Release guide

LuciadLightspeed 2023.1

14 December 2023

Contents

About this release

The 2023.1 release of LuciadLightspeed adds structural improvement to the 3D Tiles Engine, also called Meshup. This engine was added with our 2018 product release. After five years, we decided to refresh it to make it leaner and more powerful.

This release also includes important security upgrades and bundles a set of specific enhancements, all based on user feedback. Please also read our advanced notice of the minimum supported Java version for LuciadLightspeed for next year and beyond.

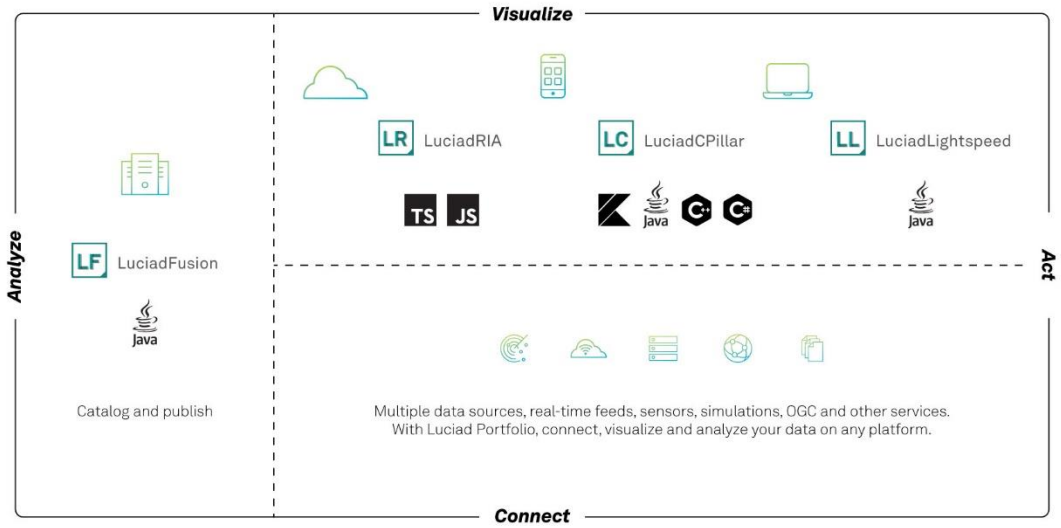


Figure 1: *The Luciad portfolio*

Benefits of new features

Faster and more compact 3D tiles

The 3D Tiling Engine (See Figure 2), also referred to as Meshup, has been structurally improved. As a result, tiling your data using the 2023.1 release:

- Is faster
- Uses less memory
- Produces smaller output results, using fewer tiles

This not only improves processing time, but also decreases time spent downloading the data in the client.

The difference is most noticeable for large datasets, as well as datasets with repeating textures.

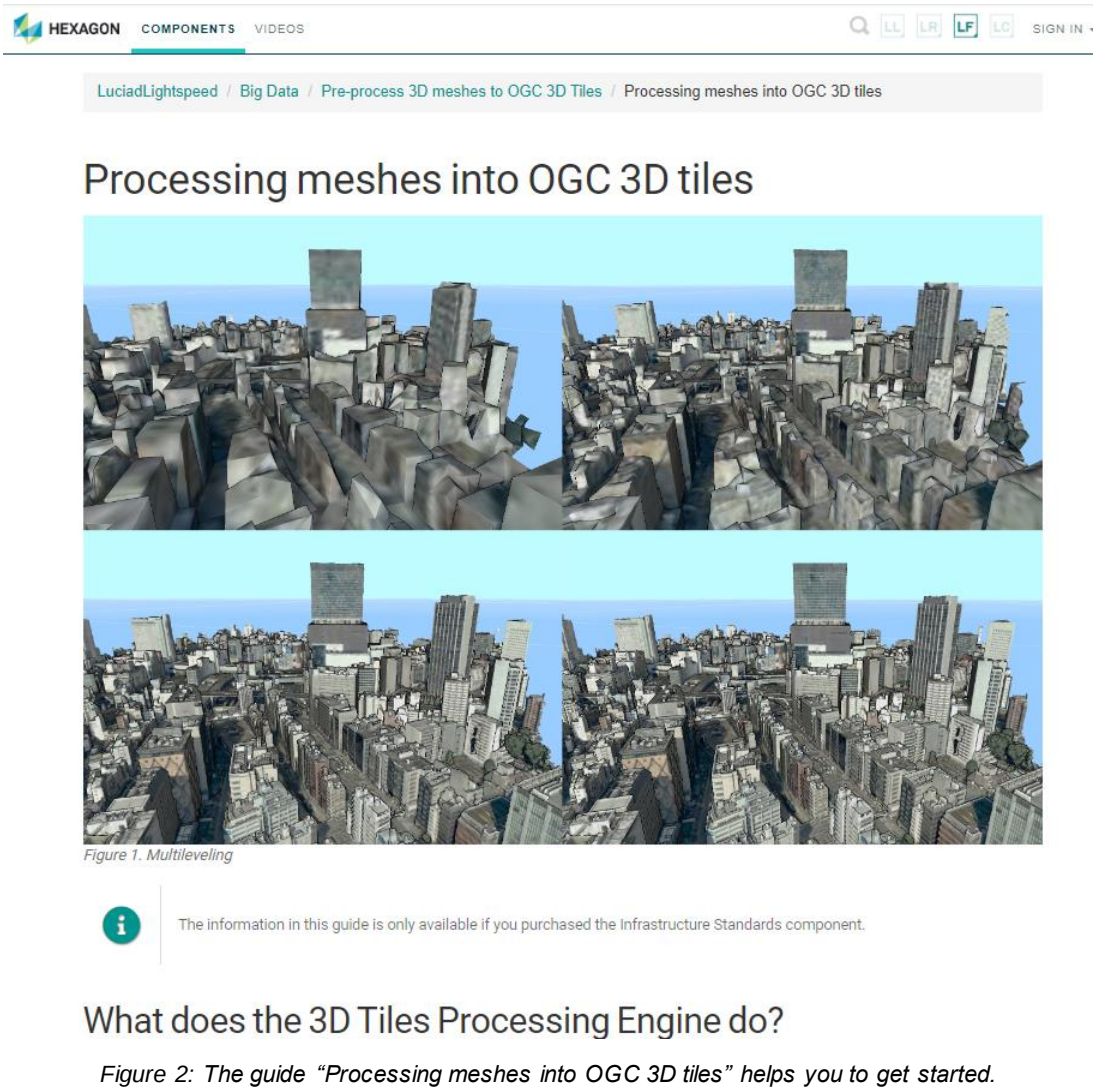


Figure 1. Multileveling

Figure 2: The guide "Processing meshes into OGC 3D tiles" helps you to get started.

Articles to get you started

The updated algorithms are enabled by default. If you are new to this topic, the article "Processing meshes into OGC 3D tiles" will help you get started. (See Figure 2.)

MBTiles vector decoder

MBTiles is an open format[1] for storing tile sets, based on the SQLite database. MBTiles can contain raster or vector tile sets. LuciadLightspeed already supports MBTiles raster data. This release adds support for MBTiles vector data. Typically, the MBTiles vector format stores data like administrative boundaries, road networks or points of interest.

Articles to get you started

The MBTiles vector data format description has been added to the article “Working with MBTiles data.” The new section “Visualizing vector tiles” is your starting point. In addition, some code snippets are available in the API documentation for “TLcdMBTilesModelDecoder”.

Minimum supported Java version

For many years, we have fixed the minimum Java version for LuciadLightspeed to 8. With this release, we are giving advanced notification that the LuciadLightspeed 2023.x releases will be the last releases supporting Java 8. For the LuciadLightspeed 2024.0 release, we plan to raise the minimum version to Java 17 (both Oracle JDK and OpenJDK are and will be supported.)

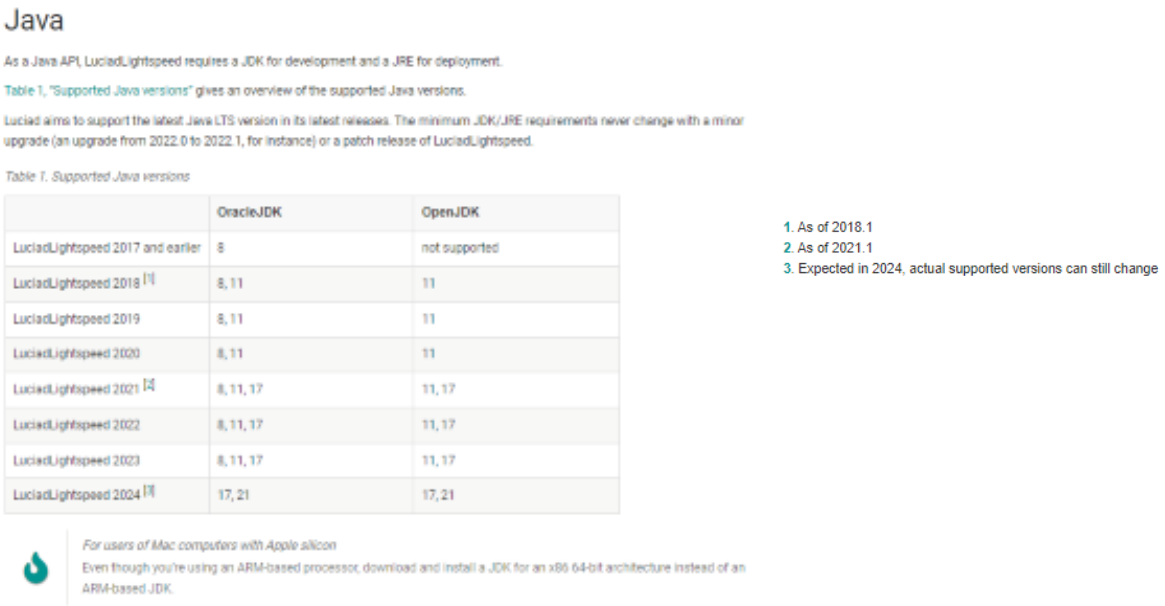
Going forward we aim to support the latest Java LTS version in our latest releases. The minimum JDK/JRE requirements will never change with a minor upgrade (an upgrade from 2022.0 to 2022.1, for instance) or a patch release of LuciadLightspeed.

This also applies to LuciadFusion.

If you have any further questions or feedback on this topic, please contact the Luciad Product Management team at product.management.luciad.gsp@hexagon.com.

Articles to get you started

The documentation on “Hardware and software requirements” includes a new section that describes our policy and includes an overview of the supported Java versions for the various LuciadLightspeed product versions.



Java

As a Java API, LuciadLightspeed requires a JDK for development and a JRE for deployment.

Table 1, "Supported Java versions" gives an overview of the supported Java versions.

Luciad aims to support the latest Java LTS version in its latest releases. The minimum JDK/JRE requirements never change with a minor upgrade (an upgrade from 2022.0 to 2022.1, for instance) or a patch release of LuciadLightspeed.

Table 1. Supported Java versions

	OracleJDK	OpenJDK
LuciadLightspeed 2017 and earlier	8	not supported
LuciadLightspeed 2018 [1]	8, 11	11
LuciadLightspeed 2019	8, 11	11
LuciadLightspeed 2020	8, 11	11
LuciadLightspeed 2021 [2]	8, 11, 17	11, 17
LuciadLightspeed 2022	8, 11, 17	11, 17
LuciadLightspeed 2023	8, 11, 17	11, 17
LuciadLightspeed 2024 [3]	17, 21	17, 21

1. As of 2018.1
2. As of 2021.1
3. Expected in 2024, actual supported versions can still change

For users of Mac computers with Apple silicon

Even though you're using an ARM-based processor, download and install a JDK for an x86 64-bit architecture instead of an ARM-based JDK.

Figure 3: An overview of the supported Java versions (also available in the product documentation)

[1] https://github.com/mapbox/mbtiles-spec

Security upgrades

The 2023.1 release of LuciadLightspeed includes several security updates. The release notes provide full details on the updated, removed and added dependencies. Please look for “security updates” in the upgrade considerations.

Product license versioning

Starting from the 2023.1 release, you only need a new product license for a major LuciadLightspeed product version.

More specifically, for version 2022.0 and 2022.1, you still need separate licenses. If you use your license file for LuciadLightspeed version 2023.0 with LuciadLightspeed version 2023.1, it will work. Of course, both product versions must have matching configurations, with an equivalent product name, product tier and options list.

Other improvements

- **DAFIF improvement:** DAFIF Path Point records are now supported. These records are used to store the path to be followed to land on the runway. In the past, a radar (ILS) was used for the final part of the approach before landing on the runway. GPS-based systems rely on a lateral and vertical path that needs to be followed, which is the information stored in Path Point records.
- **Support for Asterix Category 34:** This release adds support for radar status messages, encoded as Asterix Category 34. This category and its description have been added to the article “Overview of the ASTERIX specifications for the supported categories” in the product documentation.
- **LuciadLightspeed now supports AutoCAD DWG 2018 files**
- **The documentation section on OGC SLD/SE styling has been extended with a new example for styling road data.** See the article “How to style roads.” and Figure 4 for an illustration.

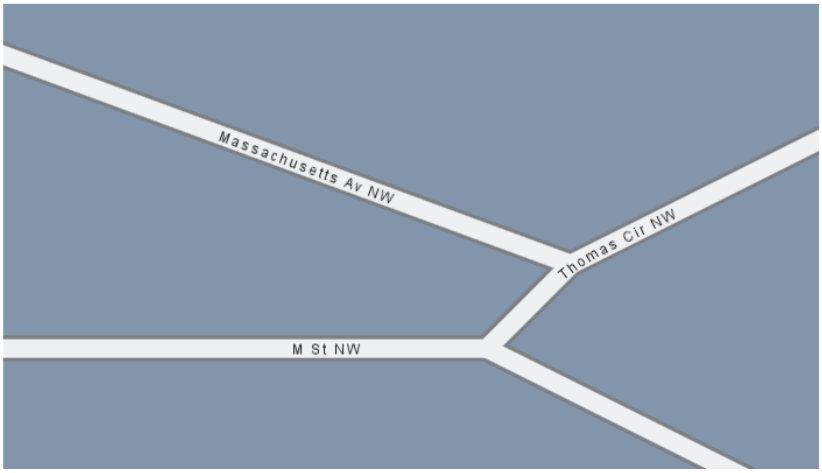


Figure 4: Road styling with world-sized road widths and labels inside the roads

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