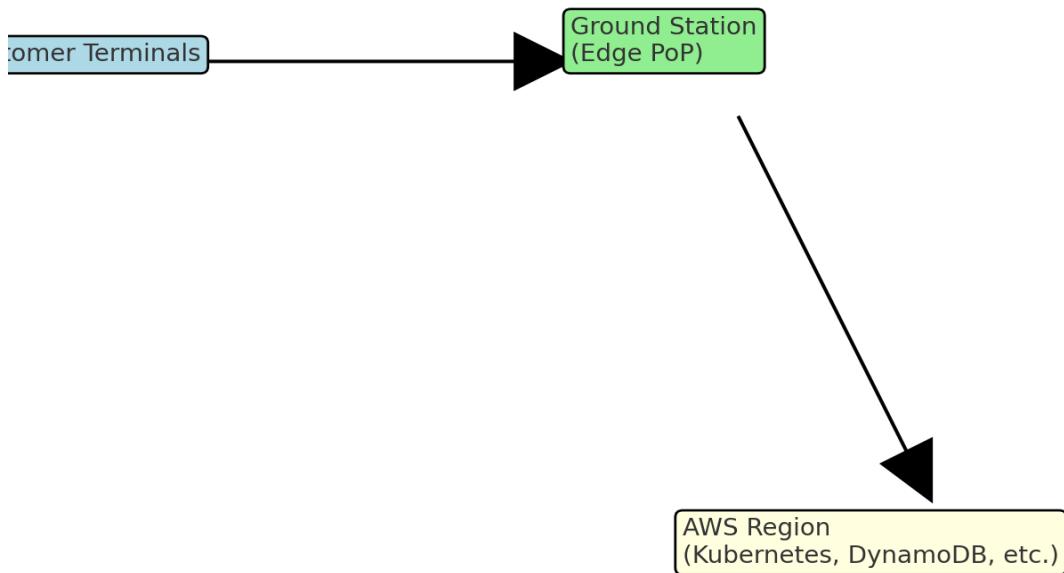


Project Kuiper Interview Q&A; (with Diagrams)

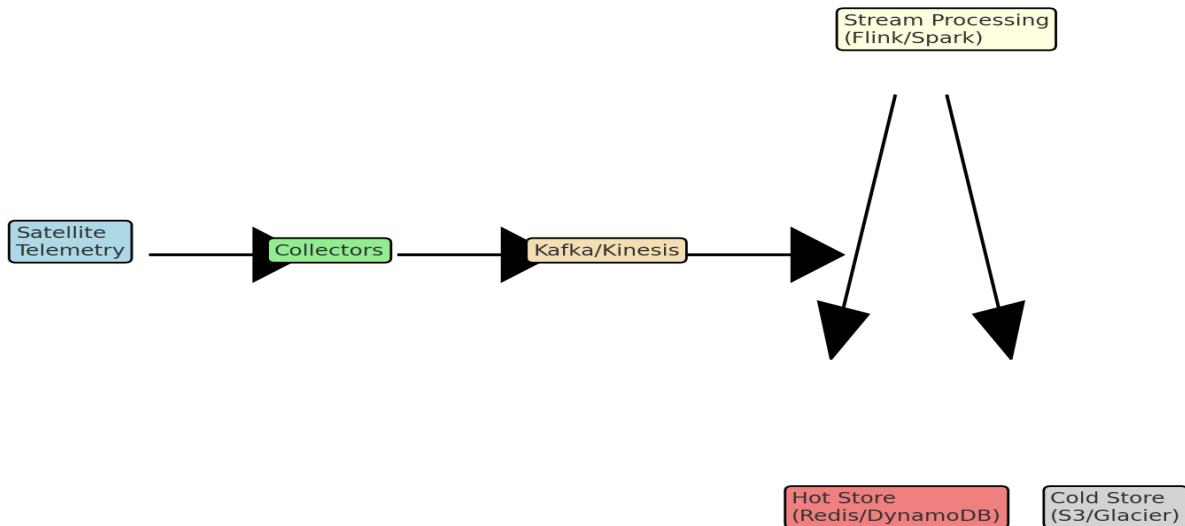
System Design: Ground Station Network

Ground stations act as regional edge PoPs. Customer terminals connect via Ka/Ku band, data flows into ground stations, then routed through AWS backbone to cloud services. AWS Global Accelerator + Route 53 manage routing, Kubernetes clusters handle session management, with active-active redundancy.



System Design: Telemetry Pipeline

Satellites generate telemetry → Collectors → Kafka/Kinesis → Stream Processing (Flink/Spark) → Hot Store (Redis/DynamoDB) + Cold Store (S3/Glacier).



Domain Knowledge: LEO vs MEO vs GEO

Trade-offs:

- LEO (~500-600 km): Low latency (<40 ms), requires many satellites.
- MEO (~8,000 km): Moderate latency (~100 ms).
- GEO (~36,000 km): High latency (~600 ms), only 3 satellites cover globe.

