

# What's New in Carmenta Engine 5.4

The new version of Carmenta Engine brings significantly faster handling of moving objects on top of the map, as well as a new way to package map data for easy distribution.

For a full list of the over 80 new features and improvements in this release, refer to the release notes that are included in the installation packages.

## Map Package Extension

This extension makes it possible to package a mix of images, raster data (for example digital elevation models) and vector data into a single Map Package file.

Pregenerated spatial indexes and built-in low-resolution versions of the raster data ensure very efficient access to the package data. This is especially important for mobile devices where it is essential to minimize the amount of processing necessary to read and display data, but map packages work equally well in desktop and server installations.

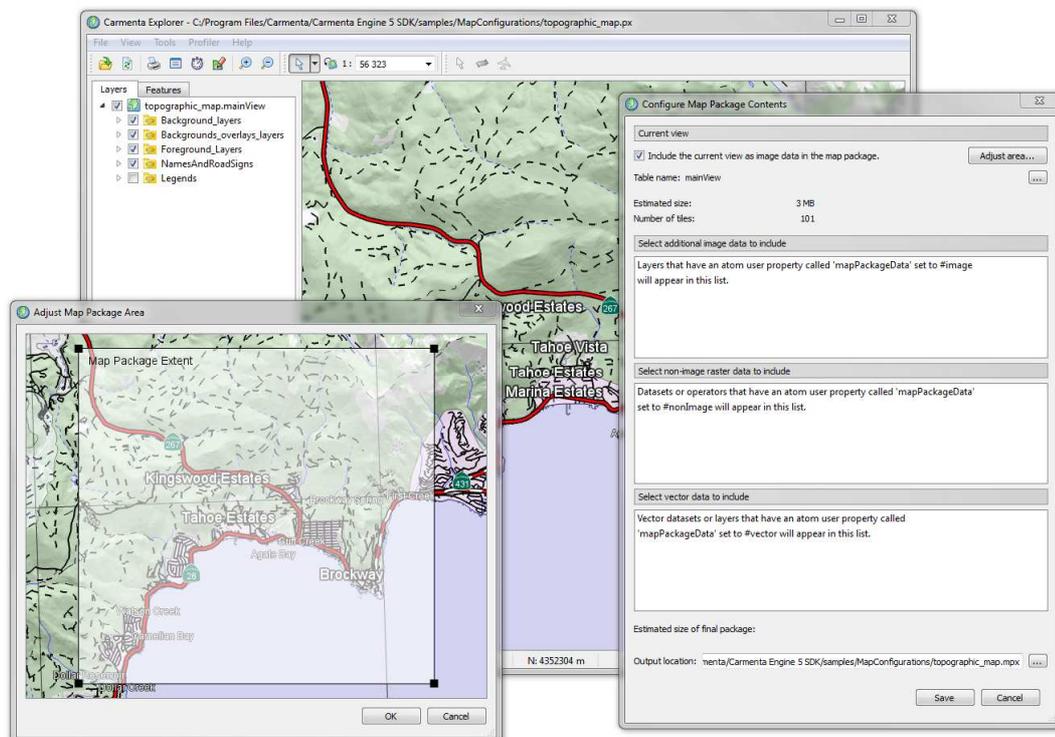


Image 1. Exporting a section of a map to a Map Package using Carmenta Explorer

Since they are single, self-contained files, map packages are easy to distribute and install. Packages can be generated from regular Carmenta Engine map configuration files using Carmenta Explorer, and are accessed using the new `MapPackageDataSet` class.

Carmenta is committed to ensuring that our products implement open standards whenever possible. The map package structure is aligned with the current draft OGC GeoPackage specification.

## Optimized Caching of Dynamic Objects

A new mechanism in the `OrdinaryLayer` class supports efficient, hardware accelerated caching of dynamic features stored in a `MemoryDataSet`. This feature can drastically improve performance for map layers which contain large numbers of moving objects.

The new mechanism is enabled by setting the `OrdinaryLayer.CacheMode` property to `Dynamic`. Refer to the documentation of this property for more information on how to use it.

## Support for New Operating Systems

Carmenta Engine 5.4 is the first Carmenta Engine version that is available for Android™. For more information, refer to the separate document “Introducing Carmenta Engine for Android”, available from [carmenta.com](http://carmenta.com).



Carmenta Engine is now also fully tested and supported on Microsoft Windows 8, both 32 and 64 bit versions.



## Other Notable Improvements

### Sharper Raster Data Rendering with OpenGL and DirectX

Improvements to the visualization of raster data using the hardware accelerated OpenGL and DirectX renderers have resulted in both significantly sharper maps and slightly reduced graphics card texture memory consumption.

### Smoother Text Rendering for Moving Map Displays

The new `View.RenderingHint` property can be used to change the way text labels are drawn in the map. When `RenderingHint` is set to `MovingMap`, texts will move more smoothly across the screen since they will not be aligned to the nearest pixel.

### Batch scripts for easier deployment of Carmenta Engine Runtime

The Carmenta Engine SDK package now includes batch scripts which can be used to copy all required Carmenta Engine Runtime libraries to an application's deployment folder. This makes it very easy to create so-called "XCOPY deployments".

### Support for Spherical Formulas for More Projections

Carmenta Engine can now detect and instantiate spherical reference ellipsoids for more types of coordinate reference system definitions. Spherical formulas are often used for meteorological data.