

ESRI BUILDS REAL-TIME GIS SERVICE USING MESOSPHERE ENTERPRISE DC/OS

INDUSTRY

Technology

BUSINESS OUTCOME



Data Agility

THE CHALLENGE

Esri needed a new scalable technology platform to help its customers deploy IoT and data-driven applications.

SOLUTION & BENEFITS

Esri chose Mesosphere because it is built on Apache Mesos, which has an existing ecosystem and is proven by very large companies such as Uber and Twitter. Using Mesosphere Enterprise DC/OS, Esri developed a new managed service that allows customers to build data-driven applications.



Esri is a world leader in geographic information system (GIS) technology. The company's enterprise mapping and geospatial analytics software integrates maps with rich data to provide location-based insights that enable better decision-making. Esri's technology is used by more than 350,000 businesses, government agencies and NGOs that collectively create 150 million new maps every day.

The Challenge

Esri's clients want to deploy new IoT and data-driven applications that are pushing the boundaries of Esri's current on-premises Real-Time GIS software solution. Performance and scalability demands of these new applications required Esri to adopt a new technology platform to help customers take their applications to the next level.

The Solution

Esri has developed a new managed service—built on Mesosphere Enterprise DC/OS—that lets users achieve real-time, predictive mapping. It combines Esri's ArcGIS platform with real-time and big data analytic capabilities to process and analyze up to millions of events per second from sources such as:

- Sensors on moving objects such as vehicles, vessels and people
- Stationary sensors on electric, water and gas utility networks
- Feeds from social media, weather and environmental sensors

“With the Mesosphere Enterprise DC/OS platform, we can serve a new set of customers with entirely new capabilities in terms of the performance and intelligence of their map and analytic applications. And with our cloud-based platform, we can get these solutions up and running in minutes. This gives Esri and our clients a level of innovation and business agility we’ve never had before.”

Adam Mollenkopf,

Real-Time & Big Data GIS Capability Lead,



Why Mesosphere Enterprise DC/OS

Esri chose Mesosphere Enterprise DC/OS as the foundation of its new managed service because the team knew the Apache-Mesos-based technology could meet the changing needs of their clients. “We’ve known Mesos and the ecosystem for some time and have a lot of confidence in DC/OS because of that. It’s proven in large organizations like Uber and Twitter. We have confidence it will scale to any need that we would have,” says Adam Mollenkopf, Esri’s Real-Time & Big Data GIS Capability Lead. “Instead of having just a single machine, we have a full data center at our disposal where we can deploy large applications to support our customers’ high-velocity and high-volume data demands.”

Enterprise DC/OS services

Apache Kafka, Apache Spark (and Spark Streaming), Elasticsearch, Marathon, Chronos, Lightbend Reactive Platform

Operational improvements:

- **Increased performance and scalability:** Esri’s previous on-premises software was able to process thousands of events per second. On the Mesosphere Enterprise DC/OS platform, Esri’s new managed service can process millions of events per second, easily meeting the expanding needs of its clients.
- **More resilient systems:** Enterprise DC/OS provides enhanced monitoring and resilience capabilities for Esri’s real-time and big data GIS systems. “Mesosphere has a great model for supporting our deployments so we know that a production environment is always going to be covered,” Mollenkopf says.
- **Fewer staff resources needed:** The ease of management of the new platform means fewer people are needed to monitor and manage the DC/OS clusters that Esri deploys for its clients.

Business improvements:

- **New class of customer:** Esri is now getting requests from a new class of customer with more sophisticated and large-scale applications. Before DC/OS, Esri would shy away from those opportunities because it was outside the scale of what its technology could handle.
- **Faster time to market:** The time to get a customer’s environment up and running has been drastically reduced. Depending on the deployment, it could take anywhere from hours to days to get the environment established and sometimes required sending staff to the customer site if the customer requested. With the new cloud-based platform, Esri can deploy a new cluster in minutes.
- **A foundation for innovation:** The Mesosphere Enterprise DC/OS platform provides an innovative delivery model and is also a foundation to build higher-level business applications. Having that investment in place enables Esri to move from real-time GIS to predictive GIS, where they can make predictions and recommendations rather than only providing alerts about what has already happened.



Mesosphere makes modern enterprise apps easy to build, run, and scale with DC/OS - a datacenter-scale distributed operating system that elastically runs the full modern app: containerized microservices and stateful data services. With DC/OS, distributed data services like HDFS, Spark, Kafka, and Cassandra resiliently run on shared resources in the datacenter or cloud, and install in seconds. DC/OS is used by leading Fortune 1000 companies like Verizon, Autodesk, Time Warner, ADP and many others for Docker container orchestration at scale, elastic data infrastructure, and elastic CI/CD pipelines. Mesosphere is the principle founding member of the DC/OS open source project and a 2016 Gartner Cool Vendor in Cloud Infrastructure.

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