ArcGIS Image for ArcGIS Online Tool Talk

Bruce Godfrey
GIS Librarian

bgodfrey@uidaho.edu
What is ArcGIS Image for ArcGIS Online?

• Software-as-a-Service that lets users in an ArcGIS Online organization host, analyze, and stream imagery and raster collections.
  ○ Previously limited to tile layer for rasters (picture)
• Expands imagery data management, visualization, and analysis to a hosted environment.
How Long Has This Been Available?

• Summer 2021 – initial release
• Spring 2022 – U of I participated in pilot for higher education
• Summer 2022 – added to Esri Educational Institution Agreement
Next "Big" Transition for Sharing Rasters?

• Early Years – SDE rasters & ArcIMS
• Middle Years - .ISDef files Image Server --> ArcGIS Server
• Recent Years – Mosaic datasets w/ ArcGIS Server --> Enterprise sharing to ArcGIS Online
• Looking Ahead – ArcGIS Image for ArcGIS Online?
Getting started

• Licensing
  o Using Vandal NetID sign into the U of I Teaching & Scholarly Research Portal (https://uidaho.maps.arcgis.com) using a web browser or ArcGIS Pro
Publishing Hosted Imagery

ArcGIS Pro

Web Browser

Create Hosted Imagery

Create hosted imagery layers on ArcGIS Online by uploading data.

Choose layer type(s):
- Tiled Imagery Layer

Do you have a single image or a collection of images?
- Single image
- Collection of images
- Mosaic Dataset

Feature layer
Create an editable layer with fields copied from a template or feature layer.

Application
Link to an application on the web or create a new registered application.

Tile layer
Create a fast drawing vector tile layer or raster tile layer.

Locator
Find places and addresses using the ArcGIS World Geocoding Service or your own geocode service.

URL
Link to an ArcGIS Server web service, KML, OGC WFS, OGC WMS, OGC WMTS, or GeoJSON.

Imagery layer
Create an imagery layer using images from your computer.

Scene layer
Create a fast drawing scene layer using 3D content.
Publishing Hosted Imagery

• General steps:
  o Choose a layer type
  o Choose a layer configuration
  o Select and define imagery
  o Add item description
Publishing – Layer Type (ArcGIS Online)

Choose the layer types that best suit your needs

- **Tiled Imagery Layer**
  - Provides imagery access as static tiles and associated metadata
  - Supports client side processing and rendering
  - Can be used as an input to raster analysis
  - Share: Everyone
  - OGC WMTS (RGB w/ JPEG comp.)
  - Feb. 22 – Raster Function Templates (Beta)
  - No update (delete & replace)

- **Dynamic Imagery Layer**
  - Provides versatile dynamic imagery access capabilities
  - Supports on-demand server side processing and dynamic mosaicking
  - Supports managing a collection of images
  - Can be used as an input to raster analysis
  - Share: Organization
  - Comparable to Image Service
  - Raster Function Templates work
  - Service can be updated (ArcGIS API for Python)

Can publish both or just one
Publishing – Configure Tiled (ArcGIS Online)

Choose a layer configuration based on your imagery

- **One Image**
  - Uses a single, processed image to create one layer
  - Compatibility: Supports all common image formats

- **One Mosaicked Image**
  - Mosaics multiple images into a single dataset to create one layer
  - Compatibility: This option supports all common image formats and satellite products at various levels

- **Multiple Imagery Layers**
  - Creates one layer for each input image
  - Compatibility: Supports all common image formats
Publishing – Configure Dynamic (ArcGIS Online)

Choose a layer configuration based on your imagery:

- **One Image**
  - Uses a single, processed image to create one layer
  - Compatibility: Supports all common image formats

- **One Mosaic Image**
  - Mosaics multiple images into a single dataset to create one layer
  - Compatibility: This option supports all common image formats and satellite products at various levels

- **Image Collection**
  - Manages a collection of images using a single layer
  - Mosaics images dynamically
  - Each image can be accessed independently
  - Compatibility: This option supports all common image formats and satellite products at various levels

- **Multiple Imagery Layers**
  - Creates one layer for each input image
  - Compatibility: Supports all common image formats
Publishing – Define Tiled (ArcGIS Online)

Choose the raster type that best describes your imagery

Choose the raster dataset.

Configure properties

Select input imagery

Drag and drop image files or folders here, or

Convert to cloud raster format

No imagery selected.
### Result – New Item(s) in ‘Content’

<table>
<thead>
<tr>
<th>Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ArcGIS Image for ArcGIS Online Demo - Tiled</td>
<td>Tiled Imagery Layer (hosted)</td>
</tr>
<tr>
<td>ArcGIS Image for ArcGIS Online Demo - Dynamic Collection</td>
<td>Imagery Layer (hosted)</td>
</tr>
</tbody>
</table>
Raster Analysis (Map Viewer Example)
Testing Results

• 4 individual 3-band .tif files totaling 4.3GB published as a mosaic in 15 minutes
• 6 individual 3-band .tif files totaling 7.8GB published as a mosaic in 30 minutes
Resources

- ArcGIS Blogs - ArcGIS Image for ArcGIS Online
- Get Started with ArcGIS Image for ArcGIS Online - Esri Community