Enhancing Web Map Performance in ArcGIS Online

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Points to consider before creating the web map

Who will be using this web map?

What functionality do the users need?

What information is important?

How will the map or application be accessed?

What type of experience am I trying to convey?
Case Study

Residents of the City of Charlotte will use the map

Finding Greenways, Parks, and Bike Lanes is the function of the map

Locating properties, Greenways, Parks, and Bike Lanes is most important

Residents will be able to access the map through a web application

Map should be simple, clear, and easy to use for non-GIS experts
Demo 1
Pre-Publishing Considerations

Selecting Layers
Generalizing Features
Choosing Tile or Feature Service
Selecting which Layers to use

Is each layer necessary for the purpose of the map?

Is the purpose of the map clear given the symbology and the data?
Generalizing Layers with dense Vertices

Are the feature geometries too detailed for the scale of the map?

Can the geometries be simplified without losing necessary information?
Choosing which Layers need Feature Access

Which layers require access to the attribute information?
Which layers are used for background reference only?
Web Map Configuration

Visible Scale Ranges, Filters
Views
Optimize Layer Drawing
Tile Service Pop-ups
Setting Visible Scale Ranges and Filters

Are some layers necessary only at specific scale ranges?
Should dense data be filter to only show the necessary features?
Using Views

Can a View be used to avoid adding editable layers to a public map?

Are all the fields and features in the service necessary for this map?
Enabling Optimize Layer Drawing

Can layers with detailed geometries be optimized at small scales? Is storage size a concern?

Optimize Layer Drawing

This setting increases the drawing speed of line and polygon layers with detailed geometry (e.g., many vertices) but also uses additional storage space to do so.

Select the layers to optimize:

- Greenways_Generalized
- Interstate_Meck_Generalized
- City_Maintained_Streets_Generalized
- BikeLanes_Generalized
- Parcel_NoData_Generalized
- MecklenburgCounty_Boundary_Generalized
- Golf_Courses_Generalized
- Buildings_Generalized
- Charlotte_Boundary_Generalized

Note: Layer optimization takes a few minutes to complete. Editing will be temporarily disabled on layers undergoing optimization.
Tiled Map Service Pop-ups

Is the data best presented as a tiled map service?
Do tiled layers require pop-ups?
Other Considerations

Setting the Max Record Count Factor
Debugging with Fiddler and Dev Tools
Considering Premium Feature Data Store
Max Record Count Factor

How to increase or decrease the number of features that display on the map?
Debugging with Fiddler and Dev Tools
Considering Premium Feature Data Store

Does the layer require heavy querying and editing workloads?

Will sharing data copies with ArcGIS Enterprise portals be required?

Three levels of performance:
M1 (improved performance),
M2 (higher performance), and
M3 (highest performance).
MyMapService1 (FeatureServer)

Service Description: asdf
Service ItemId: a72f798da3542a3b50f7d0efacb00
Has Versioned Data: false
Max Record Count: 1000
Supported query Formats: JSON
Supports applyEdits with GlobalIds: True

Layers:
- BikeLanes (0)
- City_Maintained_Streets (1)
- Greenways (2)
- Interstate_Mock (3)
- Buildings (4)
- Charlotte_Boundary (5)
- Golf_Courses (6)
- MecklenburgCounty_Boundary (7)
- Parcel_NoData (8)
Summa
ry

• Remove unnecessary layers that clutter the map
• Generalize the geometry of layers that don’t need detail
• Published tiled map services of background reference data
• Use Filters and visible scale ranges when appropriate
• Create views of layers to avoid editable layers
• Enable optimized drawing for layers with complex geometries
• Enable pop-ups on tiled layers
• Set the max record count factor from REST
• Use Fiddler or Dev Tools to debug problematic layers
• Consider using Premium Feature Data Store
Generalize

About hosted layers

Publish hosted feature layers

Publish hosted tile layers

Apply filters

Set visible range

Create hosted feature layer views

Optimize drawing of complex lines and polygons

Enable pop-ups on hosted tile layers without feature data

Feature layers can generalize geometries on the fly

How To: Update the maximum record count for feature services in ArcGIS Online
http://support.esri.com/technical-article/000012383

Error: Layer did not draw completely because there are too many features to display
http://support.esri.com/Technical-Article/000014750

All about ArcGIS Online layers
http://blogs.esri.com/esri/arcgis/2012/09/24/arcgis-online-layers/

Workflows for building and hosting cached map tiles in ArcGIS

Dicing Godzillas (features with too many vertices)

FAQ: How do I optimize a web map for high demand?
http://support.esri.com/en/knowledgebase/techarticles/detail/42840

Download Fiddler
http://www.telerik.com/download/fiddler

When should my organization consider using a premium feature data store?
Please Take Our Survey on the **Esri Events App**!

1. **Download the Esri Events app and find your event**
2. **Select the session you attended**
3. **Scroll down to find the survey**
4. **Complete Answers and Select “Submit”**
Questions

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