

Facilities, Equipment, and Other Resources

Geocat Enterprise GIS System – Kansas State University

Kansas State University (K-State) maintains a state-of-the-art enterprise Geographic Information System (GIS) platform, known as Geocat, that supports cutting-edge geospatial research, education, and outreach. Geocat is a cloud-native deployment of Esri's ArcGIS Enterprise suite, fully hosted and managed through Amazon Web Services (AWS) and supported by ROK Technologies. It is designed to expand in capacity and functionality, including integration with real-time data streams and high-performance computing clusters.

Technical Infrastructure

Geocat is architected to deliver scalable, high-performance, and secure GIS capabilities enabling geographically distributed research and remote instruction through cloud-based infrastructure that supports real-time collaboration, advanced spatial analytics, and secure access from any location.

- AWS-hosted ArcGIS Enterprise Stack, including ArcGIS Server, Portal, Image Server, Relational Datastore, and SQL Server.
- Virtualized desktop access via AWS Appstream or GPU-enabled AWS Workspaces (4 vCPUs, 16 GB RAM) optimized for spatial analysis, remote sensing, and 3D modeling in ArcGIS Pro.
- Cloud Storage and Backup:
 - High-IOPS SSD server storage (1.8 TB), Amazon S3 general-purpose object storage (2 TB), and FSx file server for shared high-speed access (1 TB)
 - Robust backup protocol including daily snapshots, monthly full backups, and disaster recovery support for virtual machines and enterprise geodatabases.

Managed Services and Reliability

ROK Technologies, an Esri Platinum Partner and experienced GIS managed service provider, provides comprehensive system management that allows researcher and educators to focus on analysis and innovation rather than infrastructure maintenance.

- Continuous monitoring, performance tuning, and system optimization with 99.5% guaranteed uptime with fully managed cloud infrastructure.
- 24/7 U.S.-based technical support.
- Software updates, security patches, and Esri software upgrades.
- Backup and retention policies ensuring data integrity (e.g., 4x daily geodatabase snapshots, monthly full backups retained for 12 months).

Strategic Support and Interdisciplinary Access

Geocat is supported by both AWS and the Kansas Water Institute, reflecting its strategic importance to K-State's land-grant mission. The system empowers faculty, students, and outreach professionals across multiple disciplines by providing centralized access to advanced spatial tools.