AWS for Geospatial

Dean McCormick

Account Manager
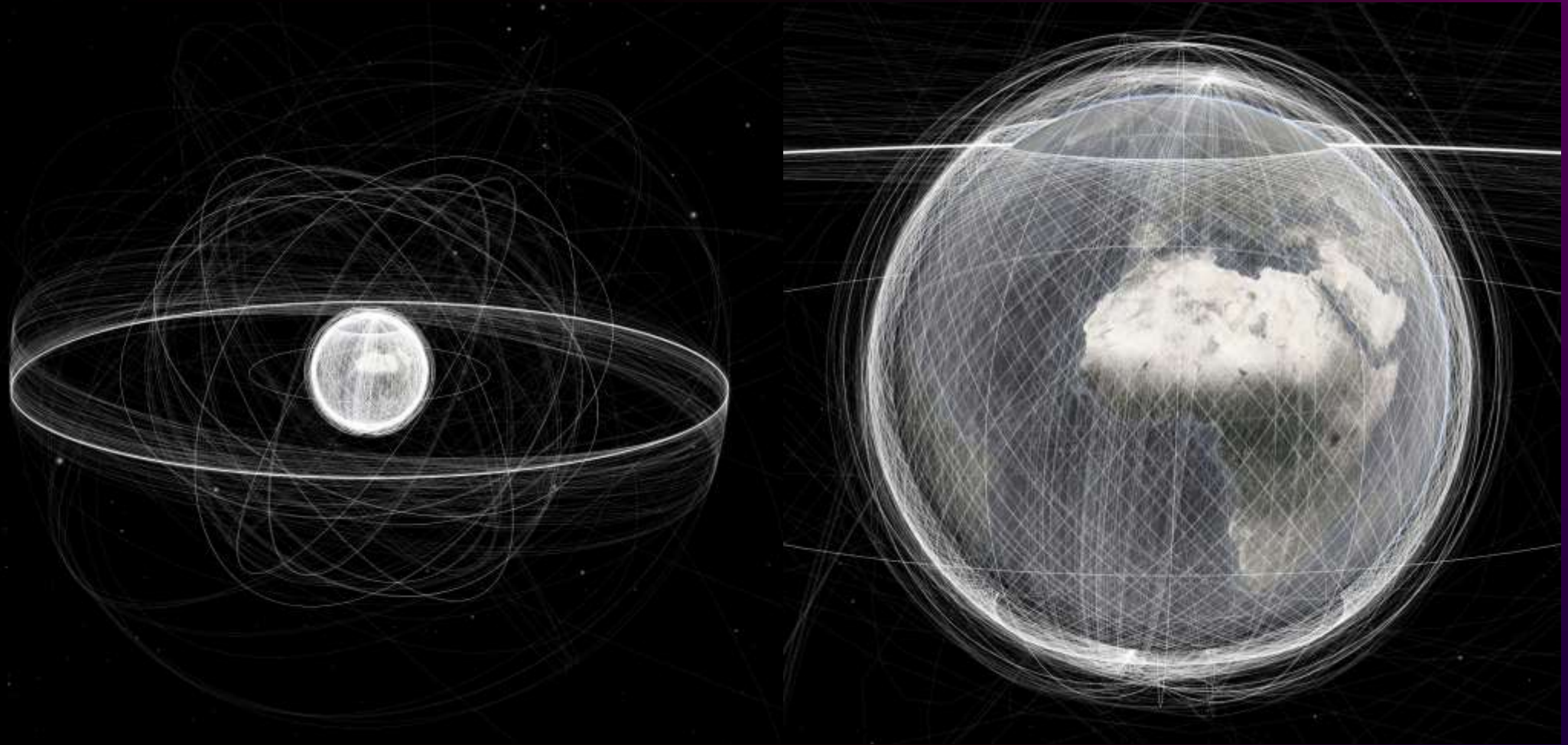AWS Aerospace & Satellite

Key takeaways

- Geospatial data is *big* and getting *bigger*

- Cloud providers like AWS are increasingly used to handle this big data

- Aggregating big geospatial data on the cloud leads to new ways to query, analyze, and extract value from this big data
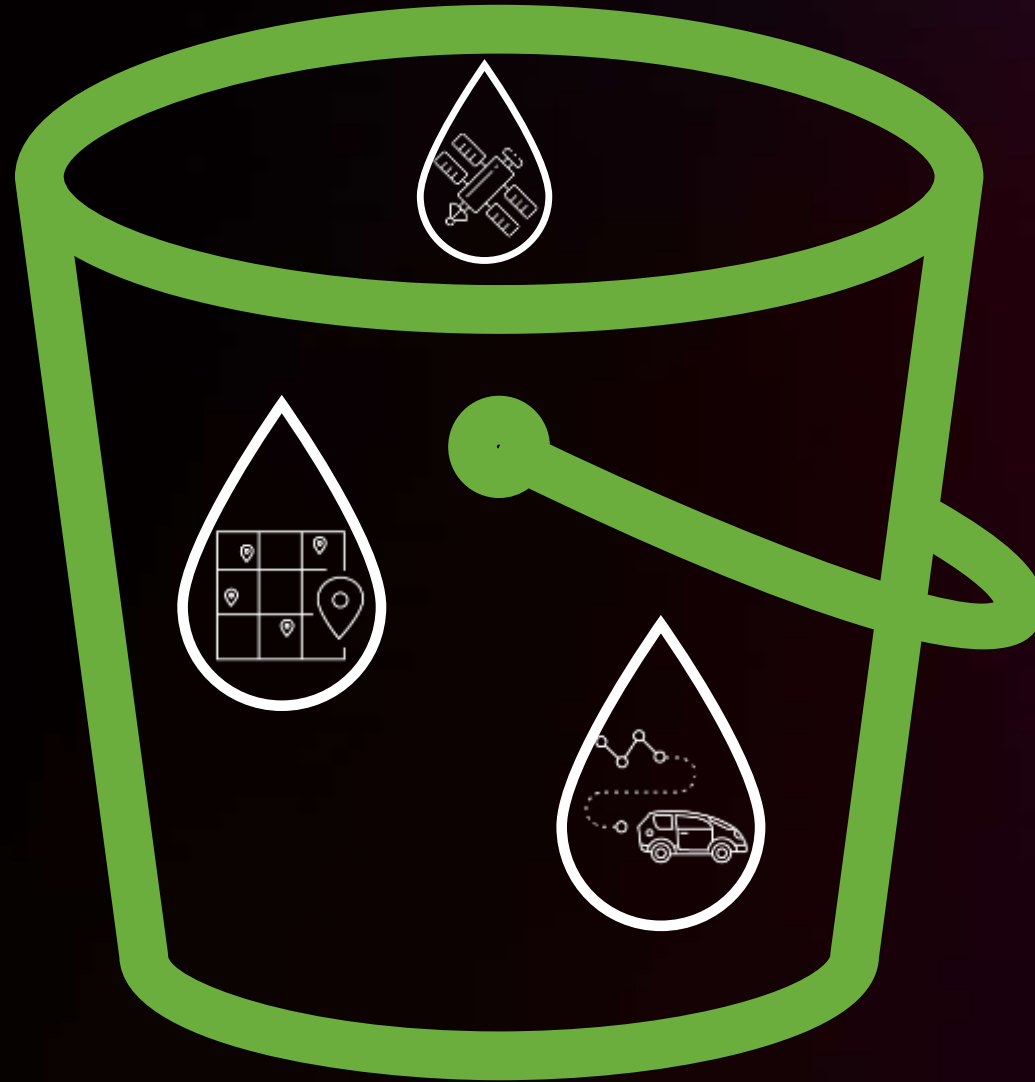
Satellite proliferation

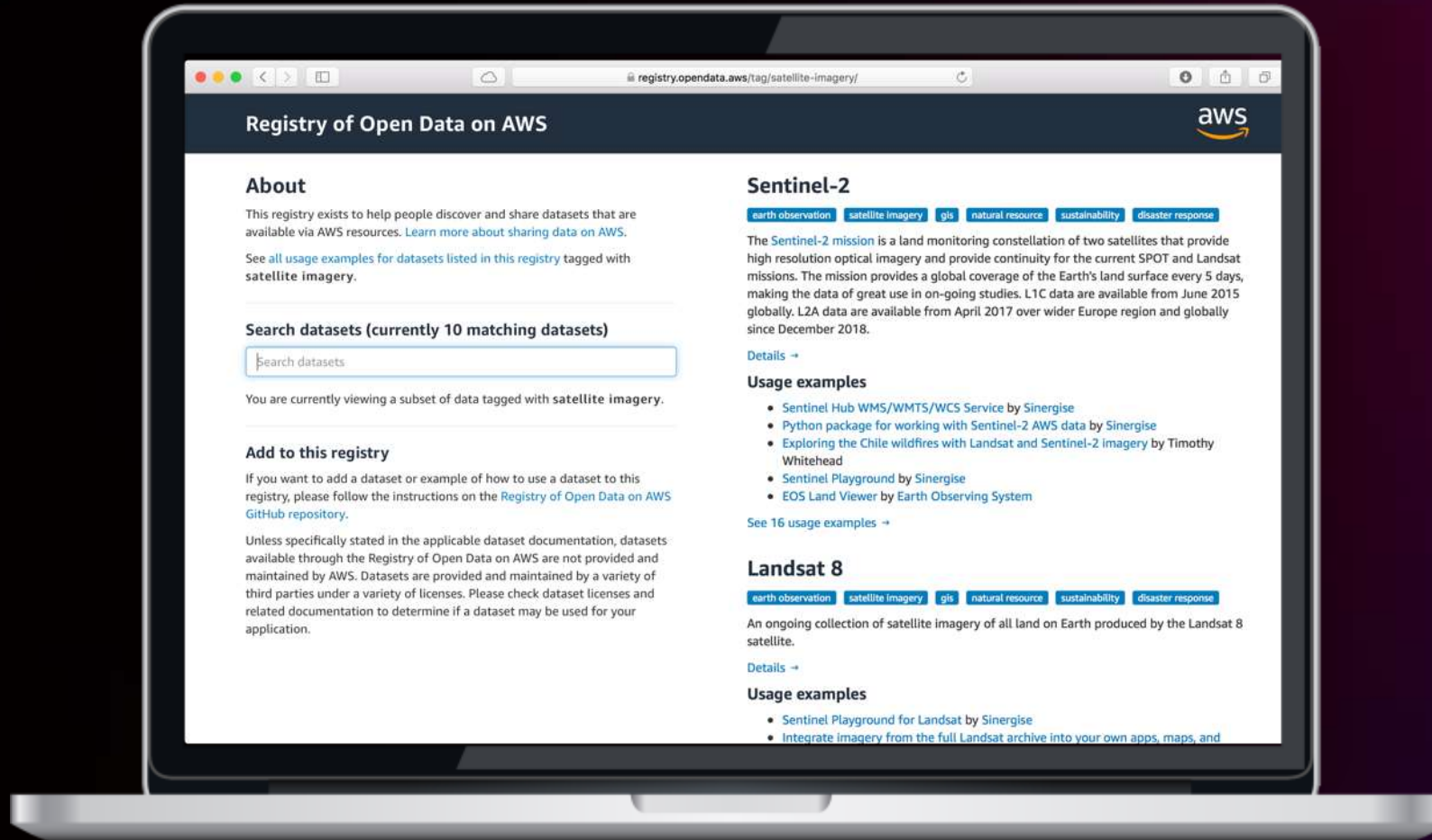Source: https://geoxc-apps.bd.esri.com/space/satellite-explorer/

AWS Ground Station

AWS Ground Station Antenna Locations

- Oregon
- Ohio
- Hawaii
- Ireland
- Stockholm
- Bahrain
- Seoul
- Singapore
- Cape Town
- Sydney
- Punta Arenas

Geospatial data is big; AWS is way bigger

Open data on AWS

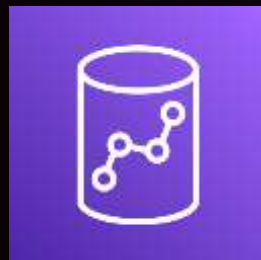https://registry.opendata.aws/

Storing & querying geospatial data

Amazon Athena

Amazon S3

Amazon Redshift

Amazon RDS

Amazon OpenSearch Service

Our geospatial data is on the cloud.

Now what?

Leave the data in place; bring compute to the data

Client Workstation

Client Workstation

Client Workstation

- Data egress costs money
- Takes too long to load data

lots of data out

AWS Cloud

GIS Server
Amazon EC2

Relational DB
Amazon RDS

Object Storage
Amazon S3

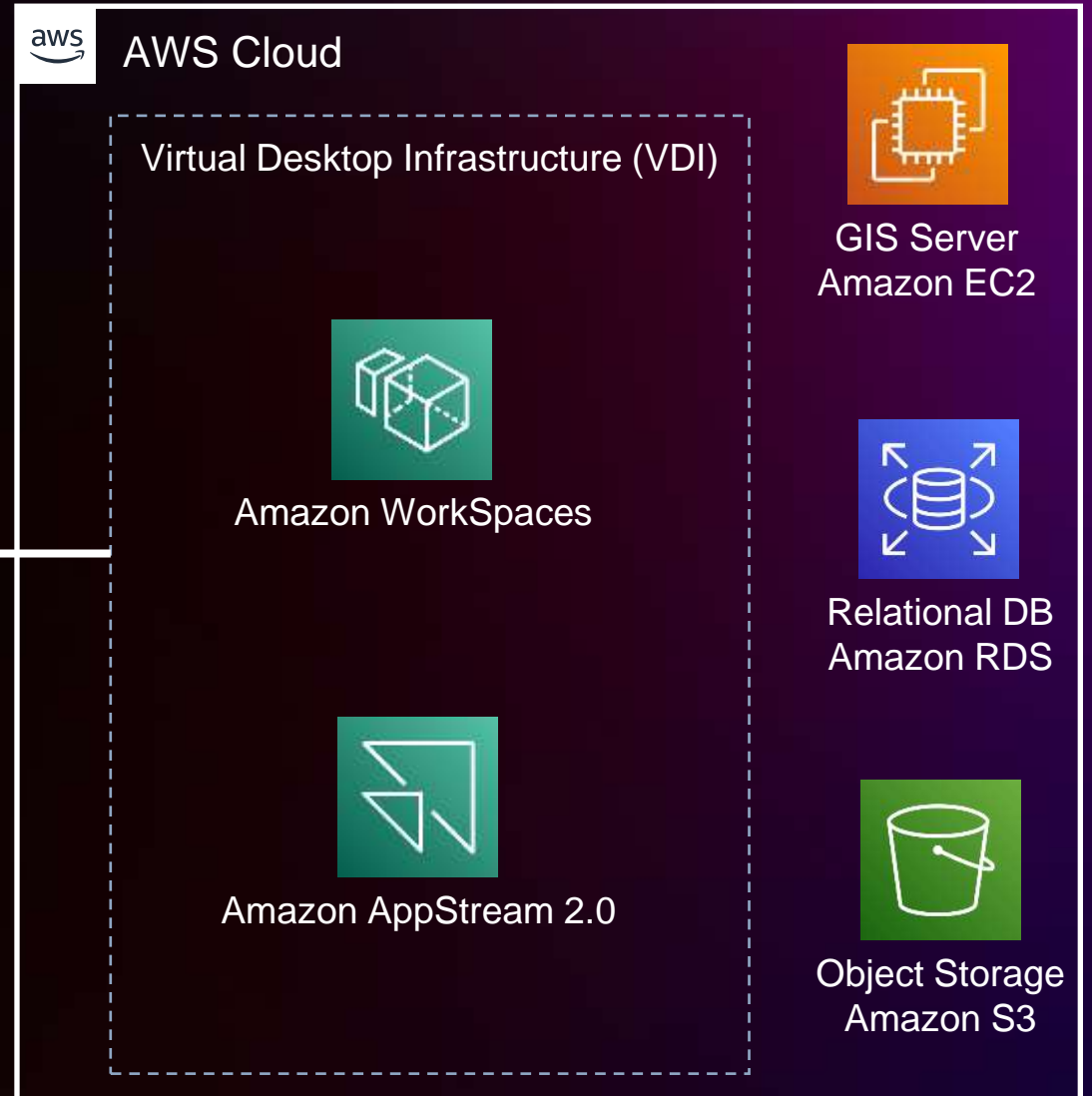# VDI for desktop GIS applications
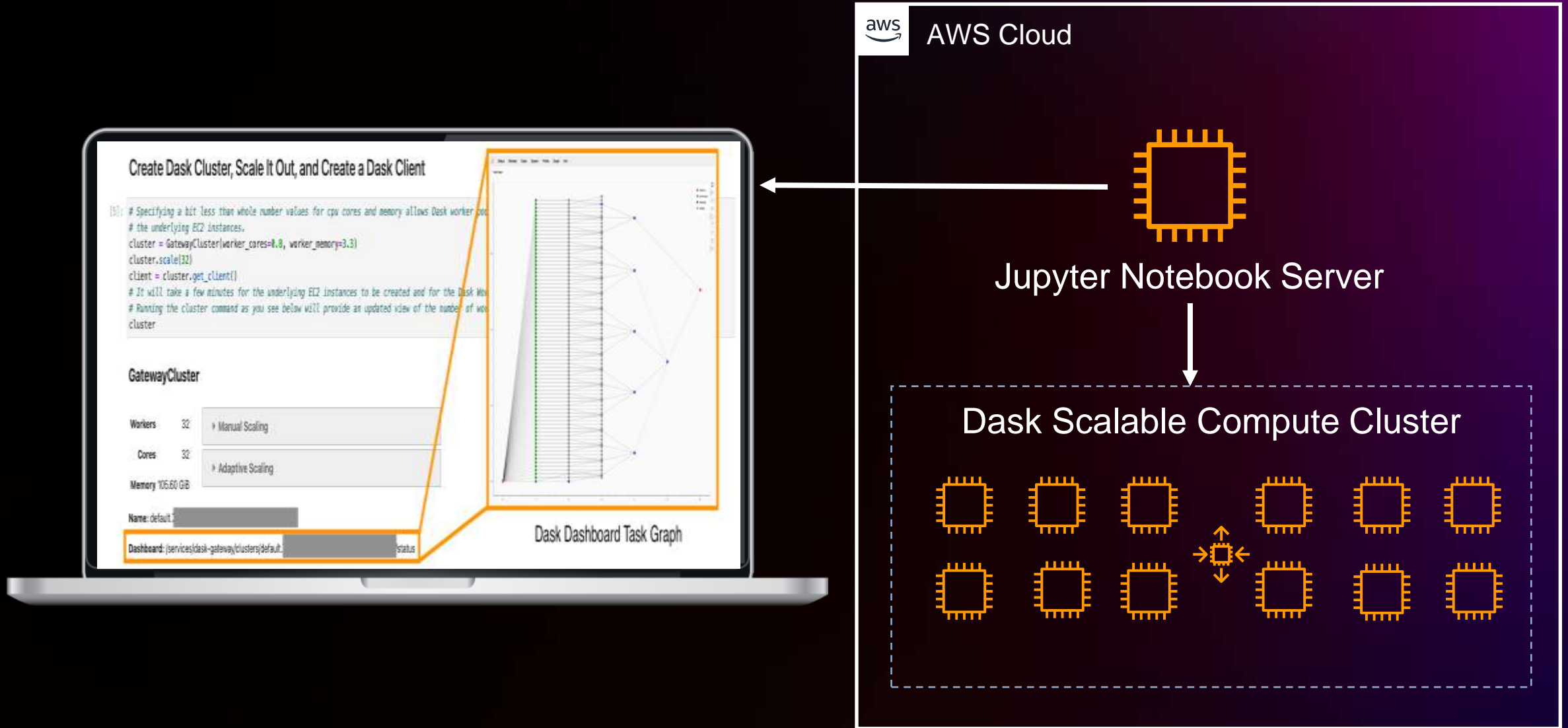

Client Workstation
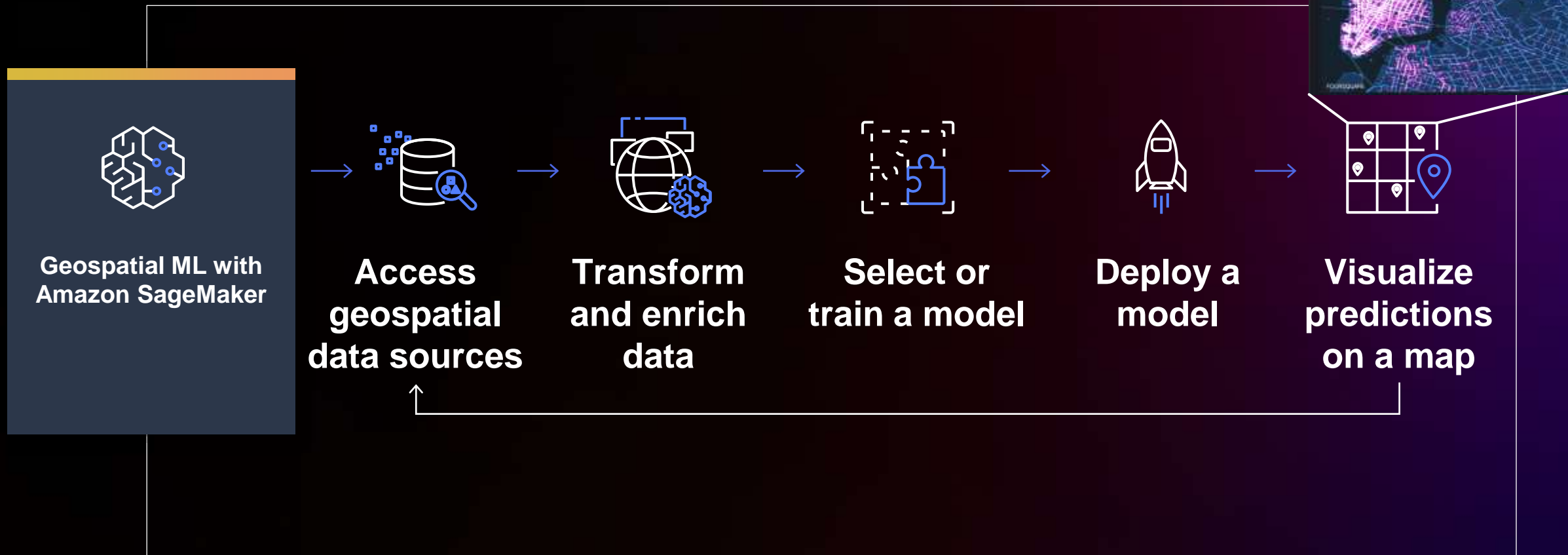
Client Workstation

Client Workstation

minimum data out

aws AWS Cloud

Virtual Desktop Infrastructure (VDI)

Amazon WorkSpaces

Amazon AppStream 2.0

GIS Server
Amazon EC2

Relational DB
Amazon RDS

Object Storage
Amazon S3

Jupyter notebooks, another way to bring compute to data

AWS Cloud

Jupyter Notebook Server

Dask Scalable Compute Cluster

Geospatial ML with Amazon SageMaker

Geospatial ML with Amazon SageMaker → Access geospatial data sources → Transform and enrich data → Select or train a model → Deploy a model → Visualize predictions on a map
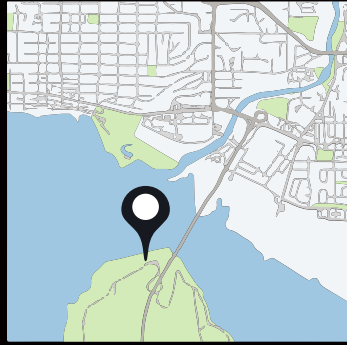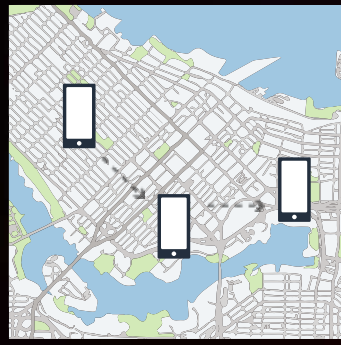
Amazon Location Service

Maps

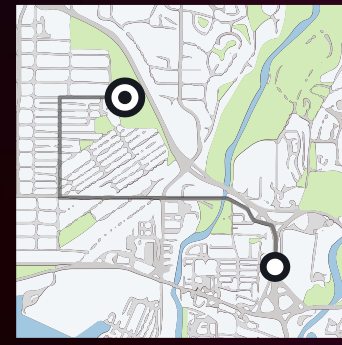Visualize location information on a map

Places

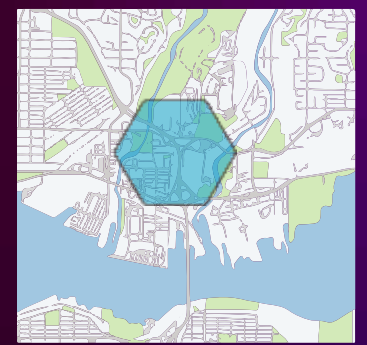Offer point-of-interest search functionality

Trackers

Retrieve current and historical location of devices

Routes

Get travel time, distance and directions between departure point and one or more destinations

Geofences

Detect and act when a tracked device enters or exits a boundary

Takeaways

- Geospatial data is *big* and getting *bigger* *(but AWS can handle it)*

- AWS can help extract value from all of this data with managed services, HPC, ML, analytics, open source, and partner solutions.

Thank you!