ArcGIS Roles

Esri’s mission is to transform organizations with maps and the geographic approach. We have been on this mission for 40 years, helping people unlock their location information and use it to identify patterns, make better decisions, and improve outcomes.

The ArcGIS platform makes it easy to geo-enable your organization’s data with intuitive mapping and analytical tools. You will quickly discover new patterns and answers to business challenges and share your insights across the organization for greater collaboration.

Based on many years' experience implementing the ArcGIS platform, Esri has compiled a list of typical staff roles, which fall into these four categories:

- **Organization Leadership/Management**
  - Set the vision and strategic business goals for the organization
- **Geo-enabled**
  - Access and leverage the power of location within existing IT applications
- **Geo-centric**
  - Directly use the ArcGIS platform to create and share information products
- **GIS Administration/Technical**
  - Responsible for application design and administration of the ArcGIS platform

Detailed descriptions for each role are provided below.

**Organization Leadership/Management**

**Executive Team (C-level executives)**

Sets the vision and strategic business goals for the organization; controls IT purchases and holds budget approval for training and professional development.

**GIS Manager**

Creates a clear vision for enterprise GIS deployment to support organizational goals. This individual has broad knowledge of GIS applications, capabilities, and system requirements. He or she may also be responsible for planning the overall structure of GIS systems within the organization. In smaller organizations, this role may also entail:

- Day-to-day management of GIS projects, staff, and budget
- Development of the GIS database and applications
- Supervision of production staff

**Geo-enabled**

**ArcGIS Online User (GIS Viewer)**

Content consumers who interact with maps and view content shared to them in groups.

**ArcGIS Online Publisher (GIS User)**

Map-centric staff who author data and information products, then publish them as services, packages, and web maps and applications that will be available to ArcGIS Online users. Publishers can share content with the public and make groups visible inside and outside the organization (depending on the security settings of the organization).
Geo-centric
GIS Analyst
A GIS analyst has specific knowledge of the computer operating system, GIS software and its applications, GIS concepts, and database and application design principles. An analyst requires a basic understanding of the data, functions, and tasks that the GIS applications will support. A GIS analyst’s responsibilities may include:

- Conducting use-case analysis of business functions to establish GIS application requirements and geospatial data model requirements
- Identifying and defining appropriate applications of the system and associated GIS products
- Planning and designing the analytic procedures and methodologies for performing the applications
- Preparing initial work and cost estimates for GIS development activities
- Working with the GIS manager to develop the annual work program
- Conducting in-house training and tracking progress on system implementation and application projects
- Planning and communicating specific work tasks for database creation and management, application development, and ongoing maintenance

Map Designer
A map designer possesses a strong knowledge of map design principles, graphic composition, and map production techniques. A working knowledge of land surveying techniques and geodetic control principles is also needed. A map designer commonly provides support at two key phases of GIS operation: data entry and map display. Specific tasks may include:

- Compiling and integrating map data for automation from diverse sources such as existing maps, aerial photography, and satellite imagery
- Solving problems related to the registration of different map layers
- Designing high-quality map and graphic products for output by the GIS system

Data Editor
A data editor has specific knowledge to create and maintain their organization’s geographic data by importing and processing data from other sources. A data editor possesses geocoding and linear referencing skills that involve data compilation and editing to build significant portions of their GIS datasets. They use data automation and apply tools and techniques that help ensure data integrity during editing. Key responsibilities may include:

- Accurately creating and maintaining data stored in a geodatabase that is used to produce GIS maps and analysis results that support informed decision making
- Assigning locations to other information sets for mobile clients and applying a standard editing workflow to support accurate field data collection and updates to the GIS database
- Efficiently creating and editing feature geometry and attributes and solve common data alignment issues
- Digitizing and editing geographic features to maintain spatial relationships using topology

GIS Technical Lead/Coordinator
A GIS technical lead/coordinator plans, organizes, coordinates, and participates in the development and implementation of the organization’s GIS to meet the organization’s mapping and end-user service objectives. They provide expertise, support, assistance, and guidance to organizational staff and external contacts. A GIS technical lead/coordinator’s responsibilities may include:

- Working closely with end users to identify GIS requirements, technical issues, and training needs
- Analyzing current business processes and recommend best-practice solutions
- Analyzing current GIS system functions, procedures, and capabilities to determine if improved methods are possible and develop and present proposals for new approaches and options to meet user needs
- Analyzing, troubleshooting, and resolving GIS application problems
- Communicating with internal and external technical resources to resolve end-user issues and providing guidance to users on methods for correcting reported problems

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GIS Administration/Technical

Database Administrator
The database administrator has primary responsibility for the spatial and tabular databases of the GIS. He or she oversees data automation and maintenance and is involved in logical, detailed database design and the design and maintenance of standards related to data entry and updating. The database administrator works with users to implement data standards and quality assurance programs by creating and updating the data dictionary and automated data validation functions.

System Administrator
Ideally, one individual should act as the overall system administrator for the GIS program. The system administrator maintains hardware, software, telecommunications, peripherals, and associated components. He or she must be familiar with GIS operations, how they differ from other IT systems, and how differences affect system usage and administration. Due to the interdependencies between GIS and non-GIS computer hardware systems, coordination with administrators of non-GIS systems is critical.

Web Administrator
The web administrator deploys an organization’s GIS functionality over the web and requires a firm understanding of the impacts and security implications of maintaining and operating an ArcGIS enterprise solution. This individual usually works closely with the web programmer. This role is often combined with the system administrator role.

ArcGIS Online Administrator
Administrators plan and configure the organization’s ArcGIS Online home page, users, groups, and access to GIS resources.

GIS Application Developer
The application developer creates custom applications to meet specific user needs, ranging from spatial data conversion programs to interface designs that support inexperienced users. Application development is typically based on designs developed by a GIS analyst.

Web Developer
A web developer designs, develops, and maintains Internet-based applications and other technologies that may include GIS services. The required knowledge for this role depends on the web technology used by the organization. ArcGIS for Server supports both the Java 2 Enterprise Edition (J2EE) and the Microsoft .NET platforms. A working knowledge of HTML and JavaScript is helpful regardless of server-side technology. This role is often combined with the application developer role.

Mobile Application Developer
A mobile application developer designs, develops, and maintains mobile applications for Android, iOS and/or Windows Phone.