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esri.com/serug

# ArcGIS for Server 10.1

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# Summary

- Vision
- Installation and Configuration
- Architecture
- Publishing
- Functional Enhancements
- Cloud
- Migration and Best Practices

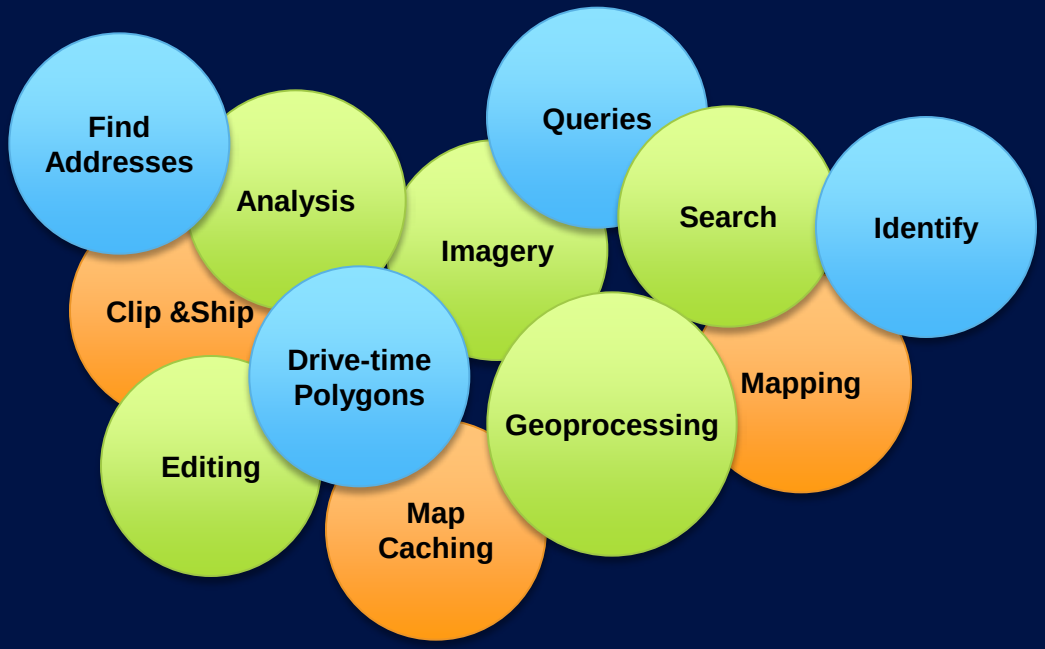
# Vision

**Powerful GIS capabilities**

**Delivered as Web services**

**To help solve real problems by real people**

# Faster




**Native 64-Bit**

**Code optimizations**

# Simpler

**Pure GIS Services Server**

**New Architecture**

*Admin REST API*
*Easy to install, configure and administer*
*Linux friendly*

# Product Name

- ArcGIS Server 10.0
  - .NET
  - Java
- ArcGIS for Server 10.1
  - Windows
  - Linux

# Publishing Services with ArcGIS

- **ArcGIS for Server**
  - Map, Cached Map
  - Feature
  - Locator
  - Geodata
  - GP, Network
  - Image
- **ArcGIS Spatial Data Server (included)**
  - Feature
- **ArcGIS Online hosted services (subscription)**
  - Feature
  - Tiled

# Installing & Configuring

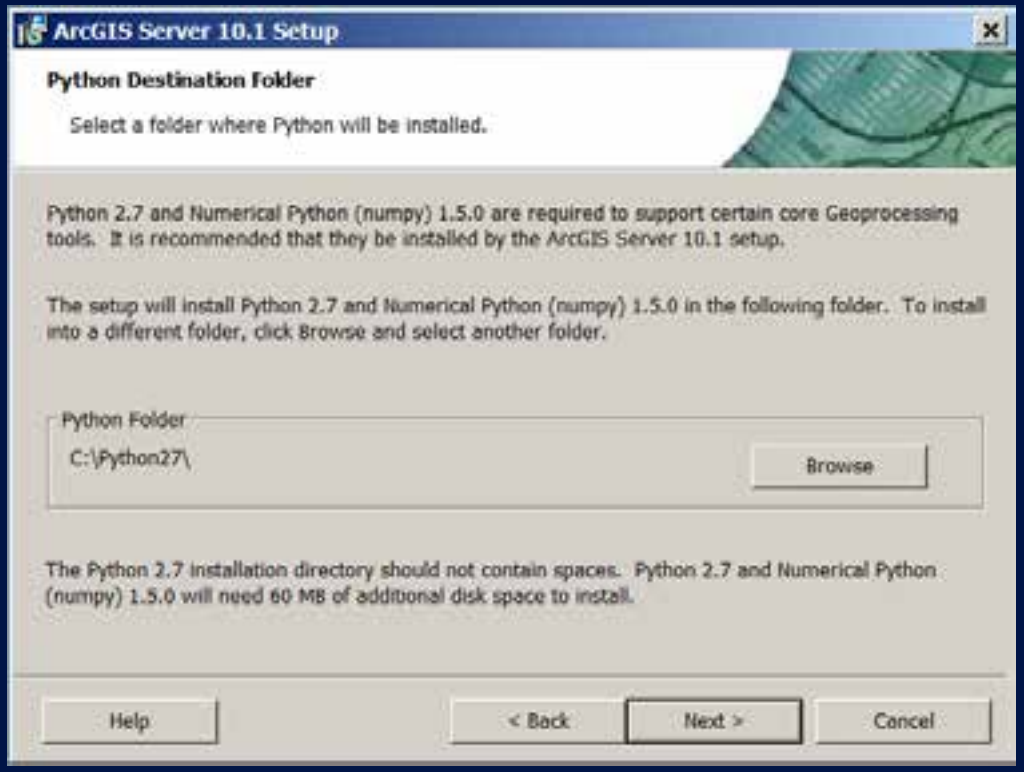
Simplified setup experience

# ArcGIS Server 10.1 Setup — Windows

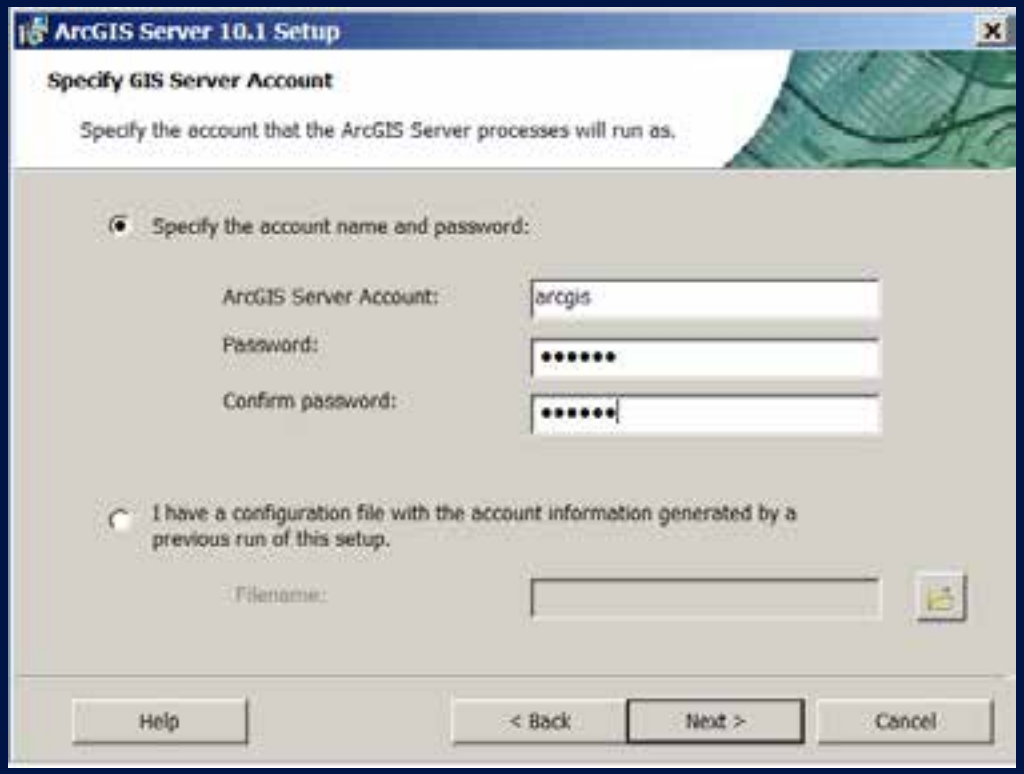
# License Agreement

# Select Features

# Python

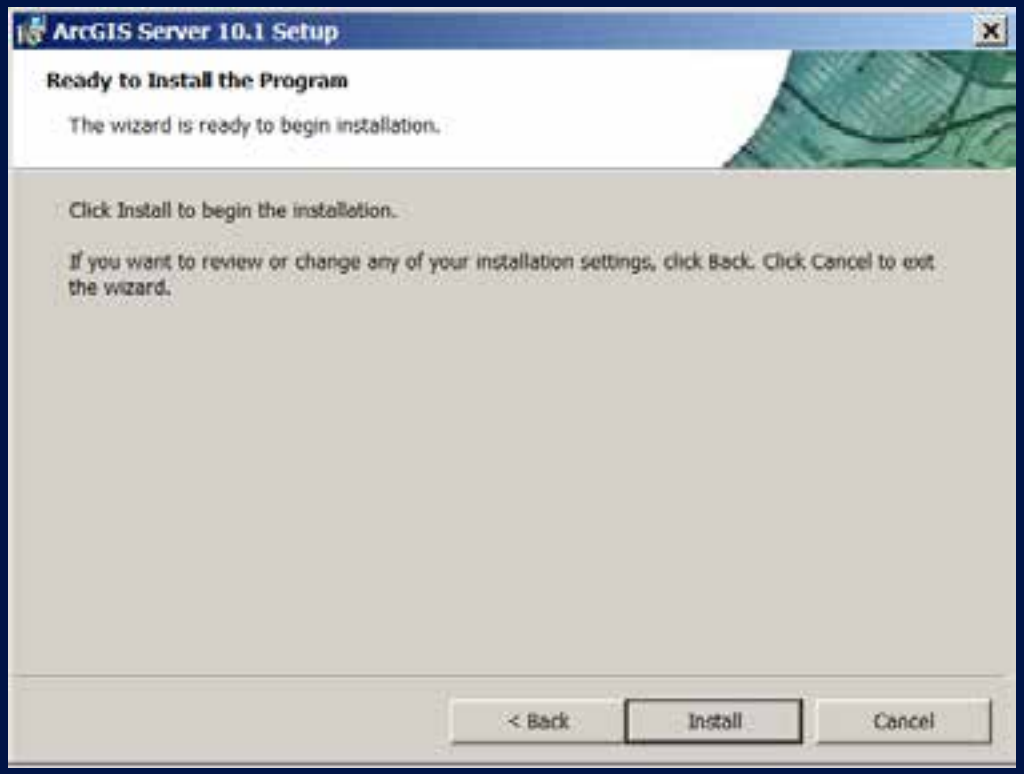

ArcGIS Server 10.1 Setup
Python Destination Folder
Select a folder where Python will be installed.
Python 2.7 and Numerical Python (numpy) 1.5.0 are required to support certain core Geoprocessing tools. It is recommended that they be installed by the ArcGIS Server 10.1 setup.
The setup will install Python 2.7 and Numerical Python (numpy) 1.5.0 in the following folder. To install into a different folder, click Browse and select another folder.
Python Folder
C:\Python27\
Browse
The Python 2.7 installation directory should not contain spaces. Python 2.7 and Numerical Python (numpy) 1.5.0 will need 60 MB of additional disk space to install.
Help
< Back
Next >
Cancel

# ArcGIS Server Account



# Save Configuration

# Start install

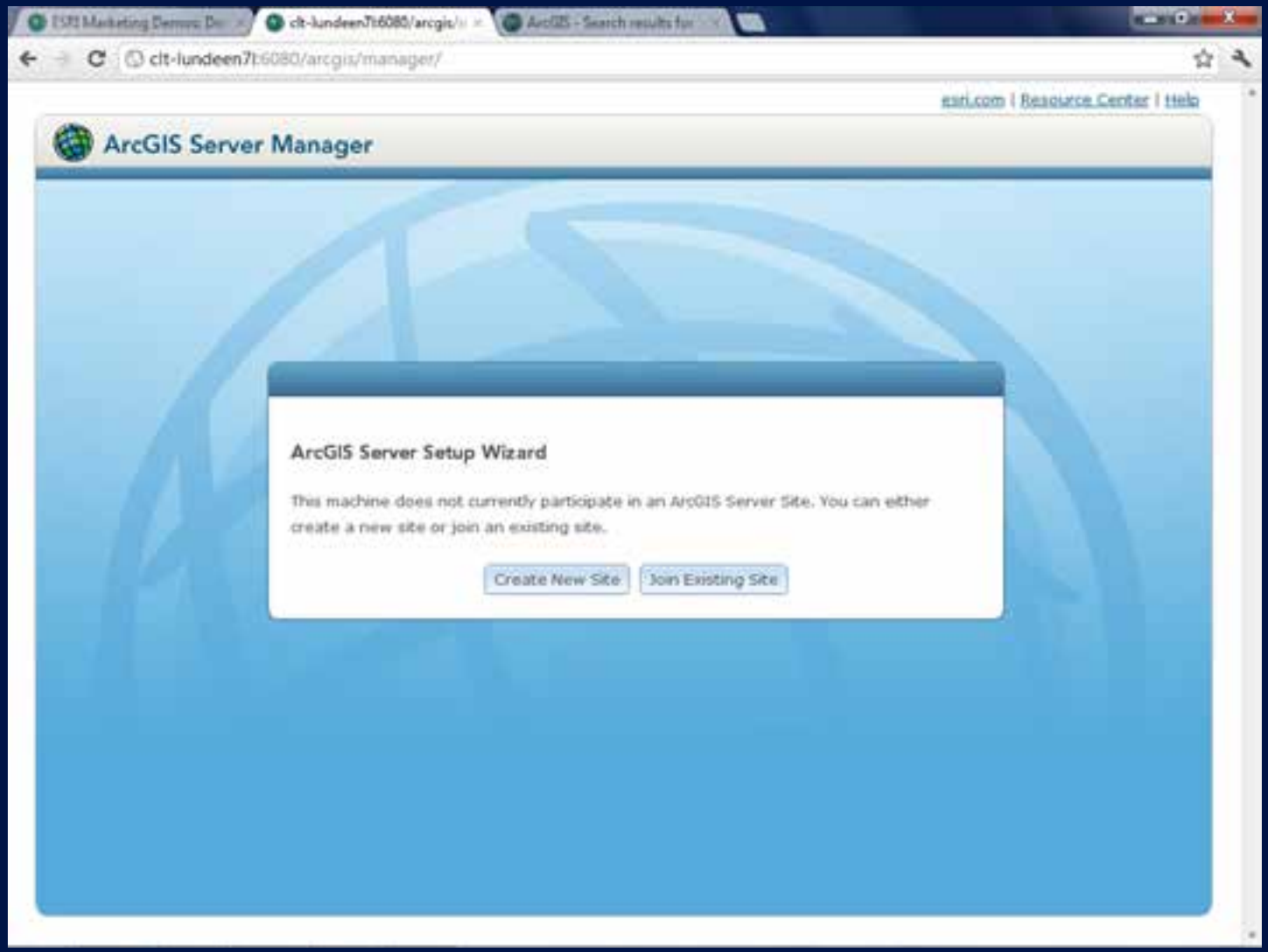


# Installing ArcGIS Server 10.1

- No install dependencies
- Faster setup time
  - Cut time in half
  - Setup doesn’t change Windows Registry
- Must be 64 bit operating system

- Setup launches Software Authorization Wizard
- ArcGIS Server Manager is opened after software authorization completes

# Sign in to Server Manager

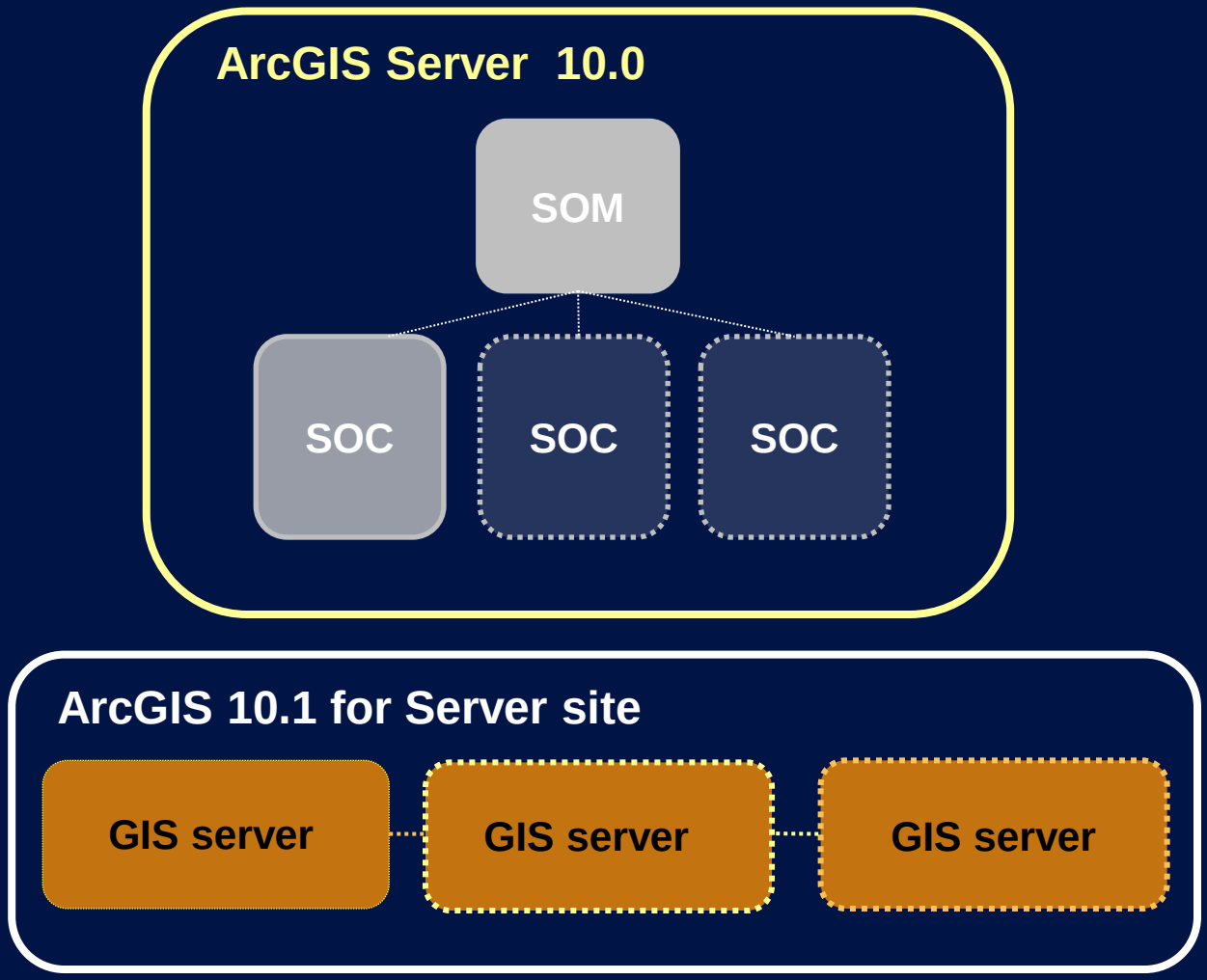


# Two Accounts

- **ArcGIS Server Account – arcgis**
  - created on install
  - OS account
  - starts/stops GIS processes
  - needs access to resources and data

- **Primary Server Administrator**
  - provides access to admin level functionality
  - created during initial login to site

# Comparing Architecture

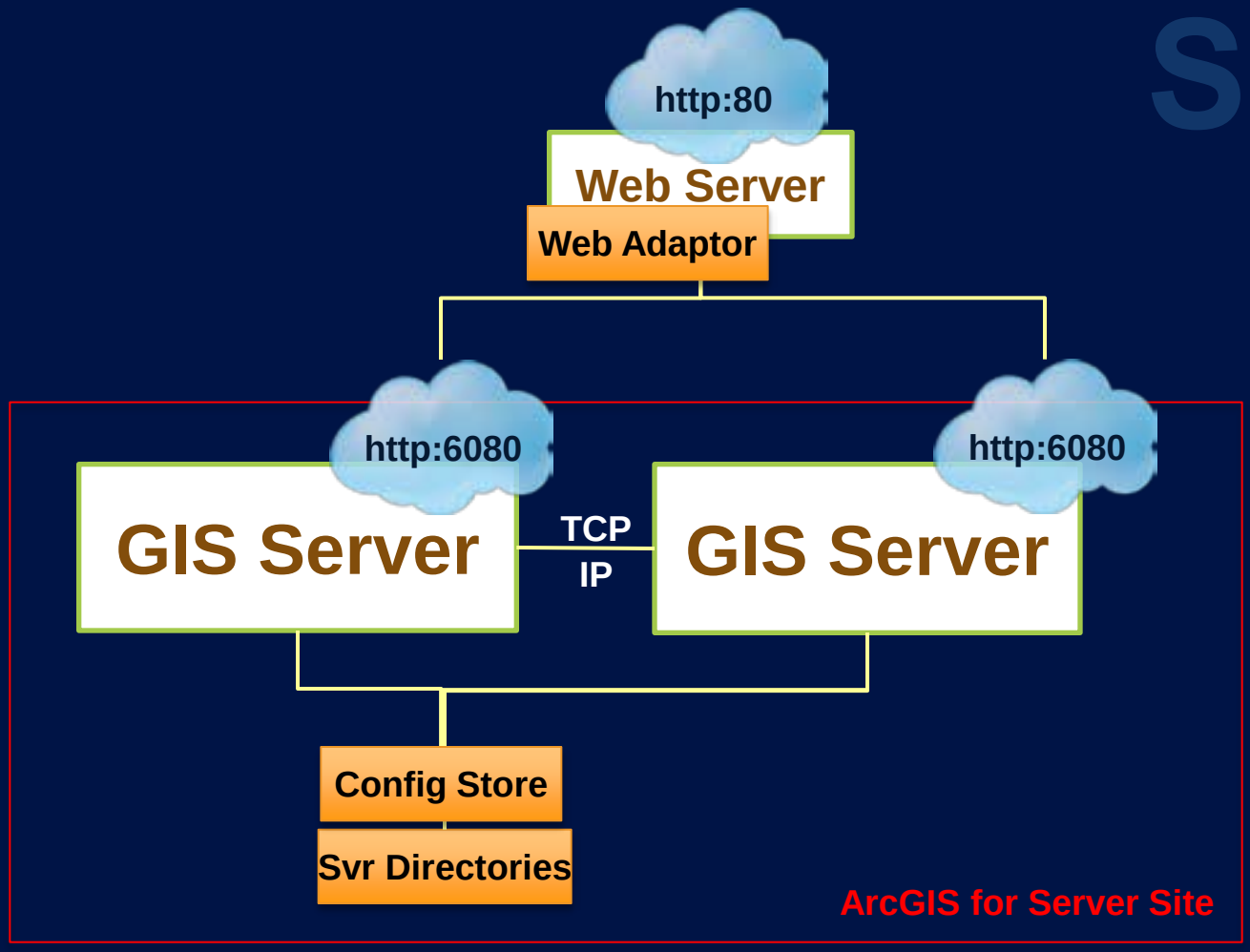


# Single-machine Site

C:\arcgisserver\directories\

arcgis
- cache
- index
- Input
- jobs
- output
- system
- uploads
- kml

# Multi-machine Site



# Accessing the Server

- **Services Directory**
- **http://clt-lundeen7l/arcgis/rest/services**

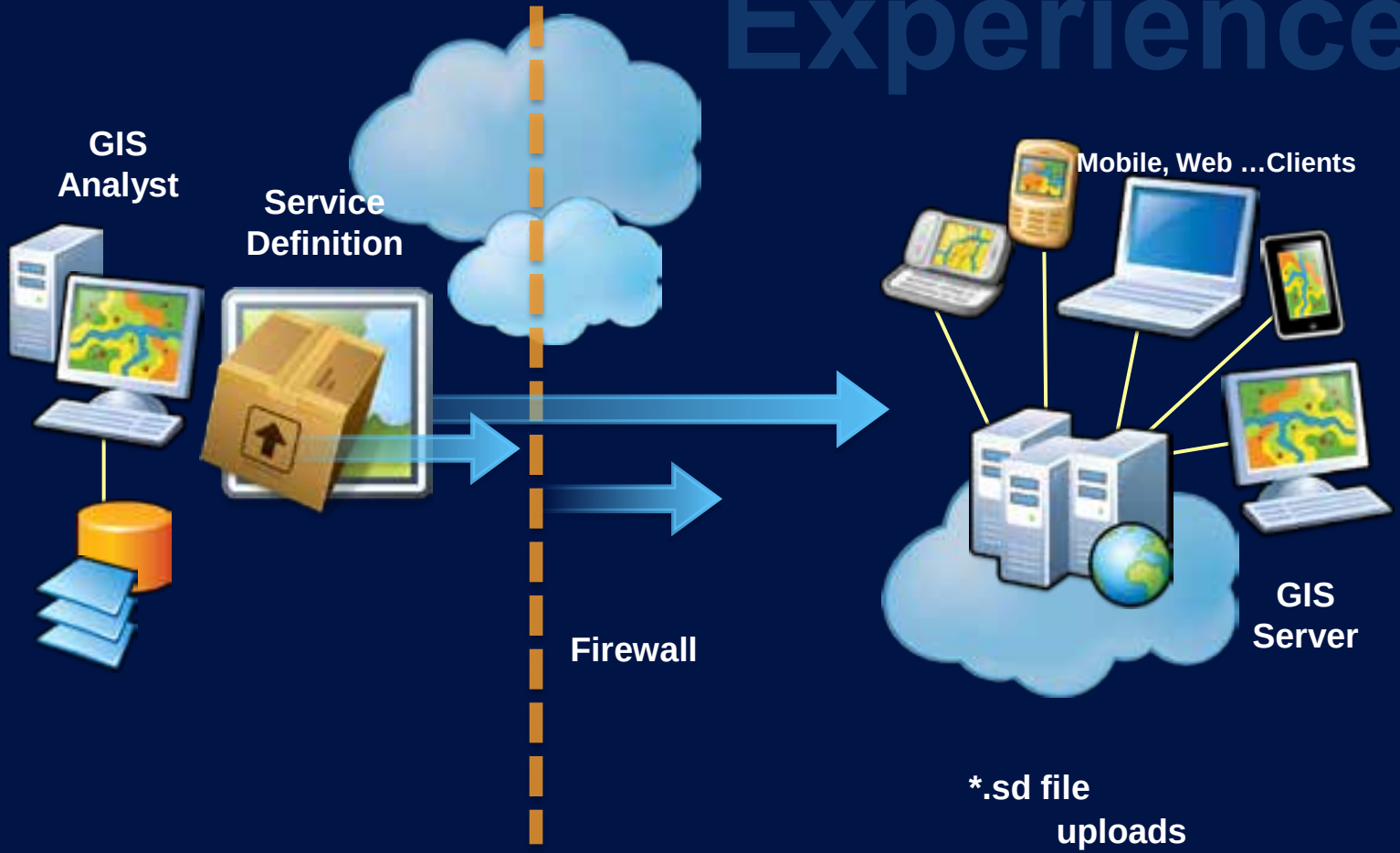
- **Manager**
- **http://clt-lundeen7l:6080/arcgis/manager**

- **Admin API**
- **http://clt-lundeen7l:6080/arcgis/admin**

*Also GIS Server connection in ArcCatalog.*

# New Publishing Experience

# New Publishing Experience



# Sharing resources

- **Map document**
  - **In ArcMap**
    - **File > Share As > Service**

- **GP model or script**

  **In ArcMap, run tool**

  **Results window, right-click**

  **Share As > Geoprocessing Service**

- **Other items (geodatabase, locator)**

  **In Catalog, right-click**

  **Share As > Service**

*Analyzer will always check the resource*

# Service definition files

- Portable file *.sd
- Includes
  - service properties, capabilities
  - data (depends on setup)
- Use to publish service later

# Modifying a Service

- Change resource
  - mxd, locator, GP model
- Restarting the service does not capture these changes!
- Share As Service again and select Override

# Modifying Data

- If data is copied > override service
- If data is registered to same location>
  - No action needed.
- If data is registered to different locations>
  - Copy/paste, etc.
  - Geodata replication

# Default staging location

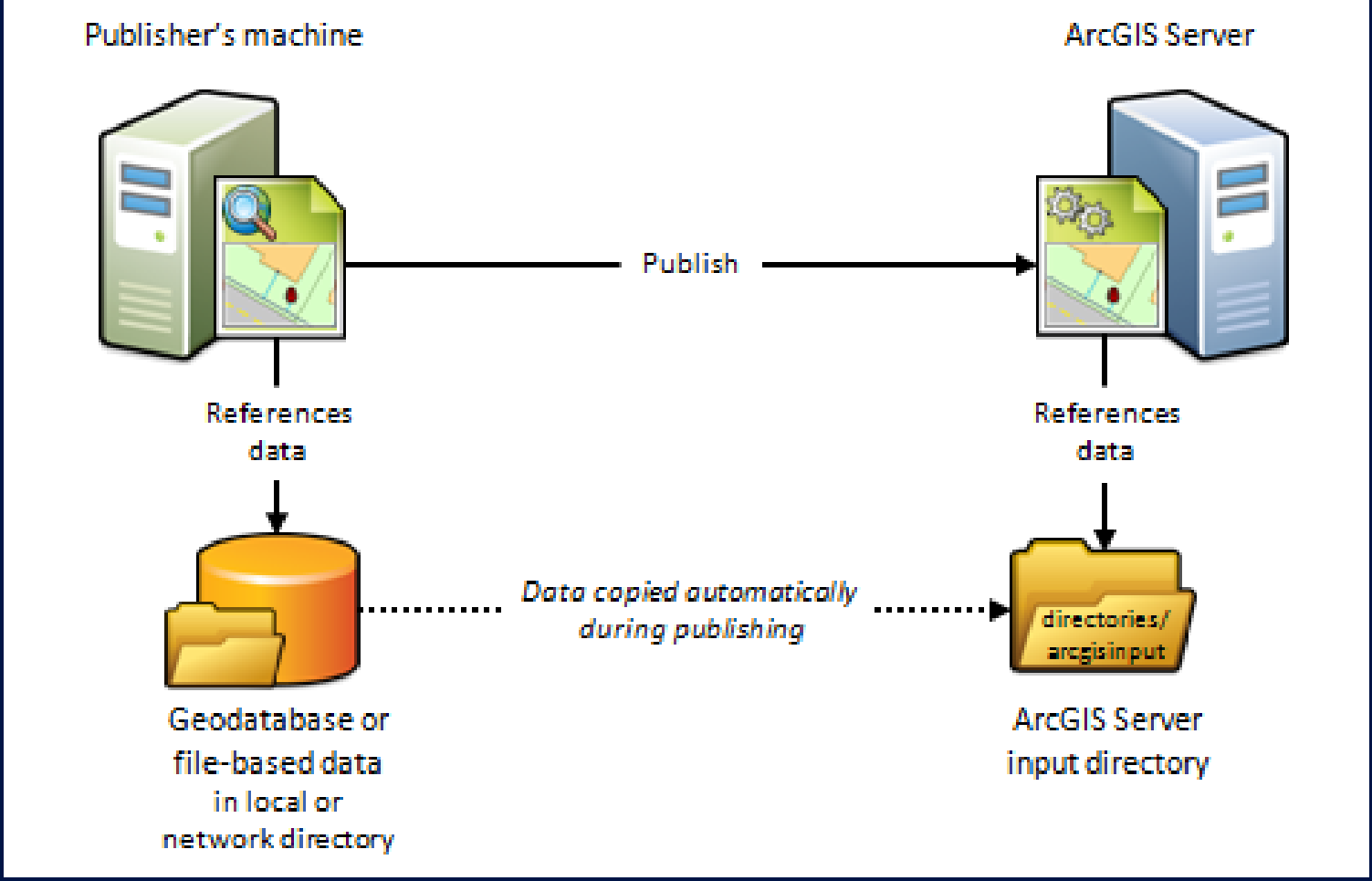
- Temporary folder in your Windows user profile
- C:\Users\<user>\AppData\Local\ESRI\Desktop10.1\StagingFolder

- Contains:
  - connections to ArcGIS Server
  - any draft service definition files

# Server destination

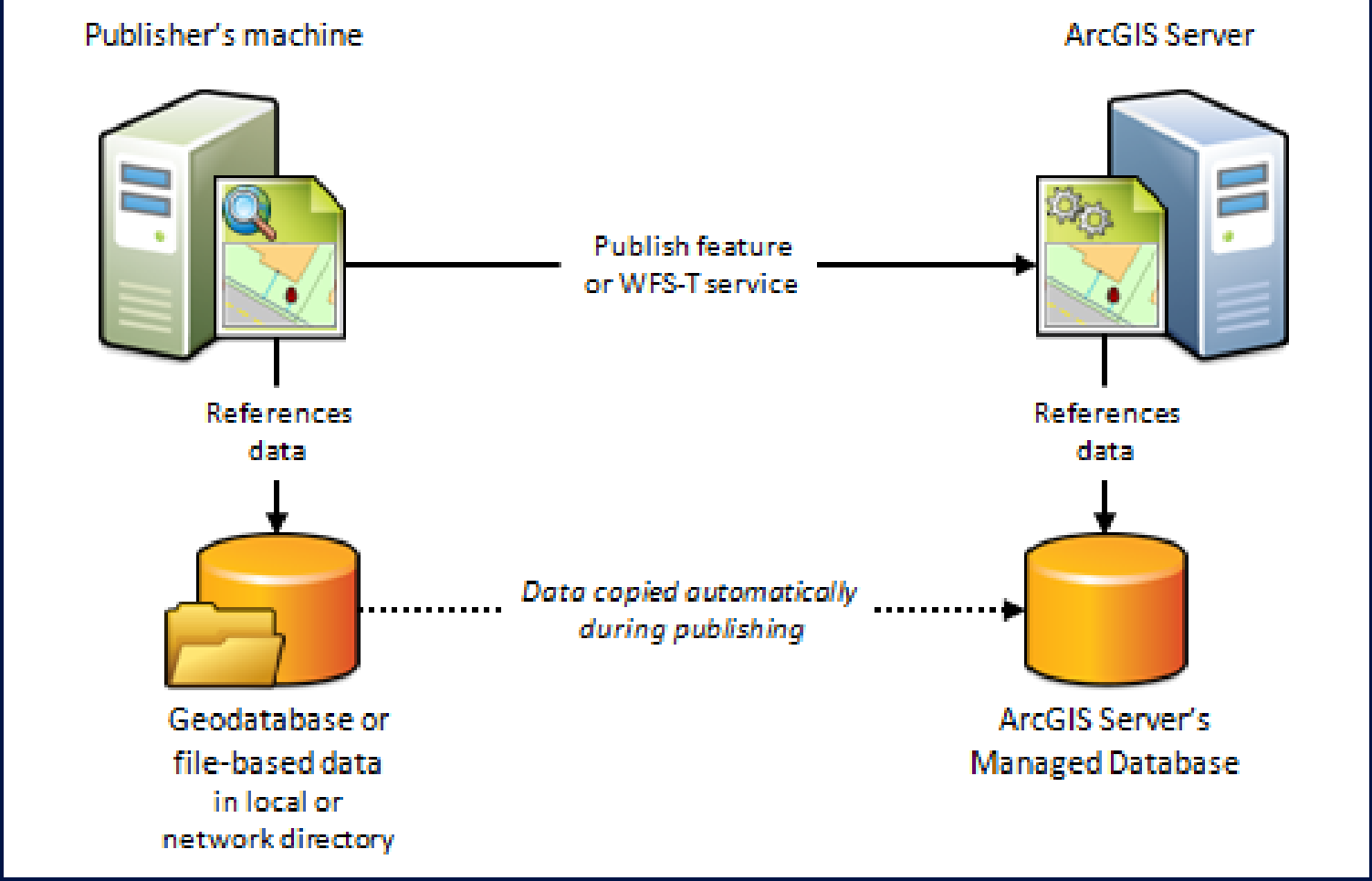
- server uploads directory
- input directory

# Automatic Data Transfer




*This is the default. It will produce a warning in the Analyze step.*

# Data Transfer for Feature Services




*Must register a managed geodatabase on the server first.*

# Registering Data Stores

**Prevents auto copying your data to the server.**

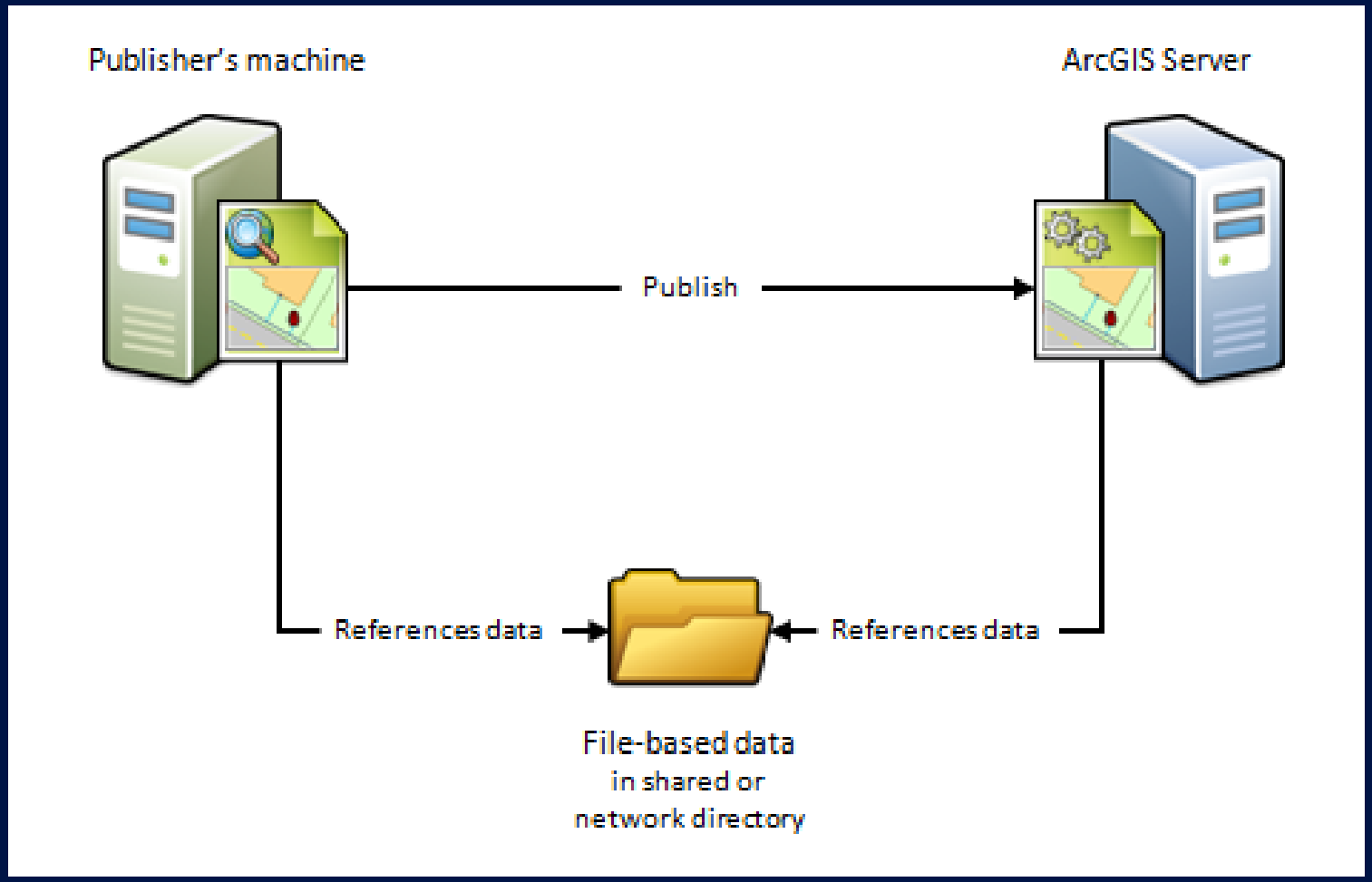
**Two options:**

1. **Can mimic current 10.0 implementations**
   **//gisprod1/data (same on publisher and server)**

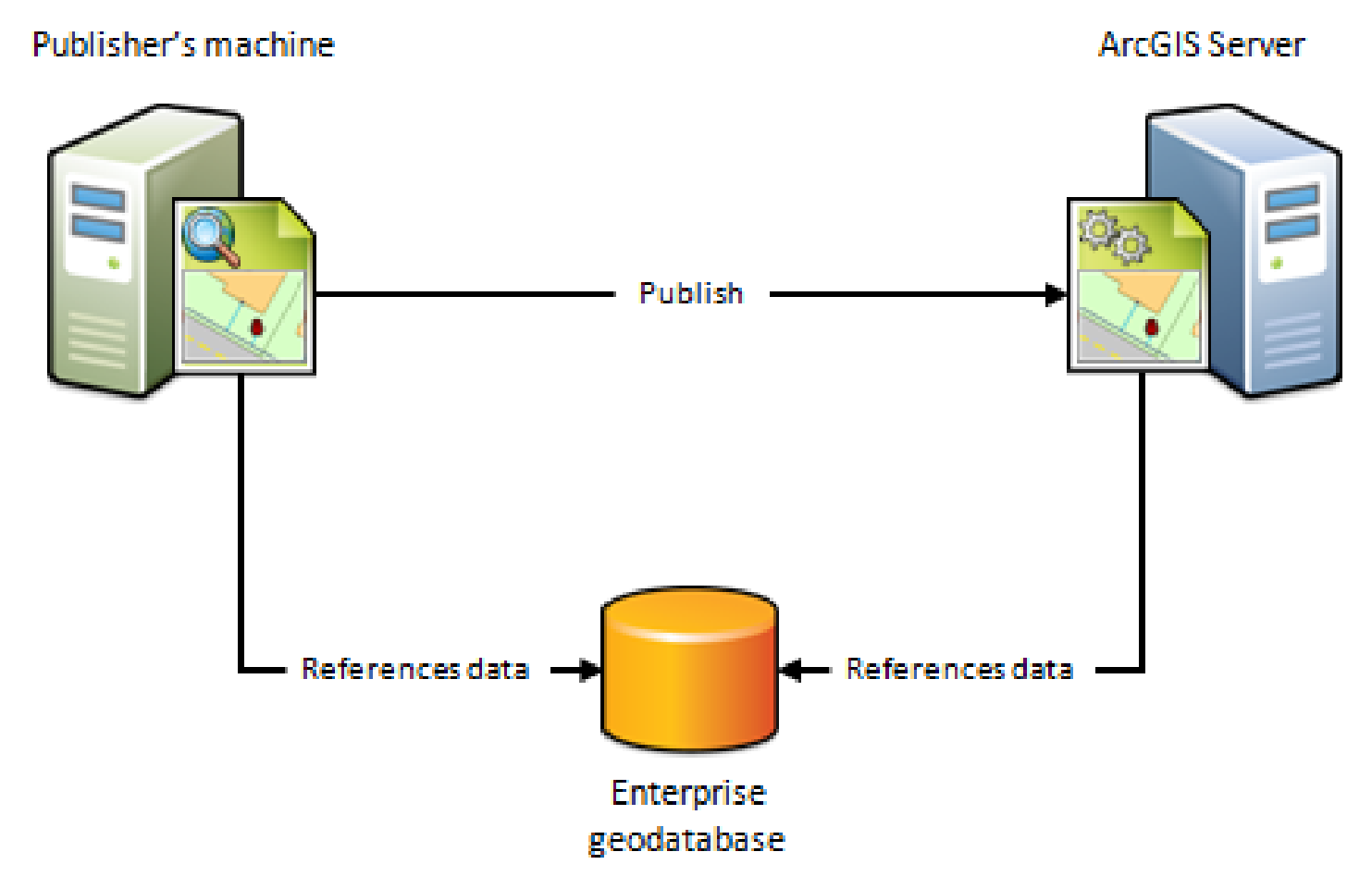
2. **Can re-path your data during publishing!**
   **C:\docs\demos\Tampa**
   **D:\data\Tampa**

*Works for geodatabase connections also!*

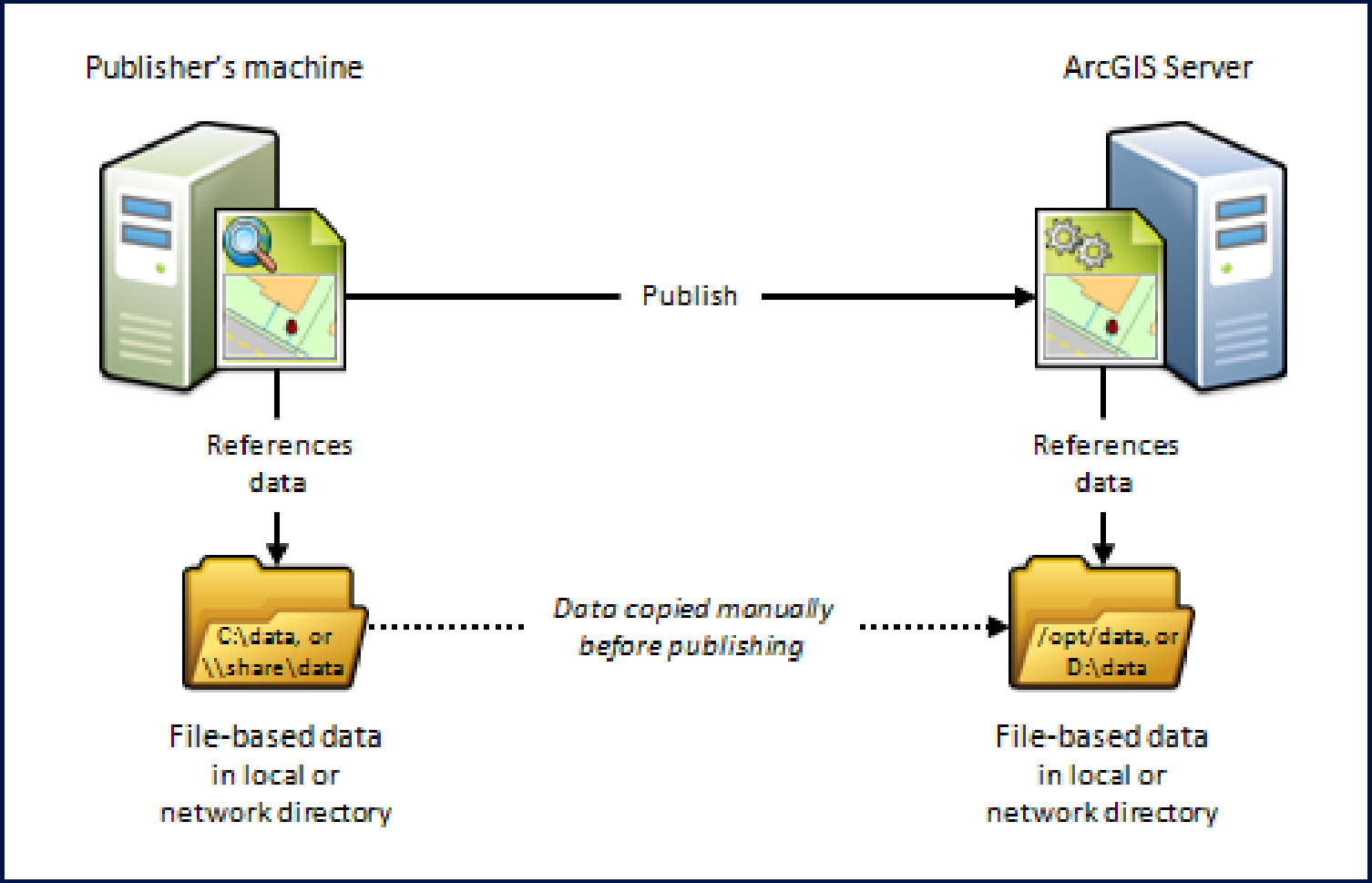
# Registered Data Store – Same Folder



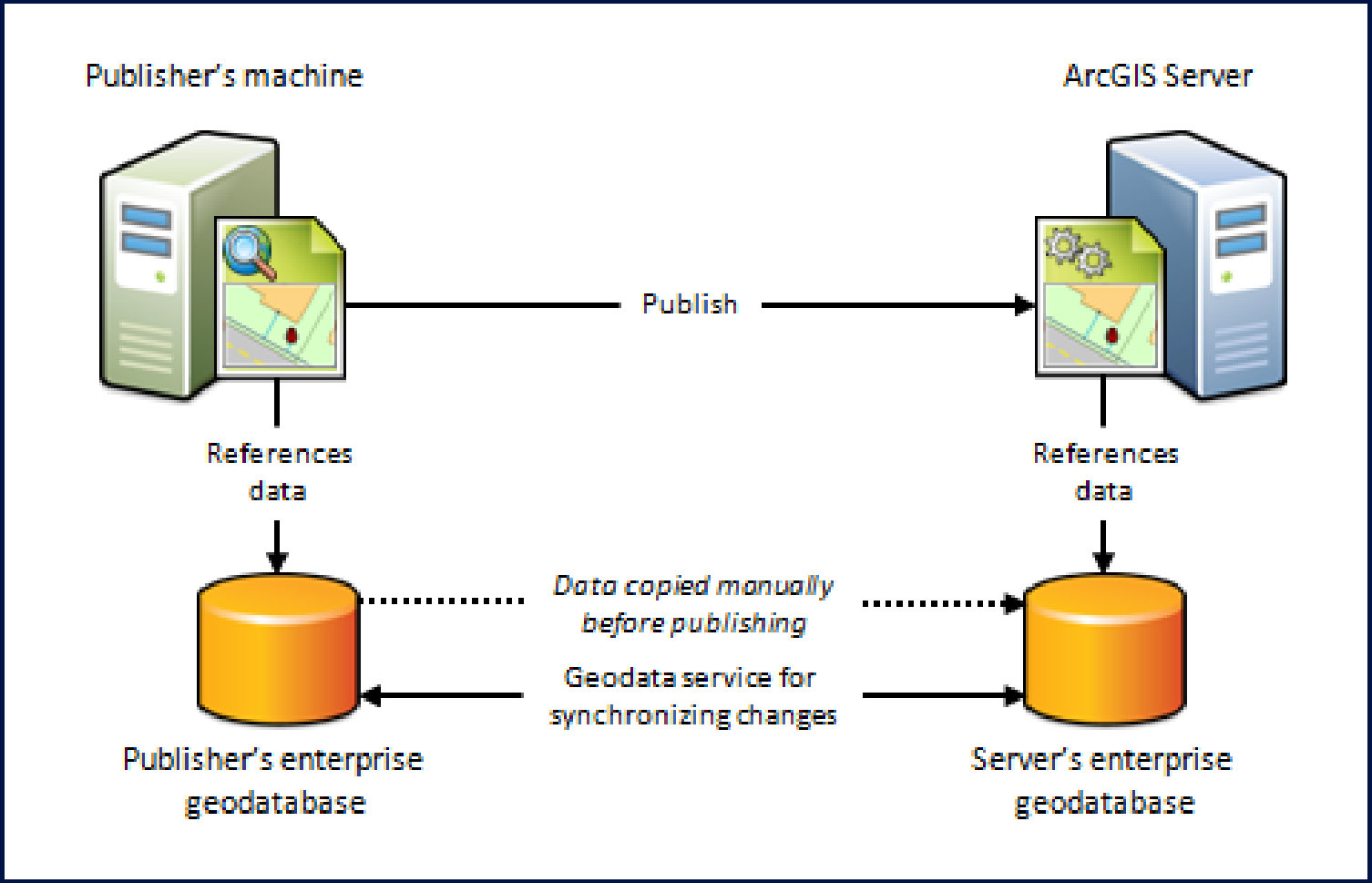
# Registered Data Store - Same Connection



# Registered Data Store – Two Folders



# Registered Data Store – Two Geodatabases



# Functional enhancements

Feature Services

Web printing

Enhanced Map Service

WMT-S, WPS
Better caching tools
Image mensuration…

# Map Services

Dynamic Layers

# Export Web Map

On-demand high quality printing

# Feature Services

Ownership based data access

Edit Named Version

Roll-back on failure

# Other feature enhancements

Schematics

Geometric Network Tracing

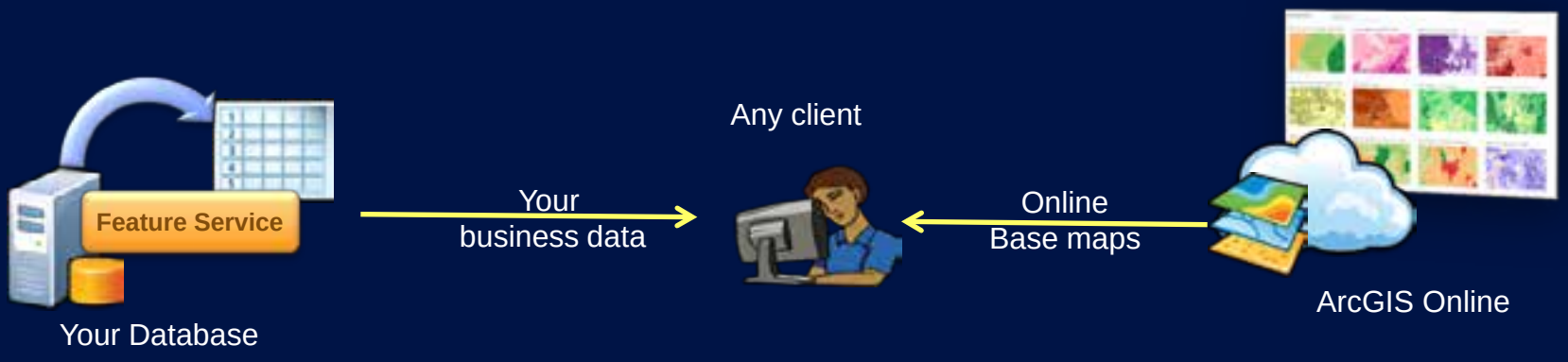
# Other Feature Enhancements

- **OGC support: WMTS and WPS**
- **Caching tools for Image Services**
- **Geometry Service: Geodesic buffer, Datum Transformations**
- **Feature Service: Apply edits for many layers at once**

# Spatial Data Server

**Lightweight REST GIS Web Services**

**for spatially aware databases**



# ArcGIS Spatial Data Server technology

- New technology component included in all ArcGIS Server editions
- Provides simple mapping capabilities on databases
  - Oracle, SQL Server, DB2, PostgreSQL
- Lightweight and very fast
- Plugs directly into existing web servers

Direct DBMS Access

# Workflow with Spatial Data Server

- 1) Load data into the database
  - Via SQL
  - Or with ArcGIS Desktop
- 2) Author your map with ArcGIS Desktop
- 3) Publish map as a Feature Service
- 4) Consume from any web client

Direct DBMS Access

# Workflow with Spatial Data Server

- **Business requirements will be using the technology to work with non-geodatabases to publish spatial data**
  - **Oracle Spatial**
  - **SQL*Server geometry or geography**
  - **Postgres PostGIS**

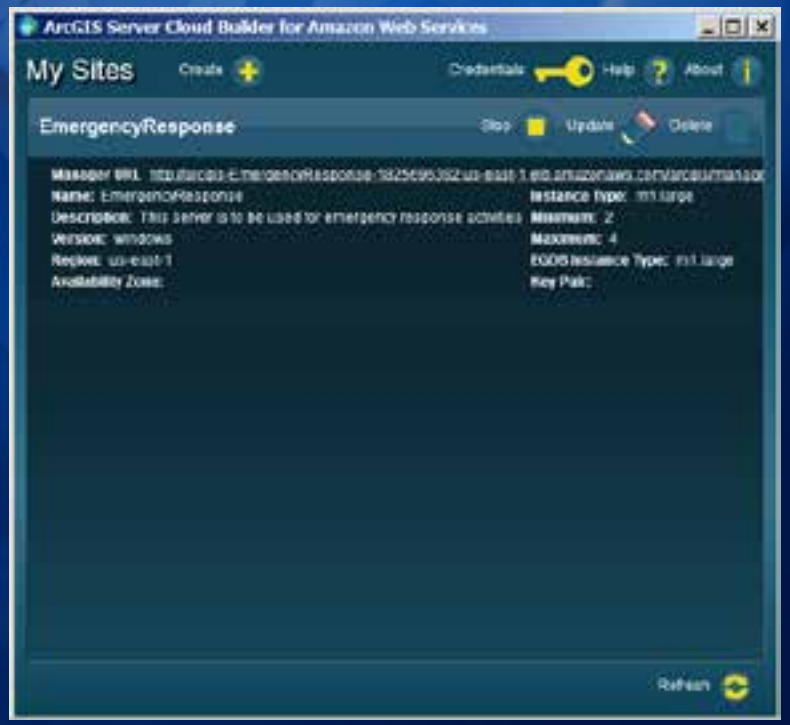
Direct DBMS Access

# Cloud

- Enhanced Amazon support
  - Linux, Async GP, Caching, Publishing, Launching
- Support for Azure
- Private Clouds
  - CloudBurst
  - VM Ware

# ArcGIS Server Cloud Builder

Creating ArcGIS Server Sites on Amazon



# Migration to ArcGIS 10.1 for Server

## What to Expect…

- Architecture
  - No SOM/SOC model
  - ArcGIS Web Adapter
- Installation
  - Simpler (no post-installation)
  - Sites and clusters
- Services
  - No automatic migration (must re-create)
  - New Desktop tools and workflows
- Web Applications
  - No out-of-the-box wizard in Manager
- Management

# Migration to ArcGIS 10.1 for Server

## Checklist and Core Migration Steps

1. Check System Characteristics
2. Backup previously installed configuration file
3. Create a list of client apps that use the server
4. Verify that no clients use Local (DCOM) connections
5. Identify URL format used by client apps
6. Inventory existing services
7. Record all service properties
8. Note details of security configuration
9. Verify authorization and licensing information
10. Uninstall all ArcGIS (pre-10.1 Final) products
11. Install and Configure ArcGIS 10.1 for Server

# Migration to ArcGIS 10.1 for Server

## GIS Server and Services

- **Preserve your 10.0 server URL**
- **Republish Services**
- **Migrate map and globe caches**
- **Refactor legacy ArcObjects code** (see blog post: "*Considerations for ArcGIS Server developers: A look toward 10.1*")
- **Rebuild SOEs with 64-bit libraries**
- **Migrate Security settings**

| ArcGIS for Server Version | URL Example |
|---|---|
| 10 | `http://myserver.domain.com/citygis/rest/services/MyMapService/MapServer` |
| 10.1 | `http://myserver.domain.com:6080/arcgis/rest/services/MyMapService/MapServer` |

*NOTE: Use the ArcGIS Web Adaptor to preserve server URL.*

# Migration to ArcGIS 10.1 for Server

## Applications

- ArcGIS Server Manager  no longer builds web applications
- Migrate ADF-based applications to contemporary templates and viewers
- Leverage ArcGIS Online map viewer , webmaps and templates.

# Migration to ArcGIS 10.1 for Server

## FAQ

**Q:** In what order should I upgrade different ArcGIS 10.1 components?

**A:** If all ArcGIS for Desktop, Server and ArcSDE are installed on the same machine, everything must be migrated in one event. If not:

1. Upgrade a few ArcGIS for Desktop clients. Confirm upgrade process before upgrading remaining clients.
2. Upgrade ArcGIS for Server
3. Upgrade ArcSDE

# Migration to ArcGIS 10.1 for Server

## FAQ

**Q:** **Is there anything additional I can do to ensure my ArcGIS for Server upgrade will go smoothly?**

**A:** **Use proper IT change management processes and governance.**

**Development > Staging > Production**

# Best Practice: Development Environment

***Defined*: a limited scale and scope environment sufficient for the development of primary code and data modeling.**

- ***Key benefits & Esri approach to Development Environments*:**
  - **“the sandbox”**
  - **Supports developer creativity**
  - **Individual “build” environment**
  - **Expands the Esri technology landscape**

- **creatively develop new applications without the fear of impacting other systems.**

*With ArcGIS 10.1 for Server, no dedicated web server is needed!*

# Best Practice:  Staging Environment

***Defined*: a separate mirrored pre-production environment**

- ***Key benefits & Esri approach to Staging Environments*:**
  - **Allows insight into what may break with patching, software upgrades, & etc.**
  - **Promotes use of a QC/QA environment**
  - **Supports performance testing**
  - **Expands the Esri technology landscape**

- **Ensure stable, extensible, and high performing system**

*ArcGIS 10.1 for Sever migration calls for a staging environment.*

# Best Practice: High Availability Configuration

***Defined*: A design pattern that utilizes redundancy to ensure maximum uptime during a measurement period**

- ***Key benefits & Esri approach to High A*vailability:**
  - **Eliminate single points of failure**
  - **Maximizes uptime, minimizing unplanned outages**
  - **Meet SLAs**
  - **Maximizes the potential use of systems, networks, and services**

- **Ensure redundant, reliable, and high performing system**

*Which once was difficult for may users, ArcGIS 10.1 for Server with the Web Adaptor, makes it easy to configure a high availability site..*

# Best Practice: Server Segregation

***Defined:*** **separate server deployments by solution pattern.**

- ***Key benefits***
  - **reduced risks**
  - **better/more accurate service delivery**
  - **reduced system resource contention**

*Typically SLAs will often determine which server deployments need to be separated.*

*Create ArcGIS for Server sites and clusters according to solution patterns and system characteristics.*

# Best Practice: Publication Geodatabase

***Defined*: a publication geodatabase is a unique instance and version of a transactional enterprise geodatabase that is primary used to support the dissemination of geographic data, services and applications.**

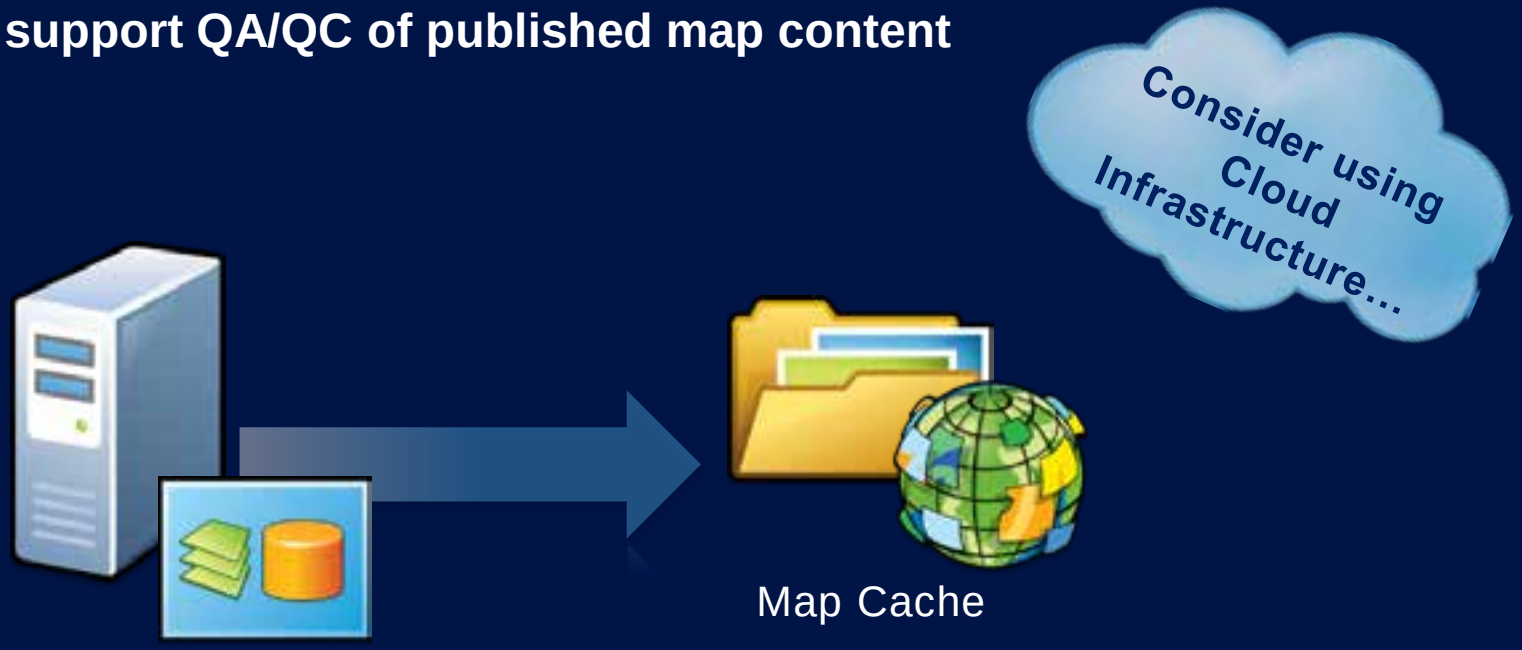
- ***Key benefits***
  - **improved performance**
  - **reduced data security risks**
  - **reduced system resource contention**

*Decouple contending usage patterns from a common enterprise geodatabase.*

# Best Practice:  Caching Server

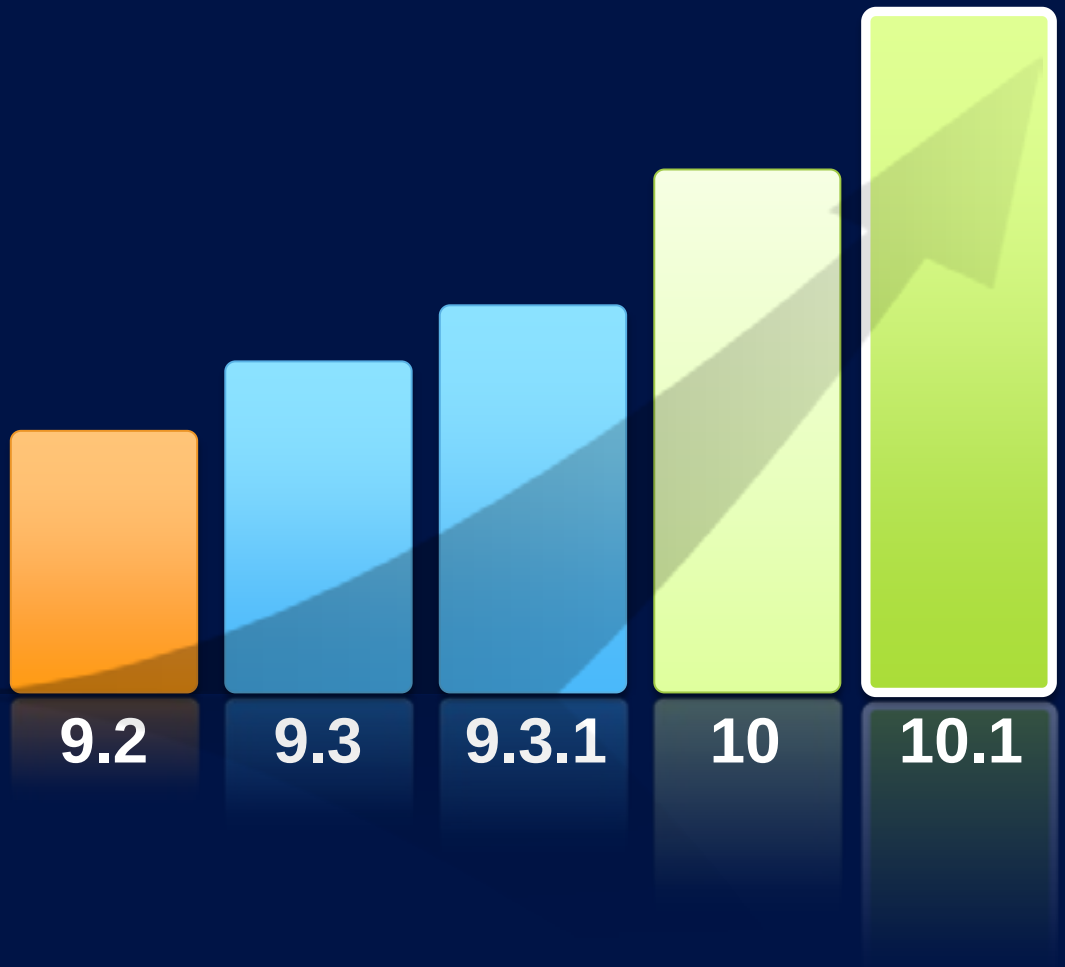
***Defined:*** **a separate server  to support map cache creation and maintenance.**

- ***Key benefits***
  - **reduced system resource contention**
  - **support QA/QC of published map content**




*For optimal performance with creating imagery base map caches, use Image Services .*

# ArcGIS 10.1 Server



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