

# Open Street Map Client v0.8

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The component downloads and shows tiled map from Open Street Map server.

Supported platforms: PC, MAC, Linux, Android, iOS, WebGL.

## Features

- Shows map around given location.
- Adjustable scale of map and tile size.
- Adjustable server URL of OSM map.
- Caching of tiles.
- Gestures (touches and mouse).
- Auto positioning by GPS.
- Easy in usage.

## How to use

Just drag Map prefab on your scene. Map contains own camera, so you need to remove camera from your scene if it is presented there.

## Settings

OSM Client is too easy in usage. Just specify *Latitude* and *Longitude* of OSMController and map will be automatically rebuilt.

You can adjust *Zoom*. OpenStreetMap allows zooming from 1 to 19-22 (dependency from server).

Parameter *TilesAroundLocation* defines how many tiles will be loaded around current location.

*TileSize* adjust physical size of each tile.

You can define OSM server URL. The *TileServerURL* should contain three parameters {0}, {1}, {2} for X, Y and Zoom respectively.

For example, URL for standard OSM server looks the following way:

`http://a.tile.openstreetmap.org/{2}/{0}/{1}.png`

Property *Caching* defines how cache will be used. Value *Disable* – switches off caching. All tiles will be downloaded from server online. *Synchronous* – tiles will be saved and loaded from disk. In this mode tiles will not be displayed until they are loaded from disk. *Asynchronous* – tiles will be saved and loaded from disk. But at the same time, the tiles will be displayed even if they are not loaded from the disk.

Synchronous mode does not show unprepared tiles. But this mode can freeze pan and scale.

Asynchronous mode shows unprepared tiles. It makes pan and scale more smoothed. But at same time tiles can be shown with empty texture.

OSMController contains several useful functions and properties:

- `public Vector3 LocationToPosition(double lat, double lon)` – translates location (given as Latitude and Longitude) to position on the map. Position is defined in local coordinates relative to Map GameObject.
- `public Location PositionToLocation(Vector3 pos)` – translates local position (relative to Map) to Latitude and Longitude.
- `public float GetMeterSize()` – returns size of one meter relatively to current map scale and location. You can use it to scale overlay map objects.
- `public float Scale` – returns current absolute scale of the map. You can use it to scale overlay map objects.

These functions allow you to place own objects on map.

Also, OSMController contains event *MapChanged*. The event is fired when the map was rebuilt. It happens when any parameter of OSMController was changed (include Latitude, Longitude, Zoom, TileSize, TilesAroundLocation, etc).

## Gestures

OSM Client supports gestures – in both touches and mouse.

There are three gestures – pan, scale and rotate. You can adjust parameters of gestures in properties of scripts OSMController and SimpleGestures.

To enable/disable gestures – use property *EnableGestures*. To disable gestures by mouse – set property *SimpleGestures.SimulateTouchWithMouse* to false.

## GPS

OSM Client supports auto positioning with GPS receiver. To enable/disable GPS positioning – enable or disable script GpsProvider in Map object.

When enabled, GpsProvider will automatically set your location in map object. You can adjust your position on map by pan. However if you move too far from actual GPS position – GpsProvider forcibly return you to actual GPS location.

Max distance of autoreset you can set in property *AutoResetLocationDistance* of GpsProvider (measured in meters).

Also GpsProvider can estimate direction of moving and set view direction on map. To enable this feature – set property *CalculateViewDirection* to true.

Note: You should get permissions to use GPS on your device.

<https://developer.android.com/training/location/permissions>

## Links

List of OSM tile servers: [https://wiki.openstreetmap.org/wiki/Tile\\_servers](https://wiki.openstreetmap.org/wiki/Tile_servers)

## License

Please read license of usage of OSM tile server: <https://operations.osmfoundation.org/policies/tiles/>

## Contacts

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