Upload and publish maps to the ArcGIS Server

A. Make a connection to the ArcGIS server

1. Open ArcGIS and open the Catalog window

2. Open the ‘GIS servers’ folder and double-click ‘Add ArcGIS server’

3. Click ‘Publish GIS services’ and click next

4. Type the server URL of the ArcGIS Server site: http://54.228.203.57:6080/arcgis/rest/services

5. Select ArcGIS server as Server Type

6. Fill in your username and password

7. Click finish.
B. Publish your map to the ArcGIS server

1. Open the map document you want to publish on GeoPlaza, make sure the symbology of the layer(s) is set, the legend items are appropriate and that your map will look good at different zoom levels.

! When you have a simple map that doesn’t ask for a different symbology at different scales or zoom levels, continue sharing your map. Go to step 2 on page 6. Otherwise, follow the advanced tutorial on the next page.

8. The connection will appear in the GIS servers node in the Catalog window.
**Advanced tutorial: set symbology per zoom level**

**Designing your map at different zoom levels:**
When you upload a map, you can make use of **tiles from a cache**. This means that for different scale levels images (tiles) are saved on the server. When the server is requested to show the map, these cached images are returned instead of drawing the map again. This is much faster. The **tiling scheme** determines at which scale levels the images are created. The mapviewer in Geoplaza uses the ArcGIS Online / Bing Maps / Google Maps tiling scheme.

Since this tiling scheme is used in the Geoplaza mapviewer, the map should be designed at those scales in ArcMap. For **raster** maps ArcMap resamples the data at the different scale levels, (continue with step 2 on page 5). However, **vector** data will use the same symbols at each scale level. This means that your symbols will look cluttered or just too small at certain scale levels. A way to overcome this problem is to design your **vector** map in such a way that it looks good at different scale levels.

**You might want to:**

*See labels next to symbols only beyond a certain scale level:*
- Right click **layers**, click **labels** tab, click **scale range**, set **minimum** and **maximum scale**

*See only a selection of the features at a large scale, but you want the whole layer to become visible at smaller scales,*

*or*

*See different layers at different scales, for example less detailed layers at a large scale, more detail at smaller scales*

**b. Set the appropriate symbology at different scales:**
- For each scale level that you want to have a different symbolization, create a group layer and copy the layers that you want to show at that scale level into it > right-click **layers** and click **new group layer**, then **ctrl + drag** the layers into the group layers (when your map consists of only one layer, just copy this layer for every scale level where the symbolization needs to be changed).

**a. Load ArcGIS online / Bing Maps / Google Maps scale levels:**
- click **customize this list** in the dropdown list of scales in the **standard toolbar**
- In the **scale settings window** click **load** and click **ArcGIS online / Bing Maps / Google Maps**

![Image of ArcGIS Online/Bing Maps/Google Maps scale levels]

- enable only display these scales when zooming
• Zoom out to the smallest scale you want the map to be viewed and set the symbology of the layers in the group layer.

• If you want to show only a selection of features, set a definition query for that group layer > right-click on the layer, click properties, and click on the definition query tab, enter a selection query (f.e.: population > 400).

• Zoom to the next scale levels and change the symbology for the appropriate group layer.

• Set the scale range for each group layer: only one group layer will be visible at each cached scale. Set the scale range with a tolerance around each scale or range of scales. For example when you want to use a certain symbology to be used only at scale level 10, set the minimum scale at 1 : 866.685 and the maximum scale level at 1 : 1.733371 (see the scale levels and tolerance values in the table on the next page).
When your map is designed in such a way that it looks good at different scale levels, you can continue sharing your map (step 2 on page 6):
2. Choose **File → Share as → Service**

   ! Make sure the ArcGIS server connection you created is turned on in the Catalog window (double-click to connect)

   Disconnected: arcgis on 54.228.203.57_6080 (publisher)
   Connected: arcgis on 54.228.203.57_6080 (publisher)

3. Choose: **publish service**, click **next**

4. Enter an appropriate **new name** for the service, click **next**
5. Select an **existing folder** on the server where you want to save your map service, or create a **new folder**, click **continue**.

!

6. The **Service Editor window** opens, here you are able to control the way your map service can be used.

!

7. **General** tab: lists the general properties of your service.

8. **Parameters** tab:

   - **Anti-aliasing**: graphic technique that let borders appear smoother.
   - **Properties**: *max number of records returned by the server*.
     How many records can be returned by the server to a client (GeoPlaza), when you choose a large number of records to be returned by the server, this can slow down the performance of the client.
9. **Capabilities** tab:

Select the capabilities that your map service should enable (what can users do with your map, only view it or also download the source data?). You can enable three different capabilities: WMS, WFS and WCS, (the other capabilities will not be used here and should be un-checked in the capabilities tab, only the mapping capability is always activated).

For all maps enable:

- **WMS** (Web Map Service):
  Map image and legend will be visible in the map viewer in GeoPlaza

To enable users to download **vector** features (Shapefile) select:

- **WFS** (Web Feature Service):
  Option to download the vector source data (points, lines, polygons) will appear in the map viewer in GeoPlaza

To enable users to download **raster** images (.tiff) select:

- **WCS** (Web Coverage Service):
  Option to download the raster source data (image) will appear in the map viewer in GeoPlaza

10. **Pooling** tab: leave the default settings

11. **Processes** tab: leave the default settings

12. **Caching** tab:

   ![Caching Tab Image]

In the **caching tab** perform the following steps:

- When your map consists of different layers that all should have the possibility to be turned on or off in the mapviewer on Geoplaza, always use: **draw this map service: dynamically from the data**
- When your map is relative simple (small file size) and is not designed for different zoom levels, choose also: **draw this map service: dynamically from the data**

Continue with step 13.
• When your map is designed for different zoom levels (see advanced tutorial, starting on page 3)
  o choose: **draw this map service: using tiles from a cache**
  o Tiling scheme: choose **ArcGIS online / Bing Maps / Google Maps**
  o Set the levels of detail, use the sliders to determine at what scale levels the tiles should be created. Set the **left slider** to the left, set the **right slider** to the scale level that is most used to view the map.
  o Select **build cache automatically when the service is published**

13. Before publishing your map service to the ArcGIS server you can **preview** the map, and check the service for errors by clicking **analyse**

14. Now you are ready to publish your map on the server (click **publish**), this may take a while.