Esri Best Practices:
Implementing and Configuring the ArcGIS Platform
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Context:

Implementing and Configuring the ArcGIS Platform to achieve an Initial Operating Capability

“The state achieved when a capability is available in its minimum useful deployable form”
Web GIS Is Transforming GIS
Opening, integrating and simplifying everything
Traditional Considerations for Implementing ArcGIS

- Desktop -> Enterprise Geodatabase: multi-user editing and viewing

- Desktop to Server: drawing maps in map services
Modern Considerations for Implementing a Web GIS

- Users & Workflows
- Security
- Capacity
- Architecture

Data -> Services -> Webmaps

System of Engagement

Web GIS
Implementing & Configurating the ArcGIS Platform
Enable & Empower Your Organization

Monitor & Maintain

Location Strategy

Build Capacity

Assess & Plan
Location Strategy
Organizational Vision
What is the Overarching Goal?

The primary mission of the Department of Building Safety is to safeguard the public, promote the health, safety and welfare of the City.....

.....helps its clients achieve profitable growth with a combination of specialized broking expertise, strategic advisory services.....

Esri Professional Services supports customers and partners in the effective implementation and application of ArcGIS software
Establish Key Users
How is Location Valuable to Them?

- Desktop Analyst: What is being collected?
- Team Supervisor: Where is my team?
- Field Worker: Where is my next task?
As a [Role] I can [Feature/Function] so that [Goal/Business Value]…. 

…. I will know I’m successful when I can [select/operate] [Feature/Function] so that [output] is [visible/complete/ect.]
Implementing & Configurating the ArcGIS Platform

Enable & Empower Your Organization

Location
Strategy

Organizational Vision
Establish Key Users
Identify Location Value

Monitor & Maintain

Build Capacity

Assess & Plan
Assess & Plan
Document Workflows
Start with Patterns of Use

Mapping & Visualization
- Understand locations and relationships with maps and visual representations

Data Management
- Collect, organize, and maintain accurate locations and details about assets and resources

Field Mobility
- Manage and enable a mobile workforce to collect and access information in the field

Monitoring
- Track, manage, and monitor assets and resources in real-time

Analytics
- Discover, quantify, and predict trends and patterns to improve outcomes

Design & Planning
- Evaluate alternative solutions and create optimal designs

Decision Support
- Gain situational awareness and enable information-driven decision making

Constituent Engagement
- Communicate and collaborate with citizens and external communities of interest

Sharing & Collaboration
- Empower everyone to easily discover, use, make, and share geographic information
Information Product Needs

Fit to Workflows

Location
Enablement
- Discover, use, make, and share maps at work anywhere, anytime

Constituent
Engagement
- Facilitate and manage communication with stakeholders

Decision
Support
- Inform execs and management with maps and location intelligence

Field
Mobility
- Get authoritative information into and out of the field

Analytics
- Describe, predict, and improve business performance

Location Data
Management
- Collect and organize location data about your assets and resources

Survey123

ArcGIS Collector

Operations
Dashboard

ArcGIS Navigator

Business
Analyst Online

ArcGIS Earth

ArcGIS Explorer
Data Requirements
Minimum Data Required to Meet Users Needs

1. Layers
   - Map Layers
     - Scene layer
     - Tile layer
     - Map image layer
     - Imagery layers
   - Feature Layers
     - Feature Service
     - Feature collection
   - Tables

2. ArcGIS Online
   - ArcGIS Data Store
   - Files
   - Enterprise Geodatabase
Determine a Deployment Pattern

• Base Enterprise Deployment (10.6)
  - ArcGIS GIS Server
  - Portal for ArcGIS
  - ArcGIS Datastore
  - ArcGIS Web Adaptor

• Can be configured with a single machine or with multiple machines
Single Machine Deployment

• Benefits:
  - Minimal investment
  - All-in-one
  - Easiest to deploy
  - Best used for testing
  - Limited impact on hardware resources

• Considerations:
  - Least stable,
  - Not-scalable
Multitiered Deployment

• **Benefits:**
  - Scales to meet increased load
  - Separation of work
  - More stable

• **Considerations:**
  - Increased hardware expenses & IT management
High-Availability Deployment

• Benefits:
  - Highest stability
  - Load balancing
  - Fail over

• Considerations:
  - Increased hardware expenses
  - Integration with 3rd party software
  - More IT management required
**Capacity Planning**

Sizing Based on Workflows & Usage

- **Assemble Requirements**
- **Apply Methodology**
- **Determine Needs**

**Concurrent users**

GIS Services

Users

Response Time + Think Time

throughput

Network capacity

- Core SpecRate

**Software distribution**

**CPUs**

TH = Response Time + Think Time

TH = \( \frac{\text{ST}_b \times \text{TH}_t \times 100}{3600 \times \%\text{CPU}} \) x \( \frac{\text{SpecRatePerCPU}_b}{\text{SpecRatePerCPU}_t} \)

\( \# \text{CPU}_t = \frac{\text{TH} \times \text{Mbits} / \text{req}}{3600} \)
Platform Architecture
Meets Initial Demands—Scalable

- Components
- Networks
- Users
- Server Configuration
- Sizing
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Location Strategy
Build Capacity
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Document Workflows
Determine Maps & Apps
Data Requirements
Capacity & Design
Build Capacity
Software Installation
Distribute Content to Users

- Prepare Environment
- Run ArcGIS Enterprise Installation
- Create or Join Site
- Install Web Adaptor
- Connect in ArcGIS for Desktop
- Grant Permissions to Data
- Publish Services
Configure Organizational Site
Your User’s First Impression

- Use your organizational brand
- Use consistent visual cues
- Intuitive naming conventions
- Add useful descriptions
- Pre-populate with content
- Create a resource destination
Building Data
Central & Authoritative Content
Configure Maps & Apps
Workflow Driven Information Products

Business Analyst Online
AppStudio for ArcGIS
Operations Dashboard
ArcGIS Collector
ArcGIS Explorer
ArcGIS Earth
Survey123
ArcGIS Navigator
Runbook
Standard Documentation To Capture

- Intended Use Cases
- Capacity Calculations
- System Diagram
- Installation Summary
- Configuration Specifications
- Go-Live Details
- Logged Incidents
- Training Needs
- Restore Procedures
Rollout
Get People Working!

- Technology Implemented
- Information Products Ready
- Location Strategy
- Detailed Plan

- Users Empowered
- Next Big Idea
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Organizational Vision
Establish Key Users
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Installation
Configure Maps & Apps
Rollout

Document Workflows
Determine Maps & Apps
Data Requirements
Capacity & Design
Monitor & Maintain
System Maintenance
All Facets of Your Implementation
Monitoring
Proactively Review Your Status
Out of the box tools

Testing, Tuning, & Scaling
Fixing Issues – Preparing For Expansion

Custom Tools
Training

Evolve Your People with Your Technology

Authoritative Resources
Thousands of hours of professionally developed and curated content

Relevant Training for Your Role
Content for everyone - students, educators and professionals

Many Ways to Learn
Multiple options and formats to meet your needs

Helping you Grow
Content for all stages along your learning journey
Reconnect With Users
Have Needs Changed?
Please Take Our Survey on the App

Download the Esri Events app and find your event

Select the session you attended

Scroll down to find the feedback section

Complete answers and select “Submit”