HEXAGON

Q&A Hexagon Data Layer Reorganization

19 August 2021

Introduction

To enhance the user experience, we have created new, consolidated WMTS cache layers that always render the most current data on top. Additionally, WMS layers are reorganized and renamed to provide a better overview of our product offering. These changes are based on user feedback and will improve the overall performance of the streaming service.

Q&A

What are the changes in general?

- Regional layers are merged into one unified layer across the entire world with GeoFence limiting a user to their subscription area of interest (AoI)
- One cached layer ("HxGN_Imagery") with the following characteristics will be supported in WMTS:
  - Latest data on top
  - Mosaic of multiple GSDs into one layer
  - Only one coordinate system supported: Google Web Mercator (EPSG:3857)
- A detailed layer list is available for advanced users upon request
- Detailed layers will use the following naming convention going forward:
  - "Brand_Product_Resolution_Urban/Wide_LeafOff"
  - Examples:
    - HxGN_RGB_30cm
    - HxGN_CIR_15cm
    - HxGN_RGB_15cm_Urban

Which layers will be retired?

After the transition, the following legacy layers will be retired and will not be visible in any capabilities document or table of contents returned from the server:

- NA_WAC/NA_WAC_CIR
- NA_UAC/NA_UAC_CIR
- EU_WAC/EU_WAC_CIR
- NA_Aerial_(*)
- EU_Aerial_(*)
- US_Aerial_(*)

What are the changes for the OGC WMTS protocol?

For WMTS users, all previous cached layers are retired and replaced with the "HxGN_Imagery" layer, resulting in the following benefits:

- The 15 cm and 30 cm layers will be merged into one unified layer.
- The North American (NA) and European (EU) cached layers will be merged into one unified layer. All AoI's are in one layer with the GeoFence automatically restricting users to their area of subscription.
- The preferred format will move to "image/unknown" format or *.xxx extension.
- The WGS84 (EPSG:4326) coordinate system will no longer be supported in the cached layer.

For most users, the WMTS is the preferred access method as a high-performing protocol that reduces the WMS protocol's focus on flexibility, allowing the server-side to optimize the streaming. WMTS should always be selected if the user's GIS application supports it and the use case for the data fits the following restrictions:

- Projection: limited projections; only Web Mercator (EPSG:3857) is supported

- Tile size: request is fixed at 256x26 pixels to allow the web or desktop client to make multiple requests in parallel to improve performance.
- Rendering priority: the current caches are set up to have the latest imagery on top, even if it is lower resolution. In the majority of the library, the latest data also has the highest resolution.
- Format: reduced number of supported image formats compared to WMS that are optimized for file size to reduce the time required to transfer data across the network.
    1. Image/unknown = “*.xxx” extension, which is a mixed cache delivering PNG on the edges where transparency is needed for black pixels and JPEG for the rest.
    2. Image/jpeg = uses high-quality compression and should be used if XXX is not supported by the GIS application.
    3. Image/png = supports transparency for black pixels but performs slowly because the file size for each tile will be large.

For the best performance, please use the cached layers with the following default parameters:

- Protocol: WMTS
- Layer: “HxGN_Imagery"
- Format: *.xxx ("image/unknown", can also use *.jpg for simplicity if the client-side mapping SDK does support mixed image formats)
- Projection: EPSG:3857 (Google Web Mercator)

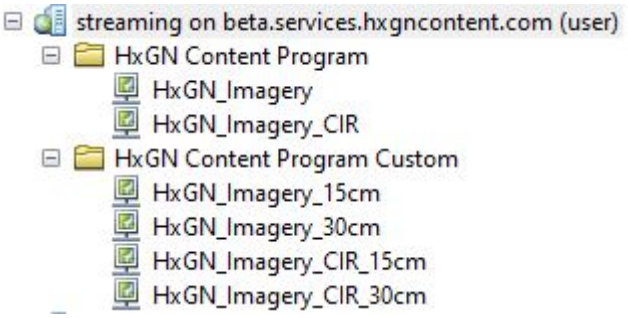
What are the changes for the OGC WMS protocol?

The major change for WMS users will be the layer names. Customers will have to update all applications or maps that reference retired layers like “NA_WAC” or “NA_Aerial_*” to “HxGN_Imagery” and “HxGN_Imagery_CIR”. The supported formats and coordinate systems will remain the same.

- Users can change the rendering order by adding a STYLE parameter in the GetMap request for the layer.
- Advanced users can use the “HxGN_CUSTOM=true” custom parameter in GetCapabilities to get a hierarchy of layers with the individual GSD:
    - HxGN_RGB_30cm
    - HxGN_CIR_30cm
    - HxGN_RGB_15cm_Urban
    - HxGN_CIR_15cm_Urban
    - HxGN_RGB_15cm
    - HxGN_CIR_15cm
    - HxGN_RGB_15cm_Urban_LeafOff
    - HxGN_CIR_15cm_Urban_LeafOff

What are the changes for the ArcGIS REST and SOAP protocols?

The ArcGIS REST and SOAP protocol users will see the standard layers “HxGN_Imagery” and “HxGN_Imagery_CIR” in the “HxGN Content Program” ArcGIS server folder and the hierarchy of layers arranged by GSD in the “HxGN Content Program Custom” folder.



How do these changes impact supported desktop client users?

All supported GIS and CAD applications (ArcGIS, QGIS, AccuMap, ERDAS Imagine, etc.) can continue to connect using OGC WMS/WMTS and ArcGIS REST/SOAP protocols. The only difference is customers will see a shortened table of contents.

What do I need to do as a web map developer or user?

For the majority of web applications, the change will be a simple modification in the layer names. For the best performance, all web applications are encouraged to move to the OGC WMTS protocol. Please reference the WMTS section in this Q&A for details.

How do these changes impact the web store user?

There are no changes affecting customers that download imagery from the Web Store.