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A comparison of data storage technologies for remote sensing cyber-infrastructures

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With latest generation EO systems, remote sensing data is being generated in very large volumes across multiple formats, around the clock, such as LiDAR, SAR, and Hyperspectral (in global level and high resolution). Advances in data acquisition techniques in remote sensing have resulted in introduction of multitude of operating payload having low GSD, higher revisit frequency, capable of operating round the clock and under any weather conditions. The datasets have become rich in higher spatial and spectral resolution, complex in structures and metadata, and diverse in applications areas. For example, NASA EOSDIS, had 8292 unique data products, summing up to 9.1 Petabytes (PB) and growing at 6.4 Terabytes (TB) daily during the period from Oct 1, 2013 to Sep 30, 2014. These datasets were used by about 2 million users with an average end user distribution volume of 27.9 Terabyte each day. Such recent trends in data-driven analysis necessities the need for cyber like infrastructures capable of high-performance, scalable, or real-time computing that can efficiently handle big data workloads. In this poster, our focus will be on data storage, and technologies being developed and used in other areas that can be applied in remote sensing cyber-infrastructures.

Biography

Rajasekar Karthik is a Research Scientist in Oak Ridge National Laboratory. He joined the Geographic Information Science and Technology (GIST) group at ORNL in June 2011. His areas of expertise include proficiency with a vast array of programming languages, concepts and technologies especially web-based software design and development, database programming, full life-cycle software development process and search engine technologies.

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