for creating WMS layers.
- Improved support for Spherical Mercator layers across the entire system.
- Added more options for cache outputs (TMS, Slippy, S3, etc.).
- Added ability to export layers as MBTiles.
- Added support for rendering remote vector tiles to the Mapnik layer.

## Updates to the VR-TheWorld Data Installer

There are also data changes and additions. Some of the highlights include:

- Added the Maxar Sample Schwyz, Switzerland, imagery, elevation, and classification. This is one of the free sample data available from Maxar at <https://resources.maxar.com/product-samples>.
- Updated the Copernicus Land Cover raster layer (188) to the latest version (v3.0.1, 2019).
- Updated Copernicus Very High-Resolution Imagery WMS proxy layer from 2012 to 2018 server.
- Added Procedural Airport feature layers.
- Updated Oahu building footprints to fix some data errors.
- Removed all of the old, non-257-tiled elevation layers.
- Updated the OpenStreetMap MBTiles datasets.

