

# TACKLE SPACE JUNK WITH HYPERSCALE ANALYTICS

When humankind first began exploring the vast emptiness of Earth's atmosphere, the challenge was in getting there. Today, we face a new challenge. From satellites to discarded equipment to fragments from collisions, the space between the earth and the moon has become a veritable junkyard of high-tech debris. Keeping operational assets away from these objects is paramount, as collisions can be costly in both time and money.

Tracking space junk is a problem of hyperscale proportions, involving trillions of data points and highly complex interdependencies. The Ociant Hyperscale Data Warehouse™ was built to solve problems like this. By bringing together high speed data ingestion and transformation, a hyperscale OLAP database engine, real-time analytics, industry-leading geospatial capabilities, and machine learning, Ociant provides a solution to the challenges space junk poses.

**A US-based company  
headquartered in Chicago**

**Backed by:**



**Proud to partner with:**



## Ociant solutions help aerospace and other organizations:

**Develop a comprehensive view.** Ociant can consolidate data from various sources, including ground-based observations, space surveillance networks, and historical records to provide a holistic view of the space debris environment.

**Make key data more accessible.** Space debris often comes in various formats — e.g. orbital data, spacecraft telemetry, and spatiotemporal data. Ociant can standardize and organize this data, making it more accessible for analysis and decision making.

**Monitor objects in near-real time.** Ociant can continuously update and store real-time data on the positions and trajectories of both space junk and space assets. This allows for accurate and up-to-date collision risk assessments and predictions.

**Improve tracking, risk assessment, and mitigation.** Ociant supports various data analytics techniques, including orbital analysis, conjunction analysis, and statistical analysis to improve the way organizations respond to space junk.

**Develop long-term strategies.** Ociant can help organizations assess the long-term sustainability of space activities by storing and analyzing data related to space debris proliferation, mitigation efforts, and the efficacy of debris removal missions.

**Collaborate widely.** Space debris data often needs to be shared among multiple organizations and countries. Ociant facilitates data sharing and collaboration by providing authorized stakeholders with secure and controlled access

## OPTIMIZE SPACE-BASED MISSIONS WITH OCIENT

- ✓ Protect satellites, military assets, and other space-based objects from damage
- ✓ Launch new equipment into orbit without threat of collision
- ✓ Anticipate and react to space-based threats
- ✓ Deploy and operate space junk mitigation equipment
- ✓ Identify and prepare for potentially harmful space weather conditions
- ✓ Predict growth of space debris hotspots

## OCIENT'S END-TO-END PLATFORM IS DESIGNED FOR DATA ANALYTICS AT SCALE

**Leverage in-database machine learning.** OcientML™ features a library of ML models that can be used as-is or customized to deliver next-level insights on hyperscale datasets without extraneous data movement.

**Run complex queries faster.** Thanks to native support for geospatial, inverted, hash, and n-gram indexes, Ocient delivers query results on massive datasets in seconds.

**Integrate with existing tools easily.** Built-in JDBC, ODBC, and Python connectors enable Ocient users to execute powerful queries and visualizations with the tool(s) of their choice.

**Analyze geospatial data precisely.** Ocient can store geospatial data at full resolution and make it available in seconds, providing an unmatched level of granularity for spatiotemporal and geospatial analytics.

**Supercharge data ingestion** with native support for traditional ETL workflows, ELT pipelines, and SQL-based transformations during streaming ingest.

**Minimize time-to-queryability** and maximize parallelization of in-flight tasks with Ocient's Compute Adjacent Storage Architecture™ (CASA).

## DEPLOYMENT OPTIONS THAT SUIT YOUR MISSION REQUIREMENTS



**On Premises**  
Deployed in your  
datacenter



**Public Cloud**  
Amazon Web Services or  
Google Cloud Platform



**OcientCloud®**  
Hosted in the Ocient  
datacenter

**Ready to Learn More?**

Contact [sales@ocient.com](mailto:sales@ocient.com) for a demo of our hyperscale data analytics solutions.

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