

UC



# ArcGIS Enterprise: Managing ArcGIS Server

Derek Law

 @GIS\_Bandit

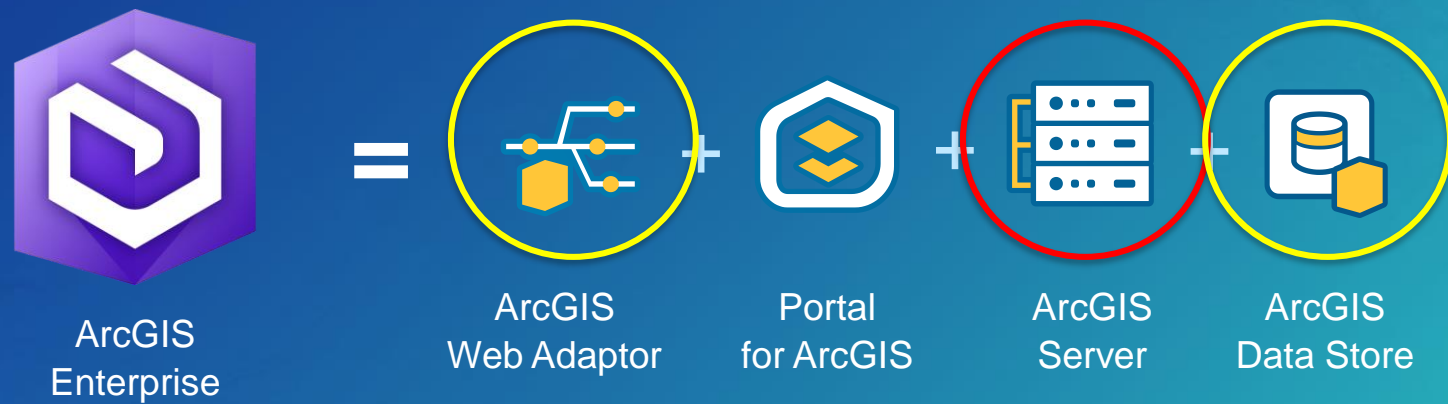
July 11, 2017

# Agenda

- ArcGIS Server usage patterns
- Understand the ArcGIS Server component
- ArcGIS Web Adaptor component
- Single and Multi-machine deployments of ArcGIS Server
- Explore ArcGIS Server Manager
  - ArcGIS Data Store component
- Server Administrator Directory
- ArcGIS Server Command Line utilities
- Upgrading an ArcGIS Server site
- Summary

# What is ArcGIS Enterprise?

## Conceptual Diagram





# Evolution of ArcGIS Server Usage Patterns

- **Server GIS**

- Stand alone ArcGIS Server
- Publish web services as resources for client apps

- **Web GIS**

- Part of a base deployment
- Deploy with Portal for ArcGIS + ArcGIS Data Store
- Enable **the complete capabilities of the ArcGIS Platform** in your own infrastructure



ArcGIS Server



Portal for ArcGIS



Hosting Server



ArcGIS Data Store

# ArcGIS Server – Component

- Easy install and configuration
  - Self contained, no external dependencies
- Built for resilience
- Designed for enterprise systems
- Works on physical machines or in the cloud
  - E.g., Amazon or Microsoft Azure
- Works with other ArcGIS Enterprise components
  - ArcGIS Web Adaptor
  - ArcGIS Data Store
  - Portal for ArcGIS
- Runs on Windows or Linux OS



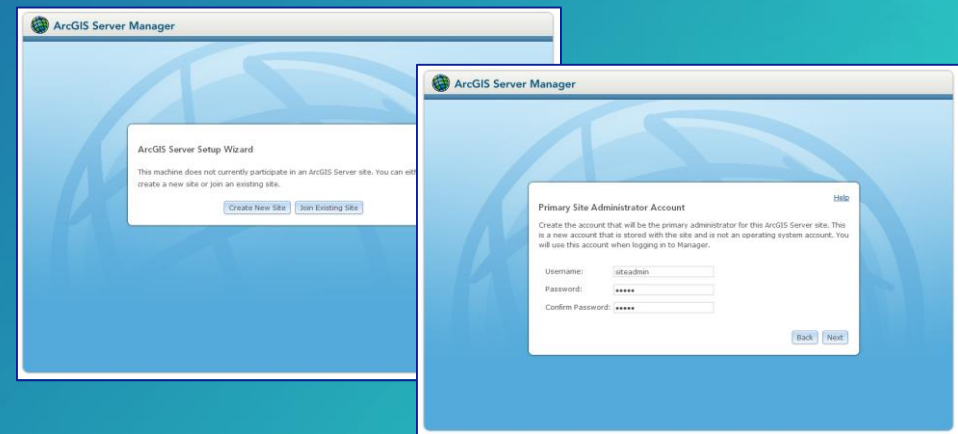
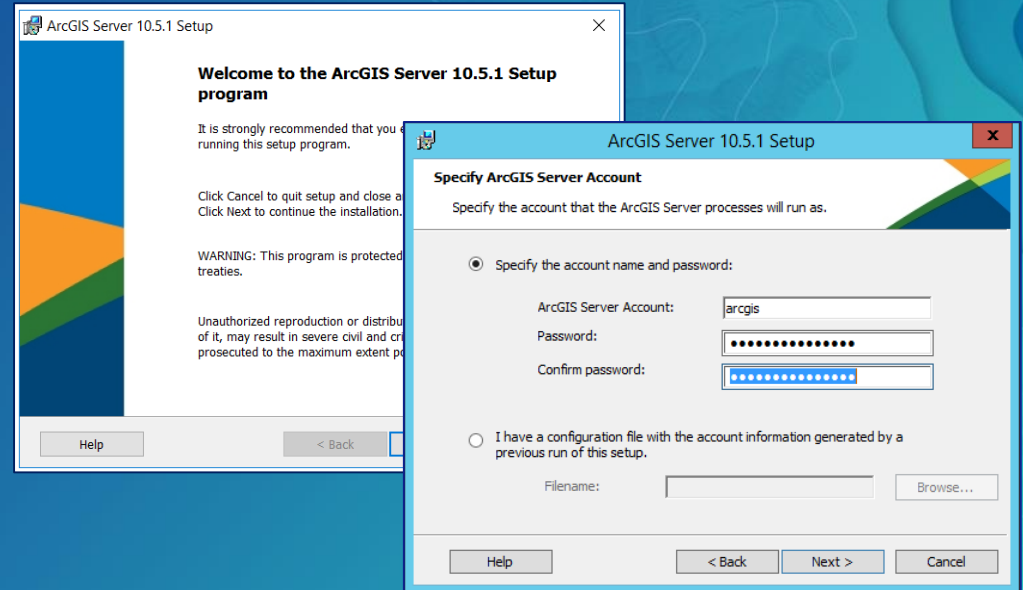
# Installing the ArcGIS Server Component

- Workflow

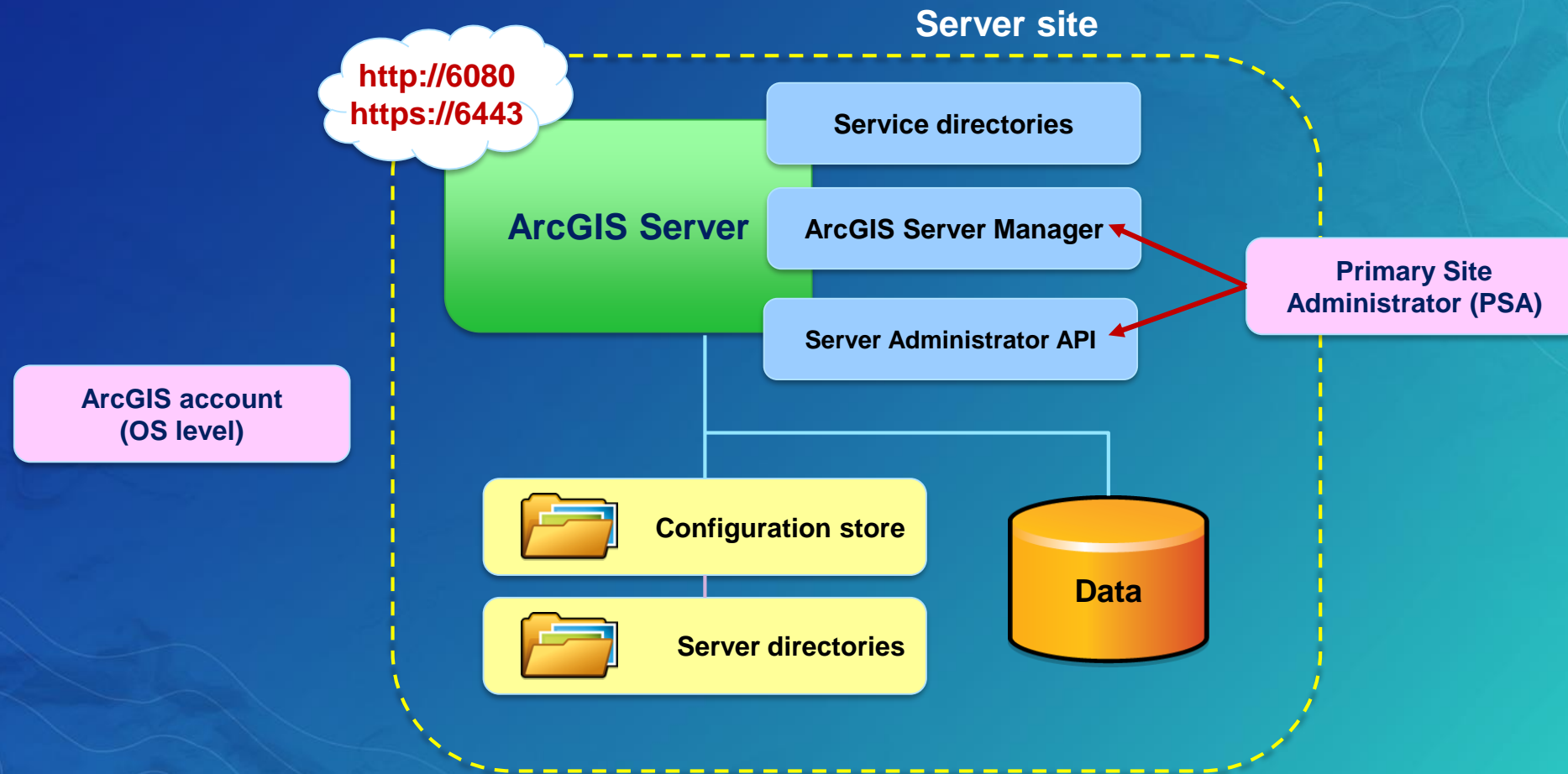
- Run installer
- Specify `arcgis` account
- Authorize the software
- Create new Server site
- Specify Primary Site Admin (PSA) account

- Optional

- Install ArcGIS Web Adaptor component



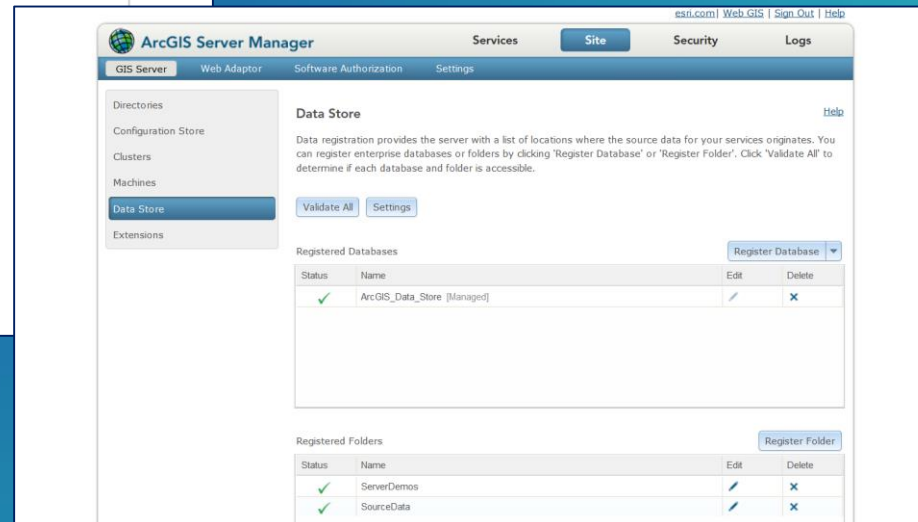
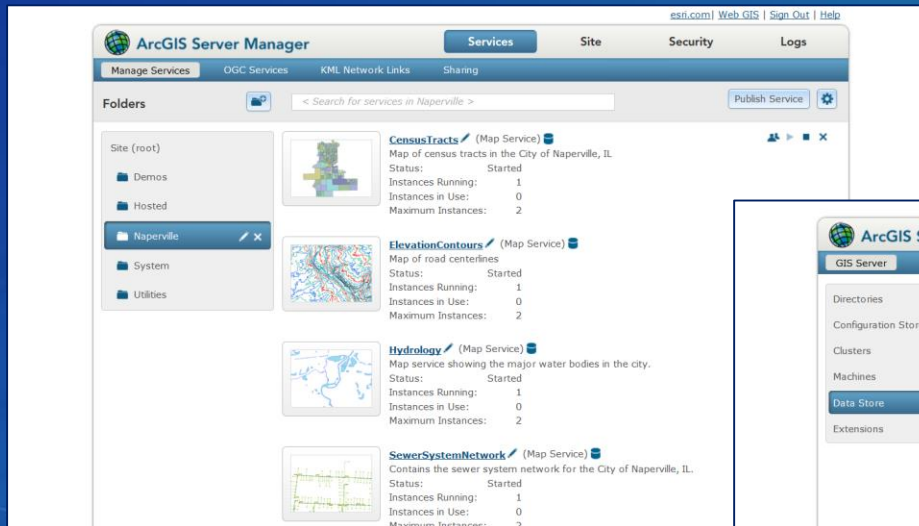
# ArcGIS Server Architecture





# ArcGIS Server Manager

- Web browser based **administrative console** to manage Server
  - Services, site management, security, reporting, and logs





# Server Administrator Directory

`https://<server name>:6080/arcgis/admin`

- Enables **scripting of Server administration tasks**
  - E.g., Join machine to a site, start/stop services, security, etc.
- Can be invoked from:
  - Python, Java, JavaScript, C#, PowerShell, Ruby, Scala, Perl, etc.

**ArcGIS Server Administrator Directory** Logged in: admin [Administrator] | [Signout](#)

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[Home](#) [API Reference](#)

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You should use [ArcGIS Server Manager](#) for managing services and GIS servers.  
The Administrator Directory is intended for advanced, programmatic access to the server, likely through the use of scripts.

**Site Root - /**

**Current Version: 10.5.1**

**Resources:** [machines](#) [clusters](#) [services](#) [security](#) [system](#) [data](#) [uploads](#) [logs](#) [kml](#) [info](#) [mode](#) [usagereports](#) [publicKey](#)

**Supported Operations:** [generateToken](#) [exportSite](#) [importSite](#) [deleteSite](#)

**Supported Interfaces:** [REST](#)

# Services Directory

- ArcGIS Services Directory **exposes GIS services**
  - <https://<servername>/ArcGIS/rest>

Server site



REST



ArcGIS REST Services Directory

[Home](#) > [services](#) > [Naperville](#)

[JSON](#) | [SOAP](#)

**Folder: Naperville**

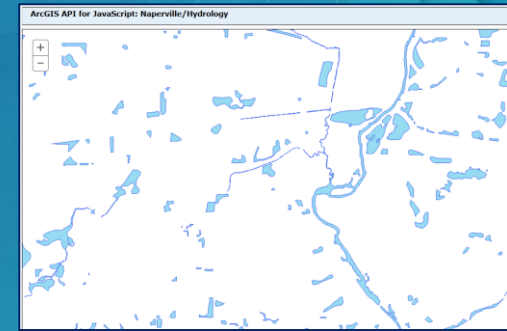
Current Version: 10.51

View Footprints In: [ArcGIS Online map viewer](#)

Services:

- [Naperville/CensusTracts](#) (MapServer)
- [Naperville/Hydrology](#) (MapServer)
- [Naperville/Streets](#) (MapServer)
- [Naperville/VegetationCover](#) (MapServer)
- [Naperville/WaterNetwork](#) (MapServer)

Supported Interfaces: [REST](#) [SOAP](#) [Sitemap](#) [Geo Sitemap](#)



ArcGIS REST Services Directory

[Home](#) > [services](#) > [Naperville](#) > [Hydrology \(MapServer\)](#)

[JSON](#) | [SOAP](#)

**Naperville/Hydrology (MapServer)**

View In: [ArcGIS JavaScript](#) [ArcGIS Online map viewer](#) [Google Earth](#) [ArcMap](#) [ArcGIS Explorer](#)

View Footprint In: [ArcGIS Online map viewer](#)

Service Description: This map service displays the major water bodies within the city limits.

Map Name: Layers

[Legend](#)

[All Layers and Tables](#)

# ArcGIS Server Site – Concepts

- **arcgis account** → OS level account (local or domain), used by ArcGIS Server
  - Created when you install ArcGIS Server software
- **Primary Site Administrator (PSA) account** → Server site level account
  - Created after software install, when you create new Server site
- Key components:
  - **Configuration Store**
    - Contains all the essential properties of the site
  - **Server directories**
    - Locations on disk where the server writes information
    - 4 directories: cache, jobs, output, and system
  - **Both should be located in redundant storage location(s)**



**Configuration store**



**Server directories**

# ArcGIS Server Site Ports

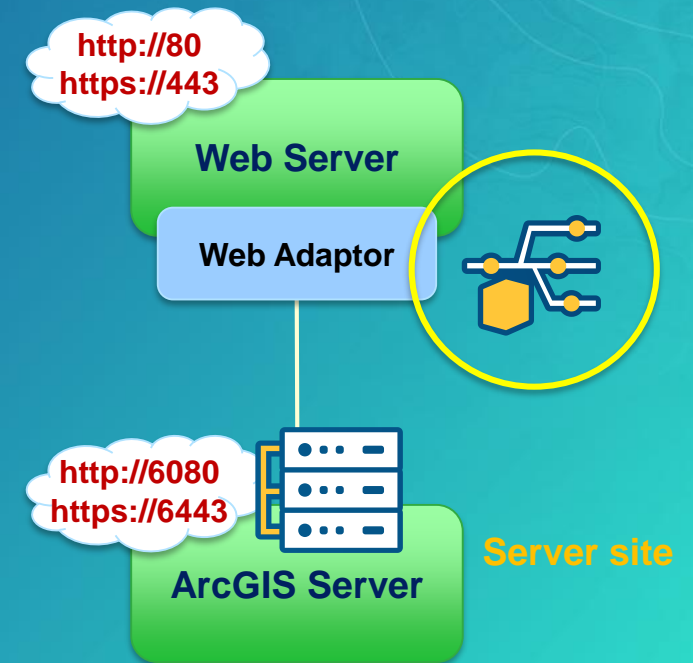
- Port → communication endpoint used by ArcGIS Server
- Port # → identifies port internet protocol (IP) address
- Default installation
  - ArcGIS Server uses **port 6080**
  - ArcGIS Web Adaptor uses web server port (e.g., IIS **port 80**)
- Secure installation (HTTPS)
  - **ArcGIS Server uses port 6443 (default)**
  - ArcGIS Web Adaptor uses web server port (e.g., IIS **port 443**)



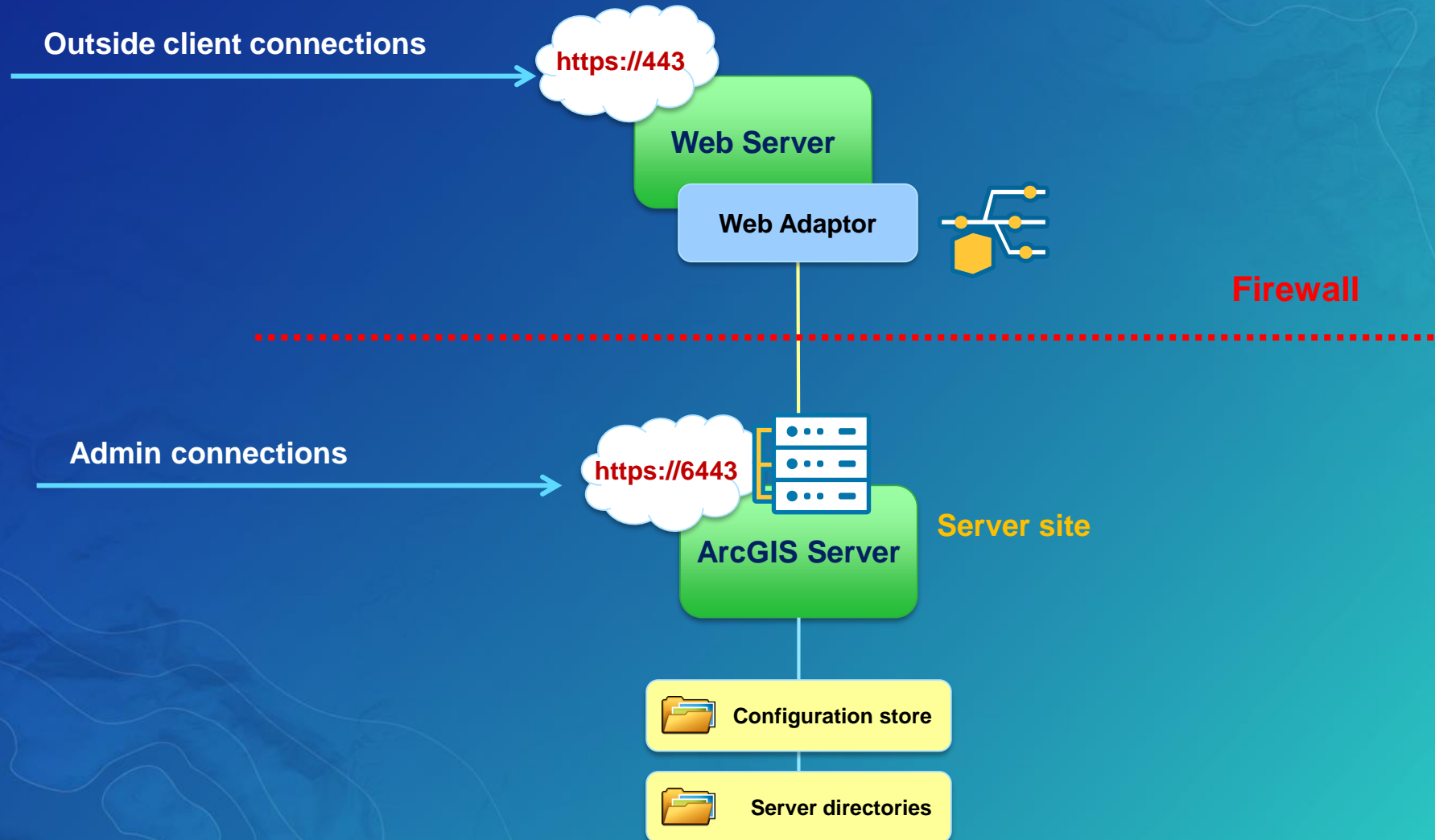


# ArcGIS Web Adaptor – Component

- Enables ArcGIS Server to work with 3<sup>rd</sup> party web server
  - E.g., Microsoft IIS, IBM Web Sphere, etc.
- Leverage web server features
- Enables web-tier authentication
- Provides more flexibility to control site access
- Conceptually like a reverse proxy
- Optional, **but recommended** component for ArcGIS Server
  - Separate software install

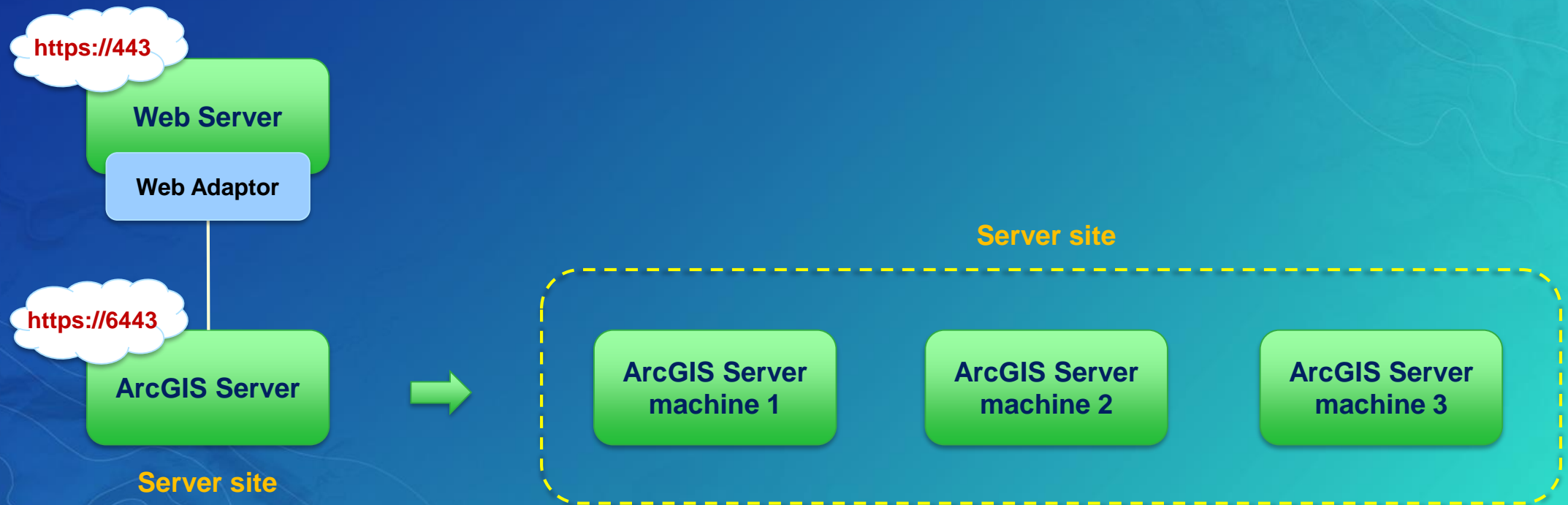


# ArcGIS Server Architecture with Web Adaptor

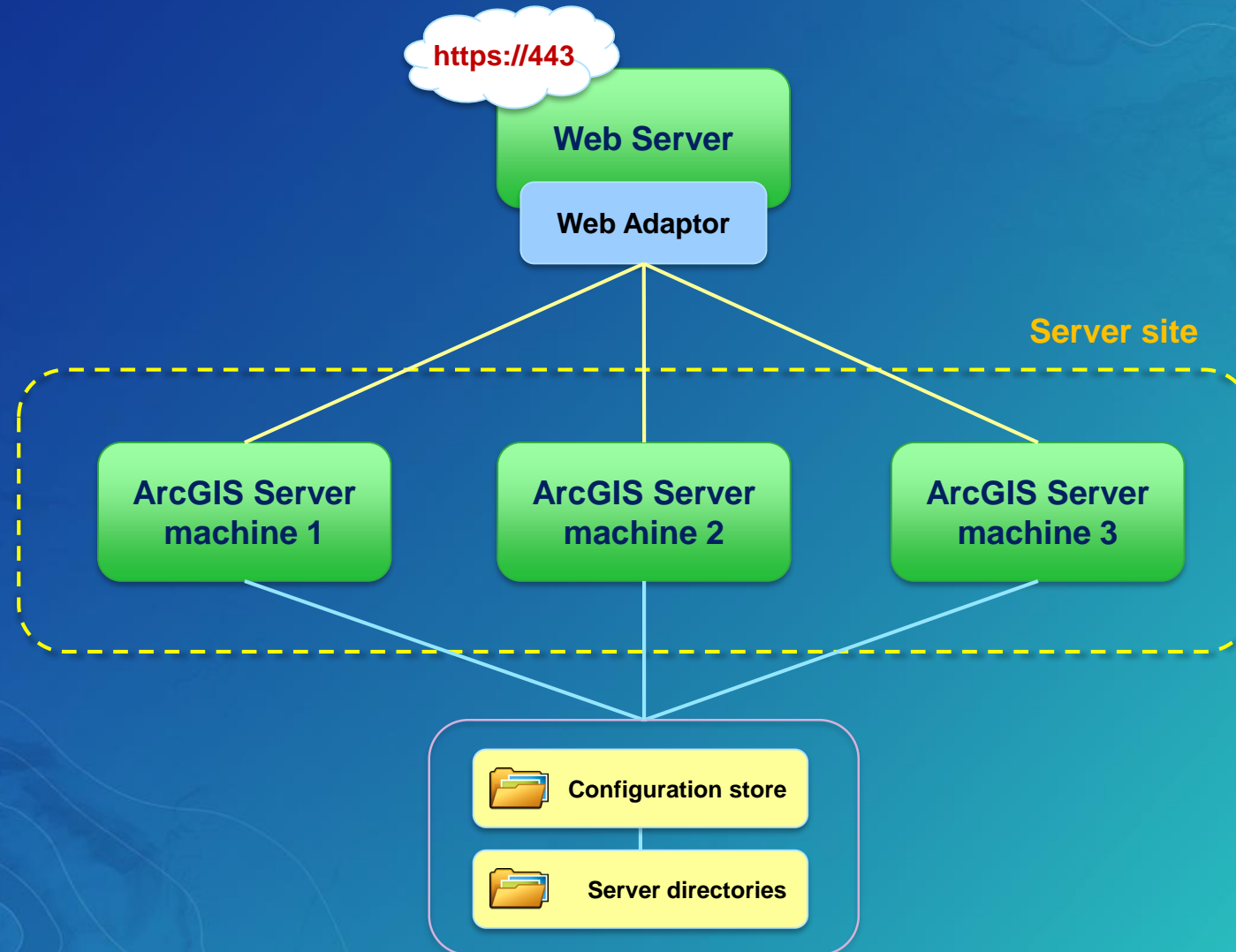


# Single vs. Multi-Machine Deployment – ArcGIS Server

- May want to scale ArcGIS Servers for very active Server sites
  - Deploy enough resources to meet demand



# Multi-Machine Deployment – ArcGIS Server





# Evolution of ArcGIS Server Usage Patterns

- **Server GIS**

- Stand alone ArcGIS Server
- Publish web services as resources for client apps



ArcGIS Server

- **Web GIS**

- Part of a base deployment
- Deploy with Portal for ArcGIS + ArcGIS Data Store
- Enable **the complete capabilities of the ArcGIS Platform** in your own infrastructure



Portal for ArcGIS



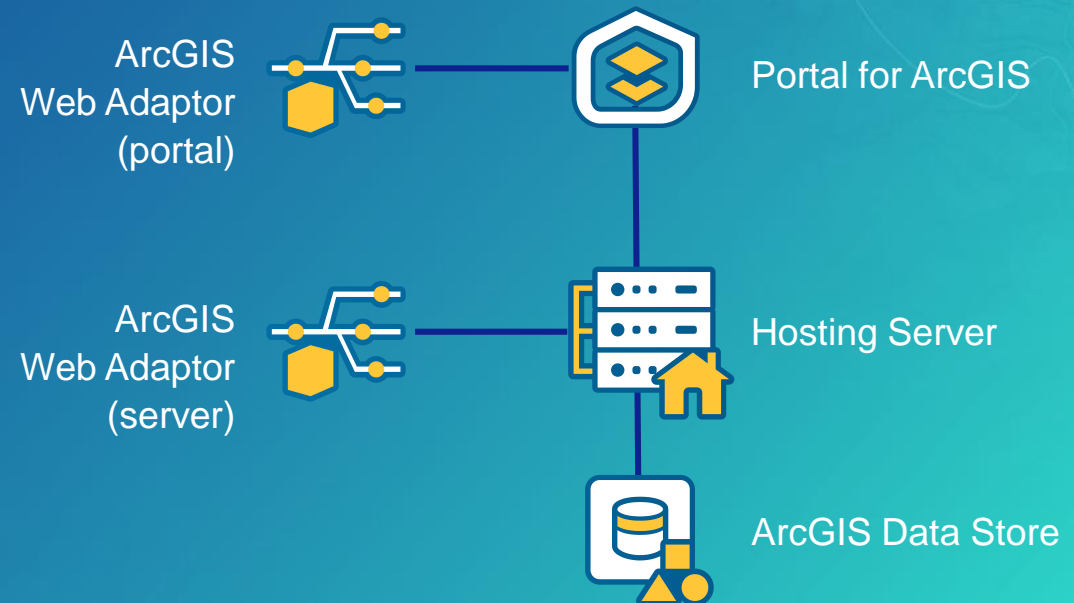
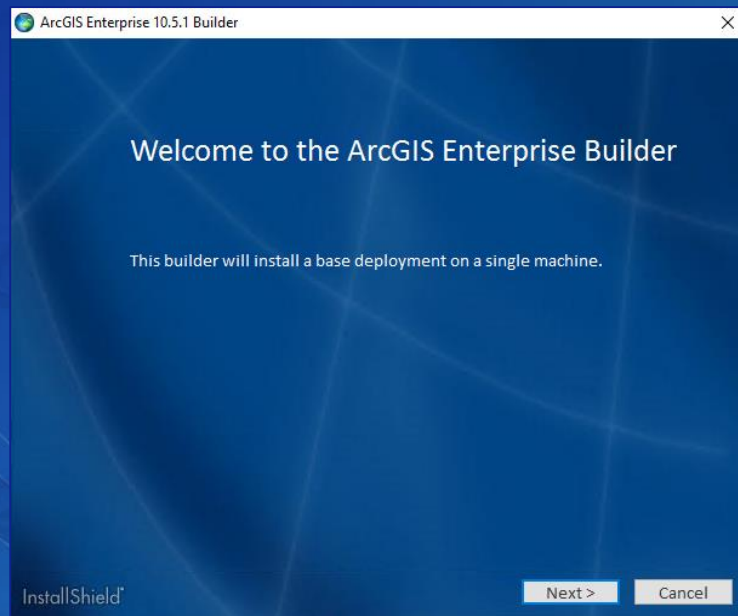
Hosting Server



ArcGIS Data Store

# Installing ArcGIS Server as part of Web GIS

- At 10.5.1, to install Web GIS easily, you can use **ArcGIS Enterprise Builder**
- Wizard that installs the base deployment on a single machine



# ArcGIS Server Roles

- The ArcGIS Server component can be licensed to do different types of work

software  
component

the thing you install



ArcGIS  
Server

server capabilities

what it can do



GIS  
Server



Image  
Server



GeoEvent  
Server



GeoAnalytics  
Server



Business  
Analyst  
Server

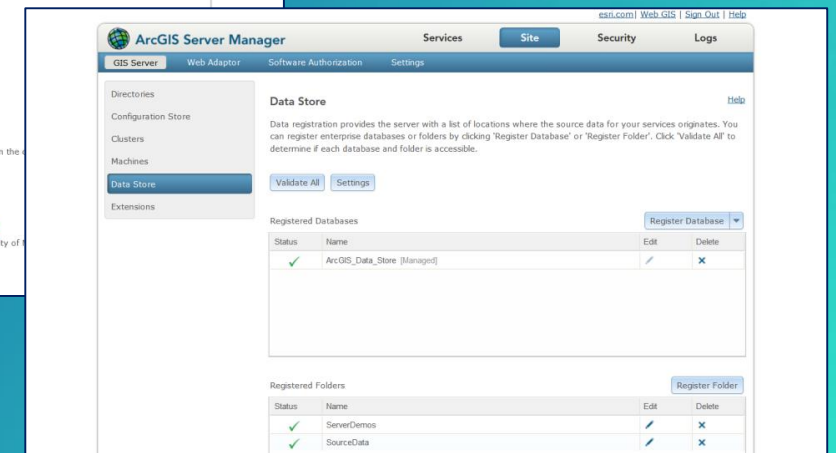
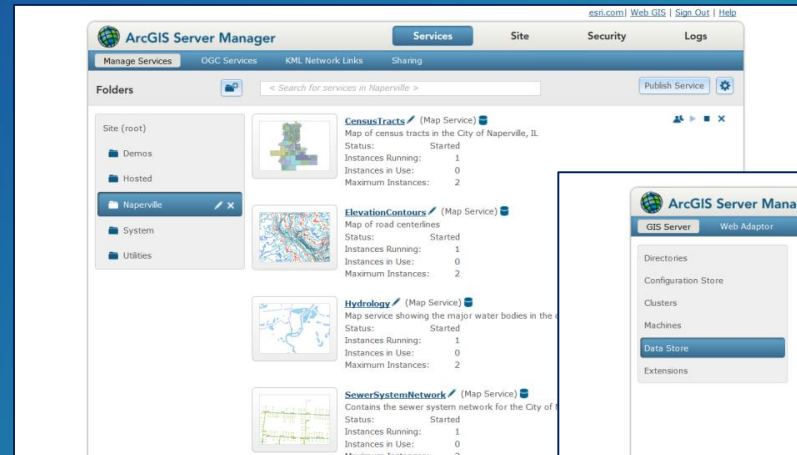
## Learn More – Other Sessions

- **ArcGIS Web Adaptor Basics**
  - Wed July 12      12:30 pm      SDCC Demo Theater 8 – Enterprise
- **Building Your First ArcGIS Enterprise Deployment**
  - Tues July 11      4:30 pm      SDCC Demo Theater 8 – Enterprise
  - Wed July 12      5:30 pm      SDCC Demo Theater 8 – Enterprise
- **ArcGIS Enterprise: Architecting Your Deployment**
  - Wed July 12      10:15 am      Hilton – Sapphire Ballroom A
  - Wed July 12      1:30 pm      SDCC – Room 9



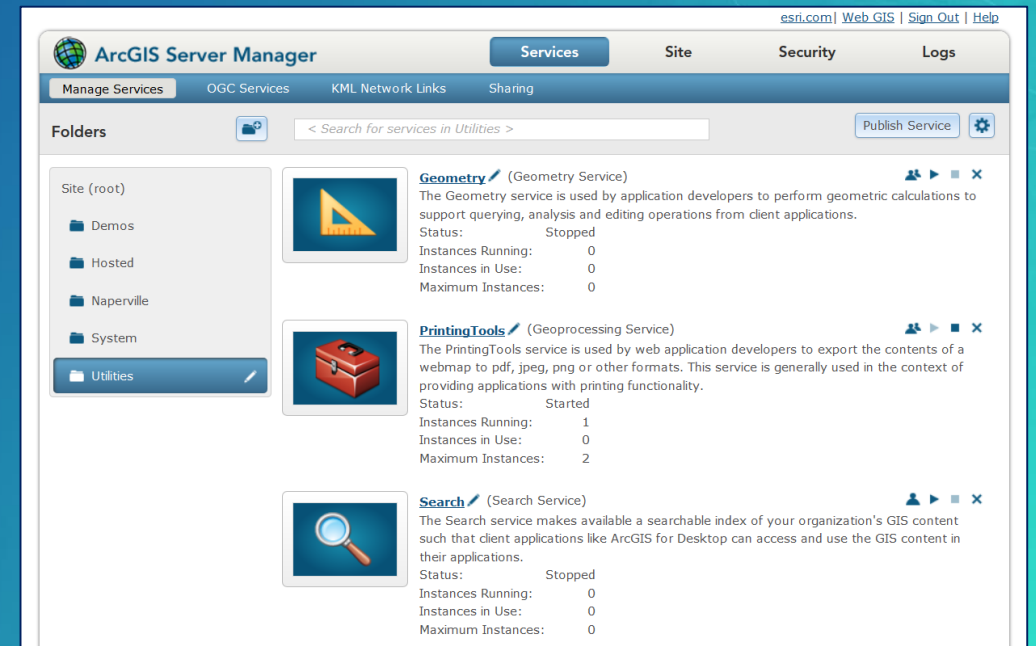
# Explore ArcGIS Server Manager

- Web browser based **administrative console** to manage Server
  - Pre-installed web services
  - Discuss ArcGIS Server “data store” concept vs. the *ArcGIS Data Store component*
  - ArcGIS Server security – basics
  - Service usage statistics
  - Server logging



# Pre-Installed Web Services

- ArcGIS Server includes 18 “*out-of-the box*” web services
  - In *System* and *Utilities* folders
  - Provided to help support many common workflows
- A sample map service is also included
  - *SampleWorldCities*
- **Strongly recommend: Do not modify**



## Notable built in GP services



- **PublishingTools** → Enables publishing service definition files in Manager
- **CachingTools** → Helps to create caches (map, globe, image services)
- **PrintingTools** → Enables custom print layouts to be used in web apps
  - Publish custom layouts from ArcMap, enable in your web app clients
- **SpatialAnalysisTools** → Powers analysis functionality in Portal map viewer
  - Requires base deployment (Portal for ArcGIS + ArcGIS Data Store)
  - Introduced at 10.4

# Web Service Properties

- Click on a web service to configure its properties
- Set capabilities, resources, item description, etc.



esri.com | Web GIS | Sign Out | Help

ArcGIS Server Manager **Services** Site Security Logs

Manage Services OGC Services KML Network Links Sharing

Editing: Site (root) > Naperville > CensusTracts [Help](#) Save and Restart Cancel

General  
Parameters  
**Capabilities**  
Pooling  
Processes  
Caching  
Item Description

Select and configure capabilities

Mapping (always enabled)  Schematics  
 WCS  WFS  
 Network Analysis  KML  
 WMS  Feature Access  
 Mobile Data Access

Interceptors  
Enable server object interceptors for this service by adding or removing them from the list. The order of interceptor execution can be controlled by moving them up or down.

Available Interceptors Enabled Interceptors

Layer Access SOI  
Watermark SOI

esri.com | Web GIS | Sign Out | Help

ArcGIS Server Manager **Services** Site Security Logs

Manage Services OGC Services KML Network Links Sharing

Editing: Site (root) > Naperville > CensusTracts [Help](#) Save and Restart Cancel

General  
Parameters  
Capabilities  
**Pooling**  
Processes  
Caching  
Item Description

Specify Number of Instances

Minimum number of instances per machine:   
Maximum number of instances per machine:

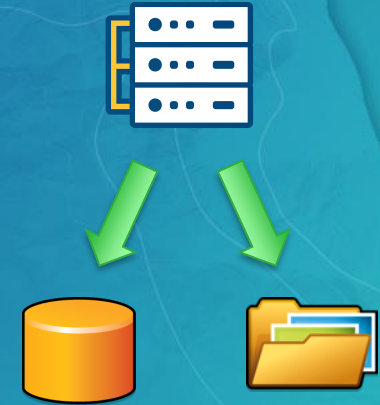
Specify Service Timeouts

The maximum time a client can use a service:  seconds  
The maximum time a client will wait to get a service:  seconds  
The maximum time an idle instance can be kept running:  seconds



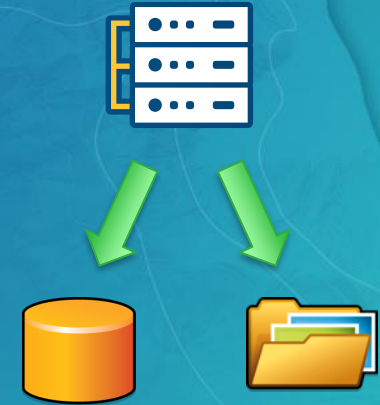
# Understanding Data Stores

- **ArcGIS Server “data store” concept**
  - Valid location that contains data used for web services
  - Read/write by the `arcgis` account
- **ArcGIS Data Store – Component**
  - Separate software install included with ArcGIS for Server (since 10.3)
  - Part of the Web GIS deployment configuration



# Understanding Data Stores

- ArcGIS Server “data store” concept
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# Review: Publishing GIS Web Services

- **ArcMap** publishes directly to ArcGIS Server



- **ArcGIS Pro** shares to a portal (ArcGIS Online or Portal for ArcGIS)
  - Does NOT directly publish to ArcGIS Server



# Review: Publishing in ArcMap

Author



Analyze



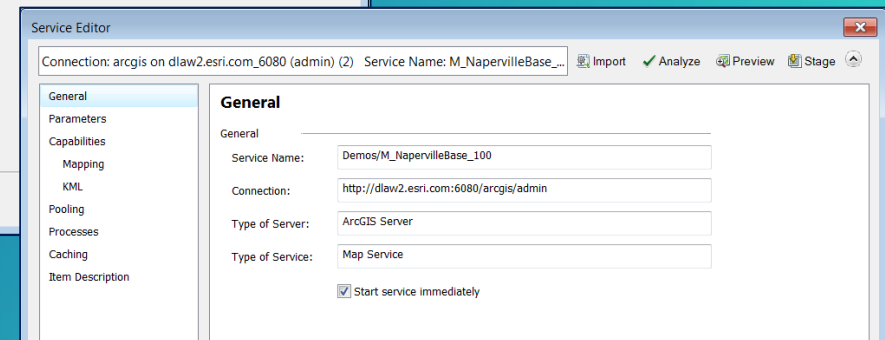
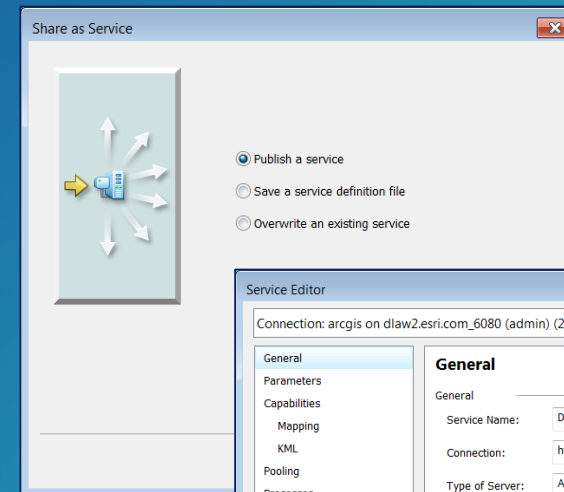
GIS service



Service definition file

Defines service schema, can contain data  
Can be used to publish service later

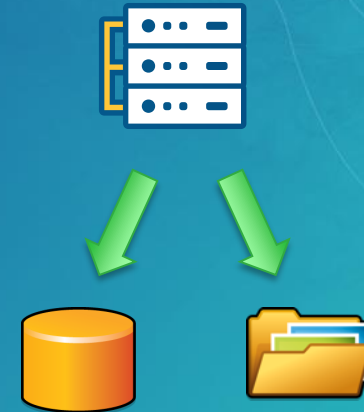
- **Share As Service** wizard
  - Publish GIS service
  - Create service definition file
  - Overwrite an existing GIS service
- **Service Editor**
  - Defines GIS service properties
- **Analyze map for optimization**
  - Fix errors and address warnings





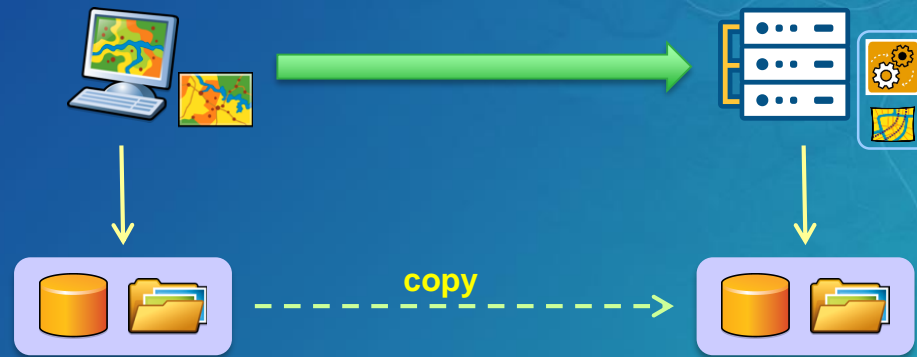
# ArcGIS Server “data store” Concept

- Valid data source locations accessible by Server site
- 2 types
  1. Databases
  2. Folders
- 2 ways to define
  - ArcGIS Server Manager
  - ArcMap



# Data Registration Workflow

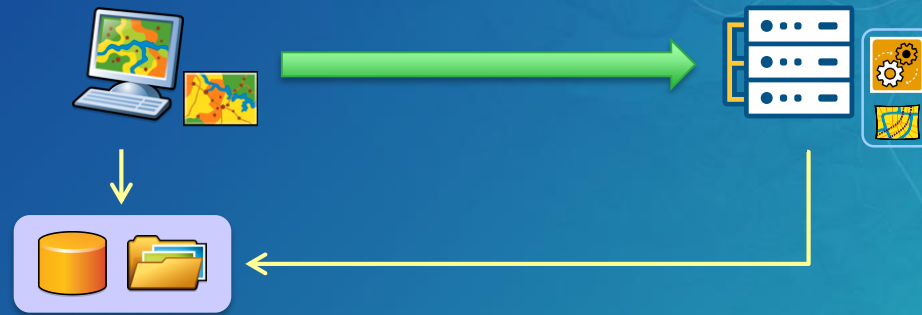
## 1. Copy the data



- Default option, easy user experience
- Source data is copied to the server machine
- Does not support data updates
- Option to “block copying” in ArcGIS Server Manager

# Data Registration Workflow

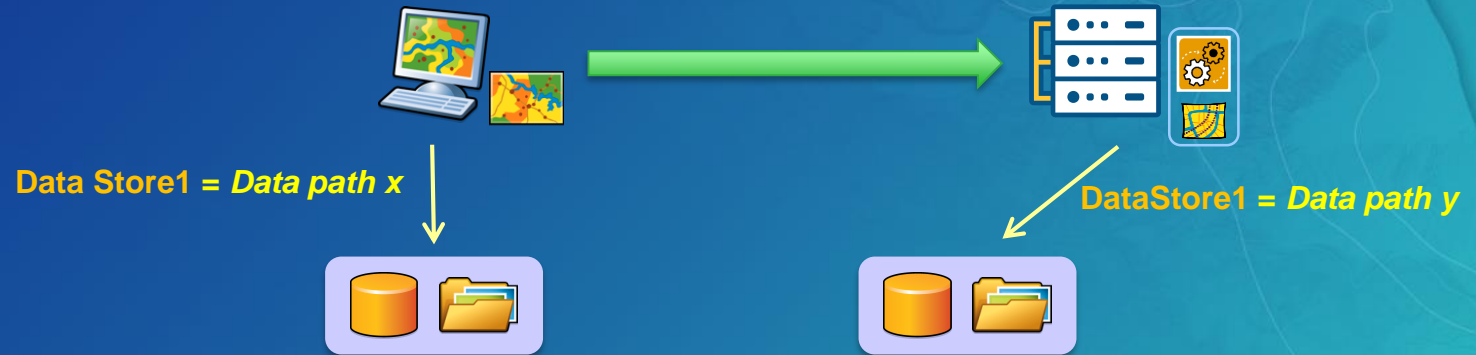
## 2. Reference the data



- Need to define a “data store”
  - Valid data source locations accessible by Server site
- Source data is not copied
- Supports data updates

# Data Registration Workflow

## 3. Replace data path

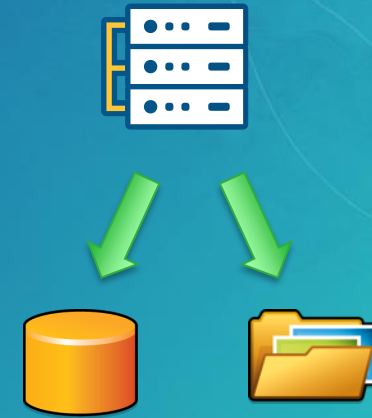


- Supports secure workflows
- Need to have 2 copies of your data, additional management
- Does not support data updates



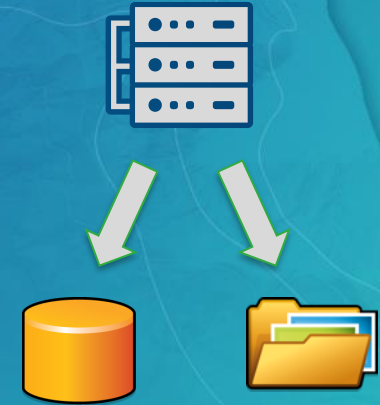
# ArcGIS Server “data store” Concept

- Relates to publishing GIS resources to ArcGIS Server
- Valid data source locations accessible by Server site
- 2 types
  1. Databases
  2. Folders
- Used to support data registration workflows
  - Publish by referencing the data
  - Publish by replacing data path



# Understanding Data Stores

- ArcGIS Server “data store” concept
  - Valid location that contains data used for web services
  - Read/write by the `arcgis` account
- **ArcGIS Data Store – Component**
  - Separate software install included with ArcGIS for Server (since 10.3)
  - Part of the Web GIS deployment configuration



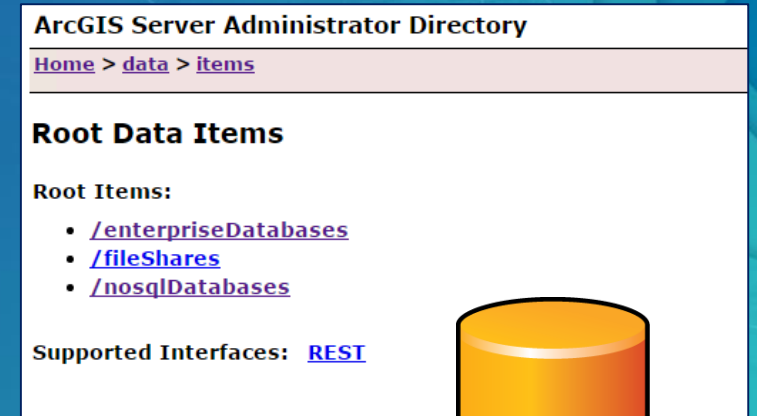
# ArcGIS Data Store – Component

- Part of ArcGIS Enterprise base deployment
- Enables
  - Scalable hosted feature services
  - 3D scene services
  - Analysis tools in Portal map viewer
- Supports highly availability deployment
- Supports Backup and Recovery
- **Separate software install**



# ArcGIS Data Store – Component

- Can have 3 types of ArcGIS Data Store
  1. **Relational**
    - For hosted feature services
  2. **Tile Cache**
    - For scene services (3D web services)
  3. **Spatialtemporal**
    - Used to archive high volume data from GeoEvent and GeoAnalytics extension
- You decide which type(s) to use when you install the ArcGIS Data Store
  - Depends on your business requirements



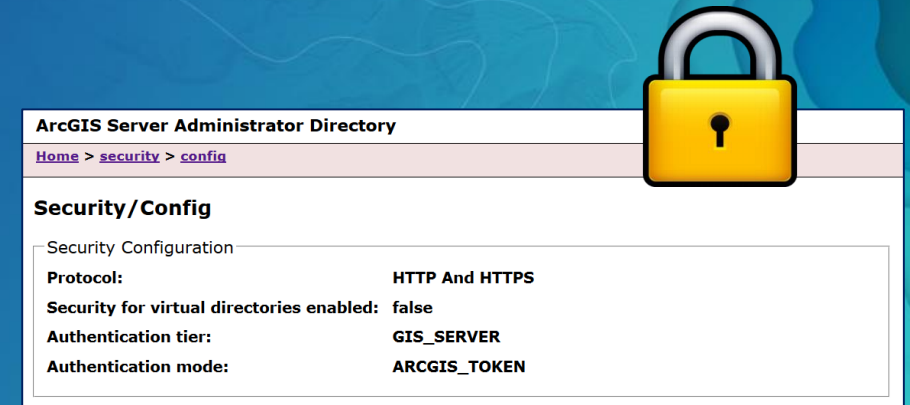


## Learn More – Other Sessions

- **Data Store Management Best Practices**
  - Wed July 12      9:30 am      SDCC Demo Theater 8 - Enterprise

# ArcGIS Server Security – Basics

- Default installation is set to “HTTP and HTTPS”
  - Since 10.4
  - ArcGIS Server uses `port 6443`
- Designed to work with your Enterprise systems
  - Many security options available
- In base deployment, it is **federated with Portal**
  - ArcGIS Server uses the security model used by Portal



## 2 Key Security Concepts

- **Authentication** → The security protocol to check and verify a user
  - ArcGIS Server offers 2 options: Web tier vs. GIS tier
- **Authorization** → What a user is permitted to do in the Server site



# ArcGIS Server Access and Authorization

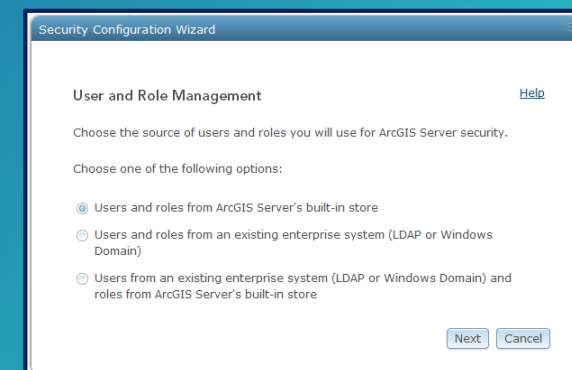
- **User** → Valid login to access
- **Role** → Grouping of users
  - 3 types
    1. **Administrators** – Full admin control
    2. **Publishers** – Publish web services
    3. **Users** – View web services
- **Identity store** → Defines your users and roles
  - User store + Role store





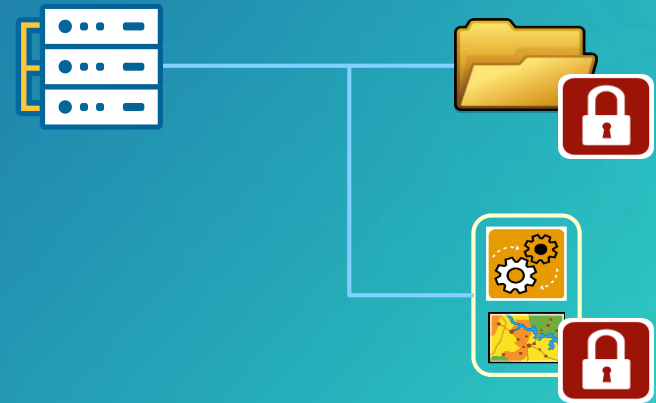
# ArcGIS Server: Identity Store

- **Identity Store** → Defines your users and roles
- 3 different options
  1. **Built-in** (default)
  2. **Register with an enterprise identity store**
    - Windows Active Directory
    - LDAP
    - **Requires ArcGIS Web Adaptor component**
  3. **“Mixed mode”**
    - Users from enterprise identity store
    - Roles from built-in store



# Securing GIS Web Services

- Set permissions for roles on folders and services
  - Administrators/Publishers grant permissions
- All new services are public by default
  - Anonymous access
- Ensure you set appropriate security on them

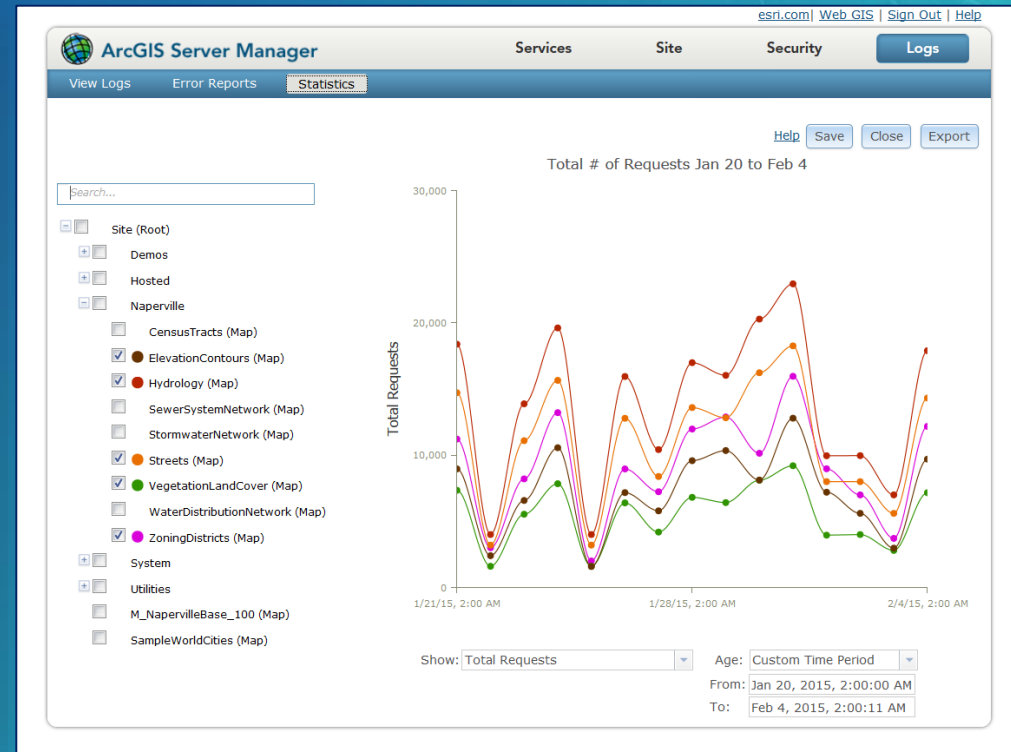
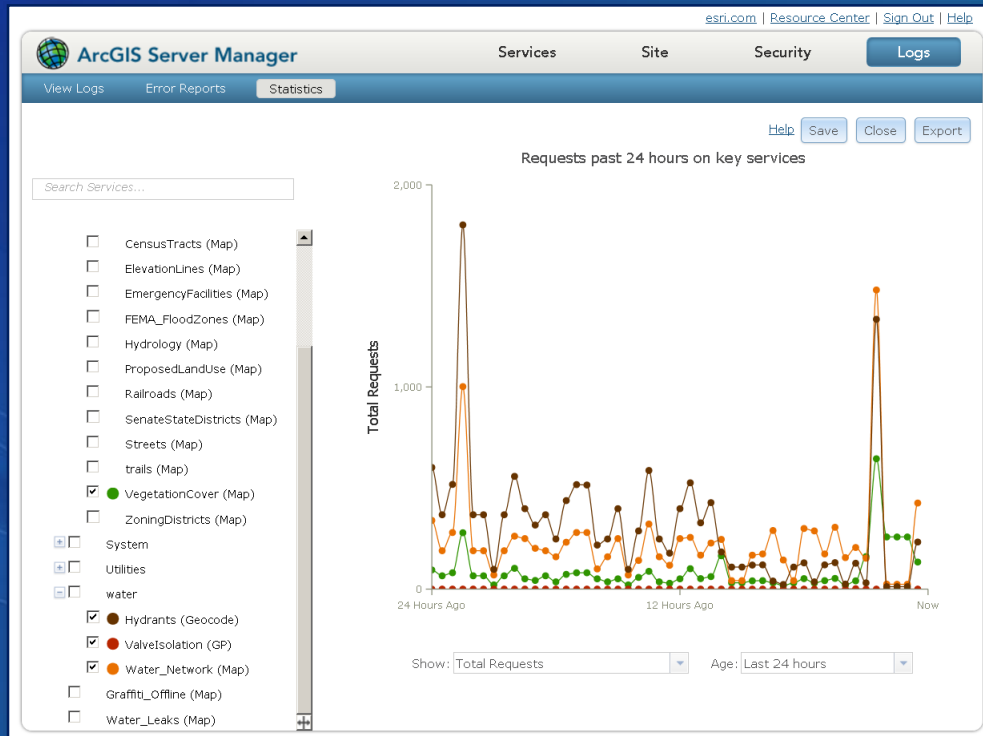


## Learn More – Other Sessions

- **ArcGIS Enterprise Security: An Introduction**
  - ~~Tues July 11~~ 10:15 am ~~SDCC Room 16B~~
  - Thurs July 13 8:30 am SDCC Room 14A
- **ArcGIS Enterprise Security: Advanced Topics**
  - ~~Tues July 11~~ 1:30 pm ~~SDCC Room 16B~~
  - Thurs July 13 10:15 am SDCC Room 14A

# ArcGIS Server – Service Usage Statistics

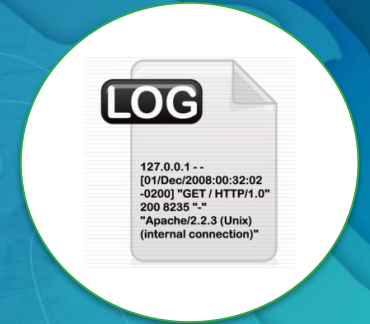
- View and create reports showing web service usage
- Monitor total requests, average response time(s), and timeouts





# ArcGIS Server Logging

- View log messages in ArcGIS Server Manager
- Specify log level, # of days to keep log on disk, log directory, etc.



esri.com | Web GIS | Sign Out | Help

ArcGIS Server Manager Services Site Security **Logs**

View Logs Error Reports Statistics

Printer Friendly View | Help Columns Delete Logs Settings

### View Log Messages

View log messages by querying based on the level, age and source of the messages and clicking Query.

Change the level of detail that the log messages are generated at by clicking Settings.

Log Filter:  Age:  Source:  Machine:

Level	Time	Message	Source
INFO	Jun 15, 2016, 7:10:19 PM	Creating instance of service 'Demos/CAEmergency.MapServer'.	Demos/CAEmergency.MapServer
INFO	Jun 15, 2016, 7:10:19 PM	Creating instance of service 'Demos/ValveIsolationGPTask.GPServer'.	Demos/ValveIsolationGPTask.GPServer
INFO	Jun 15, 2016, 7:10:18 PM	Creating instance of service 'Naperville/WaterDistributionNetwork.MapServer'.	Naperville/WaterDistributionNetwork.MapServer
INFO	Jun 15, 2016, 7:10:17 PM	Creating instance of service 'System/SpatialAnalysisTools.GPServer'.	System/SpatialAnalysisTools.GPServer
INFO	Jun 15, 2016, 7:10:16 PM	Creating instance of service 'Demos/Hydrant_Locator.GeocodeServer'.	Demos/Hydrant_Locator.GeocodeServer
INFO	Jun 15, 2016, 7:10:16 PM	Creating instance of service 'Naperville/Hydrology.MapServer'.	Naperville/Hydrology.MapServer
INFO	Jun 15, 2016, 7:10:16 PM	Creating instance of service 'Naperville/VegetationLandCover.MapServer'.	Naperville/VegetationLandCover.MapServer

# Server Administrator Directory

`https://<server name>:6080/arcgis/admin`

- Enables **scripting of Server administration tasks**
  - E.g., Join machine to a site, start/stop services, security, etc.
- Can be invoked from:
  - Python, Java, JavaScript, C#, PowerShell, Ruby, Scala, Perl, etc.

**ArcGIS Server Administrator Directory** Logged in: admin [Administrator] | [Signout](#)

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[Home](#) [API Reference](#)

---

You should use [ArcGIS Server Manager](#) for managing services and GIS servers.  
The Administrator Directory is intended for advanced, programmatic access to the server, likely through the use of scripts.

**Site Root - /**

**Current Version: 10.5.1**

**Resources:** [machines](#) [clusters](#) [services](#) [security](#) [system](#) [data](#) [uploads](#) [logs](#) [kml](#) [info](#) [mode](#) [usagereports](#) [publicKey](#)

**Supported Operations:** [generateToken](#) [exportSite](#) [importSite](#) [deleteSite](#)

**Supported Interfaces:** [REST](#)

# Change Security Setting of ArcGIS Server



- Switch from “HTTP and HTTPS” to “HTTP” or “HTTPS only”
- **Security > config > update**
  - Change protocol option

**ArcGIS Server Administrator Directory**

[Home](#) > [security](#) > [config](#) > [update](#)

### Update Security Configuration

**Warning**  
Changing Protocol will cause the web server to be restarted.

Security Configuration

**Protocol:** HTTP and HTTPS

**SSL Protocols:**

**SSL Cipher Suites:**

Virtual directories security enabled:

# Disable the Services Directory

- ArcGIS Services Directory exposes GIS web services
  - <https://<FullyQualifiedMachinename>/ArcGIS/rest>
- Recommend to NOT expose GIS web services



REST

## Before

ArcGIS REST Services Directory

[Home](#) > [services](#) > [Naperville](#)

[JSON](#) | [SOAP](#)

**Folder: Naperville**

Current Version: 10.51

View Footprints In: [ArcGIS Online map viewer](#)

Services:

- [Naperville/CensusTracts](#) (MapServer)
- [Naperville/Hydrology](#) (MapServer)
- [Naperville/Streets](#) (MapServer)
- [Naperville/VegetationCover](#) (MapServer)
- [Naperville/WaterNetwork](#) (MapServer)

Supported Interfaces: [REST](#) [SOAP](#) [Sitemap](#) [Geo Sitemap](#)



## After

ArcGIS REST Framework

[Home](#)

**Error:** Services Directory has been disabled.  
**Code:** 403



# How to Disable the Services Directory

- Server Administrator Directory
  - System > Handlers > Rest > Servicesdirectory > edit
  - Uncheck *Services Directory Enabled* option
- Help topic: [Disable the Services Directory](#)

**ArcGIS Server Administrator Directory** Logged in: 0123456789ABCDEF::Administrator [Administrator] | [Signout](#)

[Home](#) > [system](#) > [handlers](#) > [rest](#) > [servicesdirectory](#) [API Reference](#)

### Services Directory

Services Directory : Enabled.

AllowedOrigins : \*

Javascript API URL : <http://js.arcgis.com/3.15/init.js>

Javascript API SDK URL : <http://help.arcgis.com/en/webapi/javascript/arcgis/>

Javascript API CSS URL : <http://js.arcgis.com/3.15/dijit/themes/tundra/tundra.css>

Javascript API CSS2 URL : <http://js.arcgis.com/3.15/esri/css/esri.css>

ArcGIS.com Map Text : ArcGIS Online map viewer

ArcGIS.com URL : <http://www.arcgis.com/home/webmap/viewer.htm>

Supported Operations: [edit](#)

**ArcGIS Server Administrator Directory** Logged in: 0123456789ABCDEF::Administrator [Administrator] | [Signout](#)

[Home](#) > [system](#) > [handlers](#) > [rest](#) > [servicesdirectory](#) > [edit](#) [API Reference](#)

### Edit Services Directory

Edit Services Directory

Services Directory Enabled :

AllowedOrigins : \*

Javascript API URL : <http://js.arcgis.com/3.15/init.js>

Javascript API SDK URL : <http://help.arcgis.com/en/webapi/javascript/arcgis/>

Javascript API CSS URL : <http://js.arcgis.com/3.15/dijit/themes/tundra/tundra.css>

Javascript API CSS2 URL : <http://js.arcgis.com/3.15/esri/css/esri.css>

ArcGIS.com Map Text : ArcGIS Online map viewer

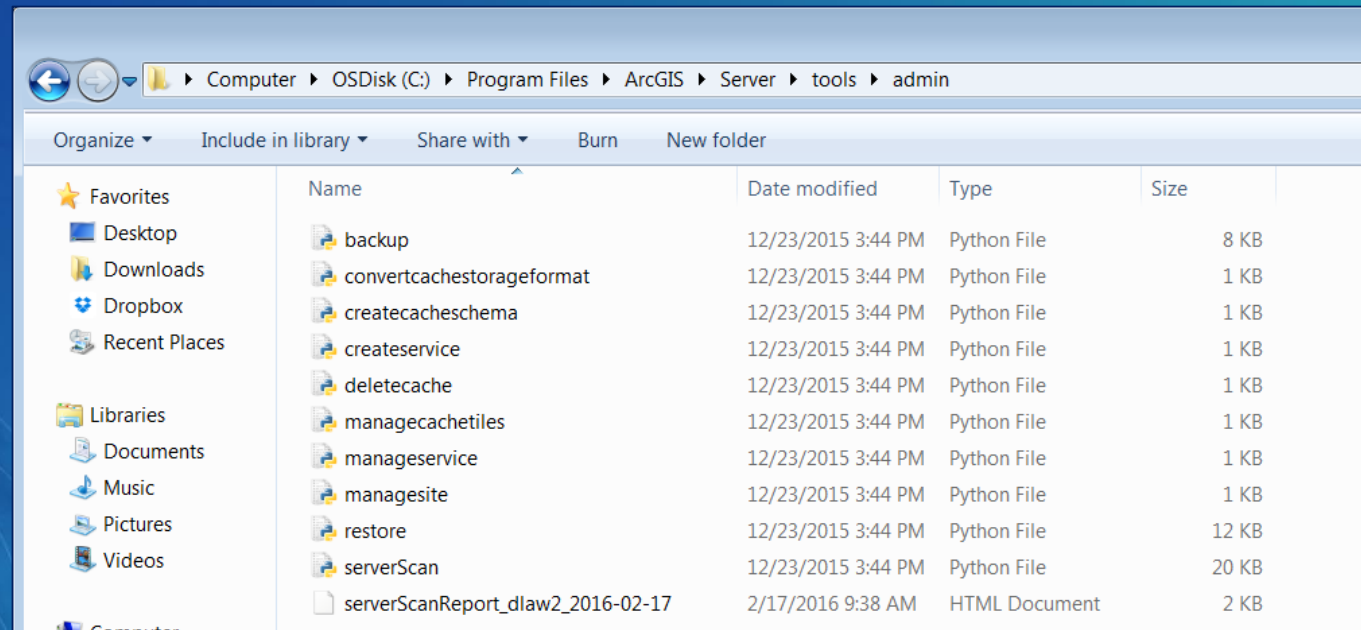
ArcGIS.com URL : <http://www.arcgis.com/home/webmap/viewer.htm>

Format: HTML

# ArcGIS Server Command Line Utilities



- Part of the installation, series of python scripts
  - `<install directory>/arcgis/server/tools/admin`
- Allows you to administer the server from batch files or the operating system command line



# Check ArcGIS Server for Security Best Practices



- **serverScan.py** is a script in the Server installation directory
- Script checks for security settings → generates a report that makes recommendations to improve Server site security

## ArcGIS Server Security Scan Report - 07/10/17

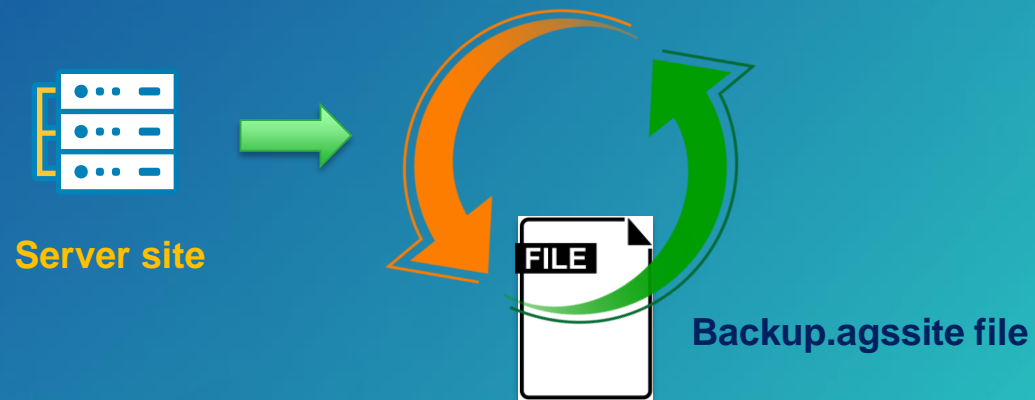
d1aw10.esri.com (10.5.1)

### Potential security items to review

<u><b>Id</b></u>	<u><b>Severity</b></u>	<u><b>Property Tested</b></u>	<u><b>Scan Results</b></u>
SS08	Important	Cross-domain requests	Cross-domain requests are unrestricted. To reduce the possibility of an unknown application sending malicious commands to your web services, it is recommended to restrict the use of your services to applications hosted only in domains that you trust. <a href="#">More information</a>
SS09	Important	Dynamic workspace	Map service: Demodata/EditTest Dynamic workspace is enabled for this map service. To prevent a malicious party from obtaining the workspace ID and potentially gaining access, this should be disabled. <a href="#">More information</a>
SS09	Important	Dynamic workspace	Map service: Naperville/CensusTracts Dynamic workspace is enabled for this map service. To prevent a malicious party from obtaining the workspace ID and potentially gaining access, this should be disabled. <a href="#">More information</a>
SS09	Important	Dynamic workspace	Map service: Naperville/Hydrology Dynamic workspace is enabled for this map service. To prevent a malicious party from obtaining the workspace ID and potentially gaining access, this should be disabled. <a href="#">More information</a>
SS09	Important	Dynamic workspace	Map service: Naperville/Streets Dynamic workspace is enabled for this map service. To prevent a malicious party from obtaining the workspace ID and potentially gaining access, this should be disabled. <a href="#">More information</a>

# Backup and Restore Server Site Scripts

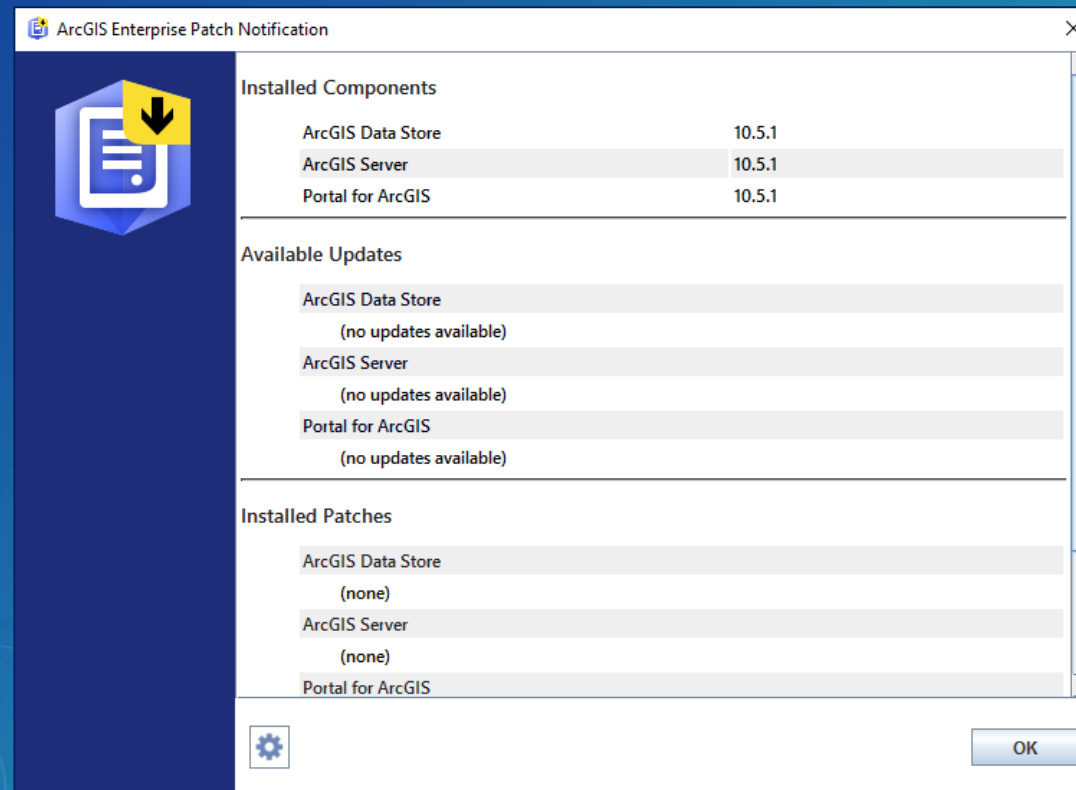
- Create a backup of your Server site configuration
- Preserves information about your services and settings
- stored as an `.agssite` file
- Use Restore script to return Server site to backup state





# Check for Patches and Updates

- Notification app included with software
- Start > All Programs > ArcGIS > Check for Updates



# Upgrading the ArcGIS Server – Component

- Software allows for an in-place upgrade
  - 10.1, 10.2, 10.2.1, 10.2.2, 10.3, 10.3.1, 10.4, 10.4.1, 10.5 → 10.5.1
- 5 key points
  1. ArcGIS Server is considered “offline” during upgrade
  2. Use the same PSA account
  3. Uninstall, then re-install the ArcGIS Web Adaptor
  4. For Server sites federated with Portal, do NOT un-federate site
    - Perform upgrade on Portal and Server sites individually
    - Order does NOT matter
  5. For hosting server deployments,
    - Upgrade ArcGIS Server BEFORE upgrading the ArcGIS Data Store



## Learn More – Other Sessions

- **ArcGIS Enterprise Security: Introducing Portal for ArcGIS**

- ~~Wed July 12~~      ~~10:15 am~~      ~~SDCC Room 9~~
- Fri July 14      9:00 am      SDCC Room 4

# Summary

- ArcGIS Server usage patterns
- Understand the ArcGIS Server component
- ArcGIS Web Adaptor component
- Single and Multi-machine deployments of ArcGIS Server
- Explore ArcGIS Server Manager
  - ArcGIS Data Store component
- Server Administrator Directory
- ArcGIS Server Command Line utilities
- Upgrading an ArcGIS Server site

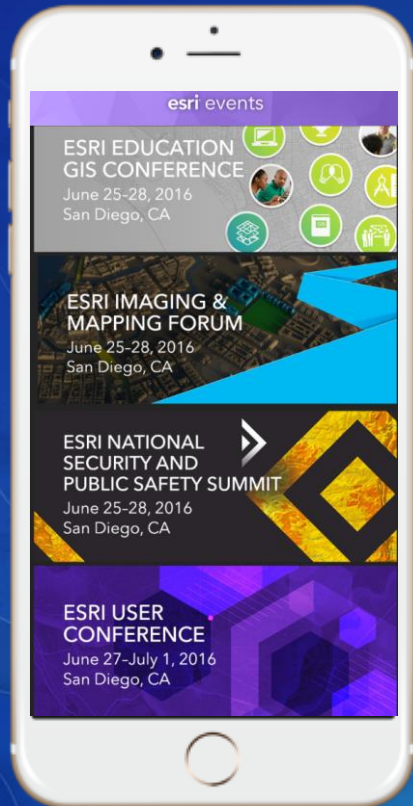




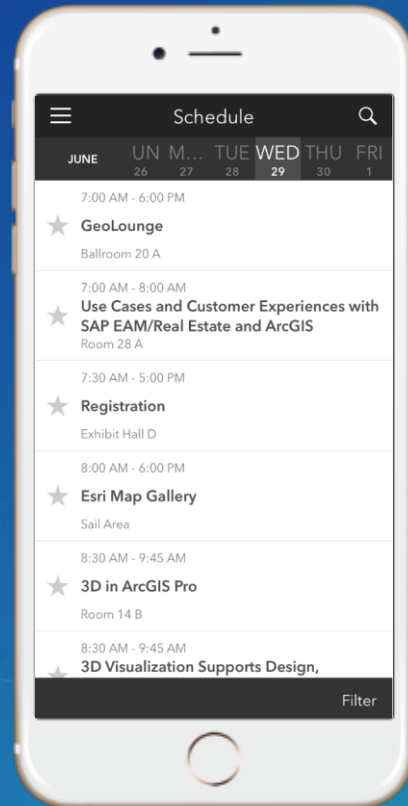
# Please take our Survey

Your feedback allows us to help maintain high standards and to help presenters

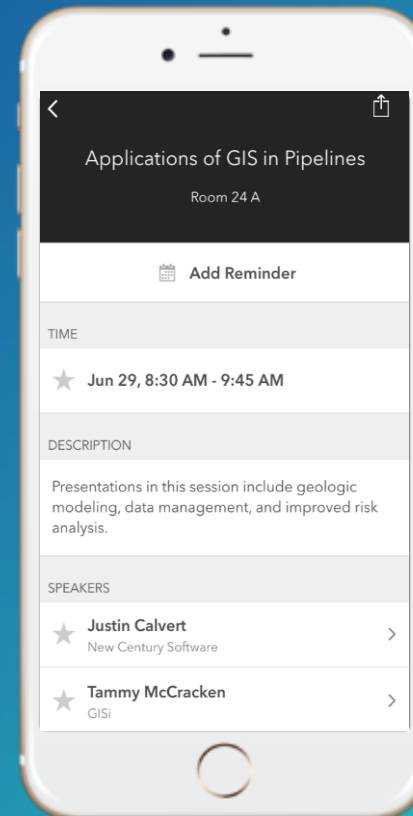
Find your event in the Esri Events App



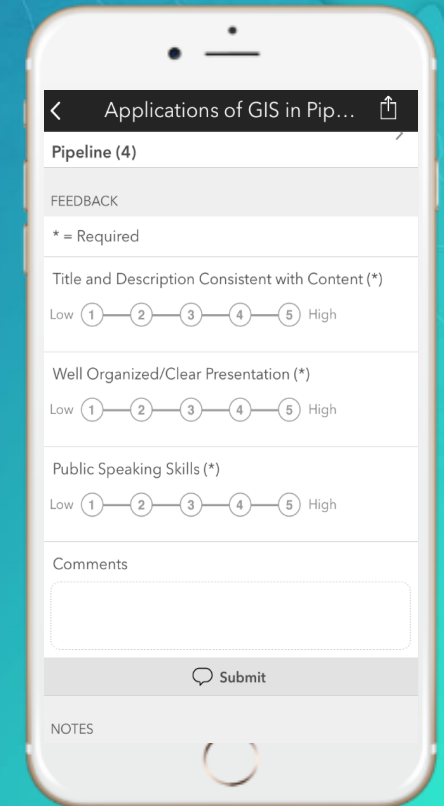
Find the session you want to review



Scroll down to the bottom of the session



Answer survey questions and submit





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