LocationTech Open Source Community Opens Geospatial Projects

LocationTech, an Eclipse Foundation Working Group and a community that builds software for geospatial technology, has announced the release of five open source projects that provide core technology used to build geospatial big data analytics solutions.

LocationTech is an open source community that provides technology for the US $500 billion worldwide geospatial industry. For instance, the projects can be used to efficiently process satellite images, analyse maps for the agriculture industry, visualise smart city sensor data, and in many other geospatial use cases. The community is a collaboration among key geospatial organisations, including Boundless, Red Hat, Radiant Solutions, IBM, and Oracle. The LocationTech community has grown to include nine open source projects, 18 member organisations, and over 100 developers.

“Geospatial big data analytics technology is becoming more and more important across all industries, such as agriculture, transportation, and government,” explains Mike Milinkovich, executive director of the Eclipse Foundation. “LocationTech is delivering on the promise of providing key technology for companies that enable large-scale analytics of geospatial data.”

The five new project releases are as follows:

- **GeoWave** is a software library that connects the scalability of distributed computing frameworks and key-value stores with modern geospatial software to store, retrieve, and analyze massive geospatial datasets. It takes multidimensional data, such as spatial or spatial-temporal, and indexes it into a key-value store such as Apache Accumulo or Apache HBase. These distributed storage technologies, in addition to complementary distributing processing frameworks such as Apache Hadoop and Apache Spark, have proven capabilities to unlock the potential of massive datasets across a variety of domains.
- **GeoGig** 2 is a tool for geospatial data versioning. It enables users to leverage versioning of their geospatial data and to enable replication and synchronisation workflows, in addition to supporting end-to-end data management workflows. The new release improves the collaborative version workflow by improving cloning and push/pull performance and provides an updated Web API to align with the latest version of GeoServer.
- **GeoTrellis** 2 is a geographic data processing Scala library designed to work with large geospatial raster datasets. The tool provides developers with a set of utilities to help create useful, high performing web services that load and manipulate raster data (data normally used to represent satellite or aerial images). The new release includes a number of optimisations and new features including distributed computation support for viewshed and Euclidean distance through Apache Spark.
- **GeoMesa** 3.5 is a distributed, spatio-temporal database built on a number of distributed cloud data storage systems, including Apache Accumulo, Apache HBase, Apache Cassandra, and Apache Kafka. The suite of tools brings spatial-temporal data, real-time IoT, and sensor workloads to the cloud. GeoMesa’s novel indexing schema enables efficient queries resulting in rapid access to large data stores for any client application.
- **Java Topology Suite** (JTS) 1.15 is a Java library for vector geometry providing spatial data types, spatial relationships and spatial operations. New technical features include K-Nearest Neighbour search for STR-Tree, improved handling of Quadtree queries, support for GeometryCollection, and a new JTSTestRunner command-line application.

“The latest release of GeoGig to LocationTech represents a huge leap forward. Not only does it support versioning workflows for traditional geospatial data, but it is now optimised for spatio-temporal analysis of big data and streaming datasets from IoT sensors” says Anthony Calamito, Chief Geospatial Officer and Vice President of Products.

Additional information about the five project releases and the other LocationTech projects is available at www.locationtech.org/