xTerrain is a high-performance terrain and raster analysis system that enables users to create highly accurate terrain products in a fraction of the usual time. This is accomplished by making data available via web services and leveraging the best-available high-performance computing resources to quickly generate analytic results. xTerrain allows users to focus more of their time on analytic questions and less on acquiring data and configuring it to run on their local machine.

Features & Benefits

**Simpler**
- Eliminates the need for analysts to find, download and load data into a desktop GIS to run algorithms. Data and operations are ready at analysts’ fingertips
- Computes data once to serve many based on Open Geospatial Consortium (OGC) standards

**Faster**
- Uses the latest high-performance computing technology to accelerate, scale and enable terrain analytic workflows that impact missions
- Offers incredibly fast processing speed that enables large-scale batch analytics

**More efficient**
- Pre-stages data in the cloud in an analysis-ready format, eliminating the need to locate and prepare various data
- Interactive/iterative desktop-scale analytics and batch operations/workflows expand the range of intelligence questions that can be solved

**Easier integration**
- Works apps/workflows through open standards (i.e. OGC standards) and application programming interfaces (APIs)
- Gives analysts the ability to review outputs from various raster datasets and view in context with other data streams
Data Available in xTerrain

xTerrain includes several openly available high- and low-resolution terrain datasets, as well as custom data tailored to the deployed environment. Additional customer datasets can be added to xTerrain on request.

The system also includes several raster data derivative layers including slope, aspect and terrain based on mobility models described in academic papers. Users will be able to download these mobility models to local Desktop GIS software (e.g., ArcGIS Desktop and QGIS) and augment them with additional information (land-cover data, transportation networks, weather, etc.) to modify the mobility values and perform routing analysis.

To streamline this process, these analytics will be available directly in xTerrain in a future release. In addition to the pre-computed layers, xTerrain has interactive analytics that allow users to navigate to an area on the map and perform various terrain and raster analytics, such as Viewshed, Aspect, Slope, Raster Data Clip, Helicopter Landing Zones, Topographic Position Index, Least Cost Path, and advanced routing and mobility models.

For these types of analytics, xTerrain brings speed—allowing users to repeat the process quickly, while making corrections in the parameters to customize and refine the result.

Impacts to mission

- Allows users to spend more time on analysis and rapidly iterate on analytics.
- Simplifies technological logistics for analysis derived from topographical data.
- Decreases processing time allowing for easy comparison between analyses completed with different parameters.
- Gives analysts the ability to review outputs from various raster datasets and view in context with other data streams.

RAPID MOBILITY ANALYTICS

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