ArcGIS Enterprise: An Overview

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What is Web GIS?
Working with ArcGIS Enterprise
ArcGIS Enterprise is powerful, flexible, and collaborative software that serves as the foundation of your organization’s Web GIS. It is deployed to fit your organization’s needs and resources; scales to meet demand. Advanced analytics capabilities are delivered in user-friendly ways. Content can be shared easily, securely, and efficiently with stakeholders. It is seamlessly integrated with the full stack of Esri GIS software products.
ArcGIS Enterprise | Server GIS vs. Web GIS

Server GIS

*Use of GIS services with custom front end applications*

- Users
- App
- Services
- Data

... n+1

Web GIS

*Pervasive use of web layers, scenes, and maps within all of the ArcGIS apps*

- Users
- Apps
- Web Maps
- Web Scenes
- Web Layers
- portal

Data
- Services
- Data
ArcGIS

**ArcGIS Online**

- Hosted by Esri (SaaS)
  - Upgraded automatically (by Esri)
  - Esri controls SLA

- Esri-provided content and services
  - Basemaps
  - Living Atlas
  - GeoEnrichment, Routing, ...

**ArcGIS Enterprise**

- In your own infrastructure (Software)
  - Upgraded by the organization
  - Organization controls SLA

- Advanced GIS functionality
  - GIS Server
  - Image Server (optional)
  - GeoEvent Server (optional)
  - GeoAnalytics Server (optional)
  - Notebook Server (optional)

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Core Web GIS functionality
(Apps, visualization, smart mapping, analysis...)
Begin with ArcGIS Online & SaaS

ArcGIS Enterprise | Web GIS Pattern Evolution

ArcGIS Online

ArcGIS Enterprise
Customer Managed Infrastructure
On-premises
Private Cloud
Public Cloud
(AWS, Azure, others)
Managed Services

Begin with ArcGIS Enterprise & Software
ArcGIS Enterprise is powerful, flexible, and collaborative.

**Desktop**
- Layer
- Feature class
- Mosaic dataset
- Address locator
- Geoprocessing tool
- 3D scene

**Server**
- Map service
- Feature service
- Image service
- Geocode service
- Geoprocessing service
- Scene service

**Portal**
- Map image layer
- Feature layer
- Image layer
- Geocoder
- Web tool
- Scene layer

Web maps
Web scenes
User Types | Match the way how your team works

Identity

Capabilities

View
Edit
Analyze
Create
Share
Administer

Apps

ArcGIS Enterprise

ArcGIS Online
User Types

- New licensing model for users beginning at 10.7
- Provides the much requested ‘intermediate level’ user
- Each user type has an identity, capabilities and included applications
- Match your licensing to your workflows
What can I do with ArcGIS Enterprise?

- Publish, host and serve web services
- Build and use applications
- Web mapping and analysis
- Access all kinds of data
- Share and collaborate
- Customize the look & feel of your GIS
- Run field operations
- Analyze big data
- Work with imagery and raster data
- Data science and machine learning
- Monitor real-time data and your IoT
Using ArcGIS Enterprise
Upload CSV, Symbology, WebMap, Arcade
Planning your Deployment:
ArcGIS Enterprise architecture
Server Licensing Roles

ArcGIS Server

- GIS Server
- GeoEvent Server*
- Image Server
- GeoAnalytics Server

One software component, multiple server roles

* GeoEvent Server requires installing the ArcGIS Server software + overlaying the GeoEvent Server setup

** Notebook Server is a separate download and install that does not require the main ArcGIS Server setup
Software Components

ArcGIS Enterprise = ArcGIS Web Adaptor, Portal for ArcGIS, ArcGIS Server, ArcGIS Data Store
Base Deployment Logical Architecture

- Portal for ArcGIS
- ArcGIS Server (hosting server)
- ArcGIS Data Store (relational + tile cache)
- ArcGIS Web Adaptor
Integrates with your organization’s existing web server to provide a single endpoint that distributes incoming requests and enables you to use web-tier authentication.
Portal for ArcGIS
The software component that enables the ArcGIS Enterprise portal. Portal for ArcGIS is the web frontend and API backend that supports a user’s interaction and overall experience with your Web GIS.
In a base deployment ArcGIS Server should be configured with a GIS Server licensing role and as the hosting server. In this capacity it gives you the ability to publish and share maps and layers from ArcGIS Pro using your own business databases and by copying data to the server.
Base Deployment Logical Architecture

ArcGIS Data Store

The ArcGIS managed data repository that stores the Enterprise portal’s hosted content. It is not a replacement for your enterprise geodatabases.
Base Deployment Logical Architecture

ArcGIS Data Store
- Relational
- Tile Cache
- Spatiotemporal

NOTE: This is not a replacement to your Enterprise Geodatabases.
Expanding out from the base deployment

• Multiple reasons and ways to add to the base deployment

1. Adding additional GIS Server sites
   - Isolate hosting server site from traditional GIS Server duties
   - Have dedicated GIS Server sites for various purposes: heavily used map services, geoprocessing services, …

2. Adding additional capabilities
   - Image Server
   - GeoEvent Server
   - GeoAnalytics Server
   - Notebook Server
Adding additional GIS Server site to your deployment
Adding Image Server to your deployment

Base deployment

Image Server Site (dynamic image services)

Image Server Site (raster analytics)

Separate Image Server sites for each capability
Summary – Deployment Architecture

• Always start with your Base Deployment
  - Higher SLA requirement/importance -> redundant components and more complicated systems
• With strong Base Deployment you can expand in multiple directions later on

Next steps when Deploying
• Verify deployment (Publish test data)
• Add members (Built-In or enterprise users)
• Customize the portal
Web GIS isn’t necessarily one or the other.

Begin with ArcGIS Online & SaaS

ArcGIS Online
Esri-managed cloud infrastructure

ArcGIS Enterprise
Customer-managed infrastructure

Begin with ArcGIS Enterprise & software

Basemaps & Content Services

Foundational
Powerful
Flexible
Collaborative
Portal for ArcGIS

ArcGIS Server (hosting server)

ArcGIS Data Store (relational + tile cache)

ArcGIS Web Adaptor (Server)

ArcGIS Web Adaptor (Portal)

Maps/Viewer

Dashboards
Hybrid Scenario – OnPremise Services, Basemap/WebMap Online working with Collector
Hybrid Scenario – OnPremise Services, Basemap/WebMap Online working with Collector – with Failover Server
High Availability Scenarios

Further information for Deployments:
Sharing Content
with ArcGIS Enterprise
- View all content or a curated group
- Filters: Date Modified, Status
- Search
- Living Atlas tab (‘Esri Featured Content’) moved to Content page
Tabs for Subsets
- Filters: categories, date modified, date created, shared, status
- Sort by date modified, title
- Display: grid, table, list
- Search
- Filters: date created, viewable by
- Sort by title, date modified, date created
- Search
Item level enhancements

- New item information bar
- Authoritative and deprecated badges

Promote quality items

Encourage quality metadata
Content categories

- A way to arrange and discover content based on organization-wide themes

- Categories allow members to organize items consistently and provide a simple way to browse content in the organization

- Use custom or template hierarchies

- Default administrator role or custom role with privilege ‘manage categories’
Sharing Content
Publish Data, Categorize, Search
Sharing beyond your organization
Distributed collaboration

Establishes a trusted, collaborative environment with others
Enables the sharing of data and information, quickly, easily and repeatedly

From Individuals To Organizations To Networks of Organizations
Additional Topics
Further Session to Areas of ArcGIS Enterprise
Dedicated Server Role Sessions

ArcGIS and Big Data: ArcGIS GeoAnalytics Server and the Spatiotemporal Big Data Dataset
Nov. 4th, Monday – 4:00 p.m.
Salon Humboldt

ArcGIS GeoEvent Server: Applying Realtime Analytics
Nov. 5th, Tuesday – 2:00 p.m.
Salon Corinth

ArcGIS Enterprise: Getting started with ArcGIS Notebook Server
Nov. 5th, Tuesday – 9:00 a.m.
Ballroom ABC
Deployment & Cloud

ArcGIS Enterprise: In the Cloud
Nov. 6th, Wednesday – 2:00 p.m.
Salon Heine I and II

ArcGIS Enterprise: Automating and Configuration
Nov. 4th, Monday – 4:00 p.m.
Ballroom ABC
Webhooks
Automate notifications based on portal actions

An action occurs.
• Something is published
• A user creates a new account
• An item is deleted

The webhook is triggered.
• Delivers JSON description of event
• Relevant info fields

Your platform of choice kicks in.
• IFTTT
• Integromat
• Microsoft Flow

It performs an action.
• Emails you
• Posts in Slack
• Alexa announces it at the dinner table (maybe not)

ArcGIS Enterprise: Using Webhooks
Nov. 6th, Wednesday – 12:00 p.m.
Salon Humboldt
ArcGIS API for Python: Administring Your WebGIS
Tuesday Nov. 5th – 03:00 p.m.
Ballrom ABC

ArcGIS Enterprise: Developing Server Object Extensions and Interceptors
Wednesday Nov. 6th – 09:00 a.m.
Salon Humboldt
Questions ?
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Complete answers and select “Submit”