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Configure a Local Map Tile Server for the MapApp using OpenMapTiles

SUMMARY

The MapApp

The MapApp is one of the InTouch OMI apps included as a feature of the Wonderware System Platform 2017 product, and is located in the Graphic Toolbox with the other default apps (Figure 1 below).

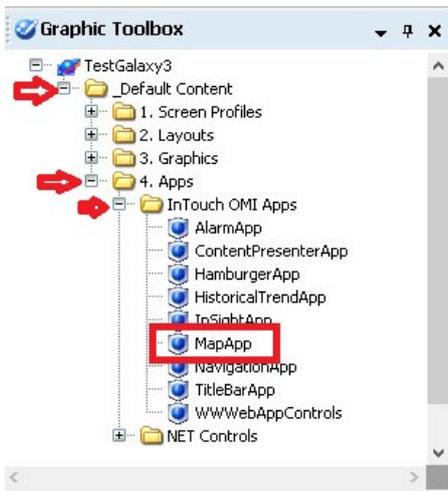


Figure 1: MapApp In IDE Graphic Toolbox

SITUATION

Offline Maps

By default, the MapApp uses an online (Internet-based) source for the individual graphic images that are stitched together at runtime to form the visual map, so called **Map Tiles**. In some situations, access to the Internet from the runtime node is not possible due to location or security concerns, but there is still a need to use the mapping functionality. In these cases, the map tiles (Map Tile Data) must be downloaded ahead of time, placed onto the runtime node, and a specialized service (Map Tile Server) needs to be configured and run on the runtime node to provide access to the map tiles at runtime.

One such example of this combination of Map Tile data and Map Tile Server is the OpenMapTiles Map Tile and Map Server product.

This *Tech Note* describes the step-by-step procedure to configure a local server for MapApp using OpenMapTiles Map Server product as an example.

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ACTION

PURCHASE, CONFIGURE, AND DEPLOY THE TILE SERVER

Before creating a Map Tile Server using OpenMapTiles for your production environment, you must purchase a license to use OpenMapTiles from <https://openmaptiles.com>. Prior to going into production, you can download the OpenMapTiles product to try in a temporary, non-production environment. After you purchase a license for OpenMapTiles, follow the steps below to create and deploy a Map Tile Server into production:

Docker

Docker will be used to simplify the deployment of the Map Tile Server. Docker is an application that performs operating-system-level virtualization also known as containerization. It is developed and maintained by Docker, Inc. It works in both Windows and Linux environments.

The Map Tile Server runs inside a Docker Container and is simple to configure:

DOCKER FOR WINDOWS

1. Go to <https://openmaptiles.com/server/>
2. Click **Install server**.
3. In the **Run your own OpenMapTiles Map Server** section at the top, click the **Windows** button.
4. Then follow the guide steps to setup an OpenMapTiles server.
Note 1: Docker installation Requires Operation System of Microsoft Windows 10 Professional or Enterprise 64-bit, for previous versions you need get a Docker Toolbox installed.
Note 2: Go to the setting of the docker, select the general tab, make sure the "Start Docker when you log in" is checked.
5. Click the XYZ hyper-link of services, get the URL of the service.
6. Replace the **localhost** part of the URL with your IP address.
7. Save the URL.

DOCKER FOR LINUX

1. Go to <https://openmaptiles.com/server/>
2. Click **Install server**.
3. In the **Run your own OpenMapTiles Map Server** section at the top, click the **Linux** button.
4. Then follow the guide steps to setup an OpenMapTiles server.
Note: if you want to restart you server even when the server machine is restarted, you can change the docker started command as below:
`docker run -it -d -v $(pwd):/data -p 8080:80 klokantech/openmaptiles-server.`
5. After the map server started, you can view the map through Viewer.
6. Click the XYZ hyper-link of services, get the URL of service.
7. Replace the **localhost** part of the URL with your IP address.
8. Save the URL.

CONFIGURE THE MAP APP TO USE LOCAL MAP TILE SERVER

Complete the following steps to configure the MapApp to point to- and use the local Map Tile Server configured in the previous steps of this document:

Open the MapApp Configuration Editor

NOTE: Refer to Figure 2 (below) while performing the following:

1. Open the ArchestrA IDE and open your Galaxy.
2. Go to **Graphic Toolbox**.
3. Locate **MapApp**, right click on it and click **Open**.

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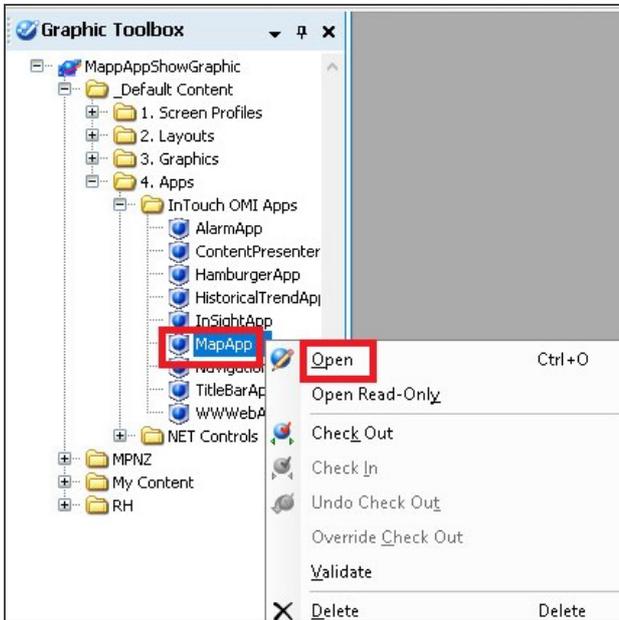


Figure 2: Open MapApp Configuration Editor

Add Local Map Tile Server as the Map Tile Source

NOTE: Refer to Figure 3 (below) while performing the following:

1. Click the **Sources** tab.
2. Add a new source and choose its Provider as **XYZ**.
3. In the **Properties** panel for that source, select the **Base Map** Type.
4. In the **Source URL** field, provide the URL saved from the Docker section above.
5. Save and close **Map Settings**.

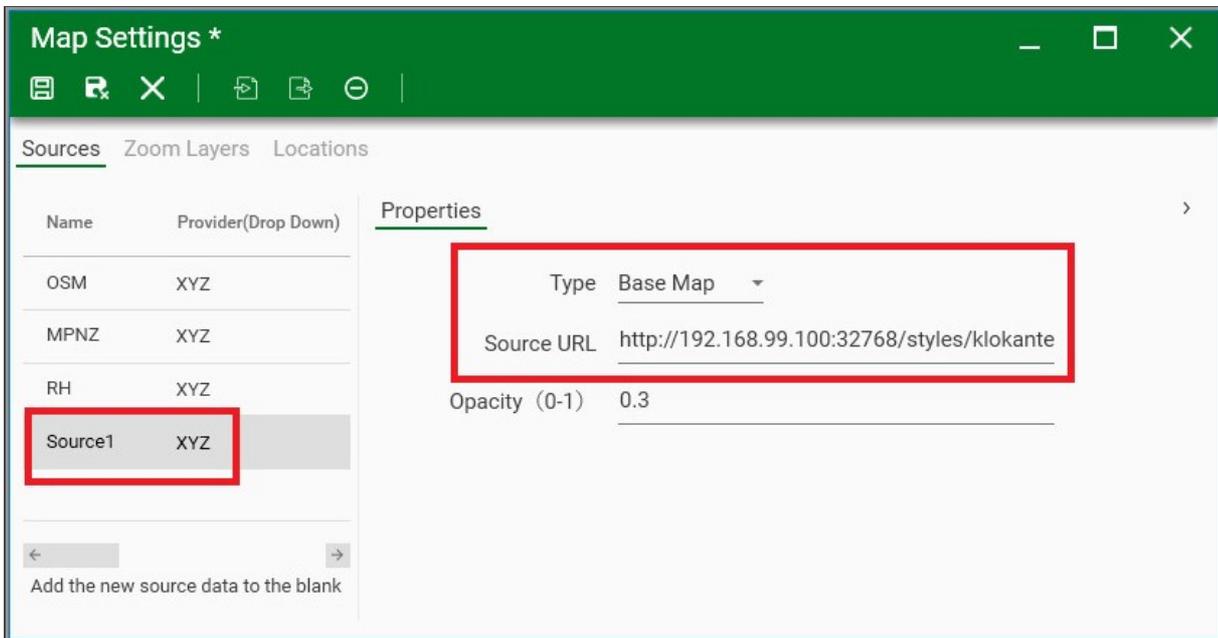


Figure 3: MapApp Settings

Use the MapApp in an InTouch OMI ViewApp

1. Create an instance of that MapApp.
2. Embed the MapApp instance in a \$ViewApp.
3. Deploy the \$ViewApp instance.
4. Open the Wonderware Application Manager, locate the deployed \$ViewApp and open it.
5. The MapApp should display the correct data.

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