

# How to improve Locus Map's performance?

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There are a few factors that can slow the app response down which may be sometimes annoying. To prevent Locus lagging try to adhere to the following principles:

## Turn off extra map layers

Map features like [Overlays](#) or [WMS maps](#) that display multiple map layers can sometimes inhibit Locus performance. Therefore, use them only if you really need them and switch them off when you get by with a single map layer.

**Map shading** - hill shading or even more slope gradient coloring rendered from .HGT files need a lot of calculation and can sometimes influence your device's performance.

## Do not visualize too many points and tracks

If you visualize thousands of points or hundreds of tracks on the map be prepared for very slow start of the app that has to process huge amount of data. There is no exact number of visible points or tracks that are behind the deadline as it depends on your hardware capabilities. Nevertheless, work with such data that you need at the moment - keep others inactive.

**Geocaches** contain large amount of information, much more than ordinary points of interest, so numbers of active caches can be even lower in order to maintain the app usability.

**Geocache waypoints** engage your device system even more than their original caches - we recommend to display as many waypoints as you really need for your immediate work.

## Do not display too many or too large map items

Some KML/KMZ maps or other files that are stored in the "[Map Items](#)" window can be really large. Locus needs some time to process such great amounts of data which can inhibit its responsiveness.

## Vector maps are rendered within the app

Vector maps like e.g. our [LoMaps](#) have a great advantage in their downloading and storage data size but before their display the data must be transformed into graphics within the application. The process of the map rendering is slower than simple displaying raster maps that consist of ready made map tiles (that, on the contrary, are huge). The newer your device is, the faster is the map rendering.

## Merged SD card and internal memory

Since Android 6.0 Marshmallow there is a feature called **Adoptable Storage**. It allows a removable microSD card installed on an Android phone to be used as the internal storage. This way you can cross the space hurdle if the phone has a low internal memory.

However, this feature has a huge drawback if an ordinary slow SD card is used - apps are lagging and overall performance of the phone is low. Including Locus.

It is, therefore, strongly recommended to **use high-performance and speed SD cards** if you decide to merge your phone storage.

More info e.g. [here >>](#)



In case you maintain all the principles above and yet, the app is lagging, try to follow [these instructions](#) are let us know.

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<https://docs.locusmap.eu/> - Locus Map Classic - knowledge base

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