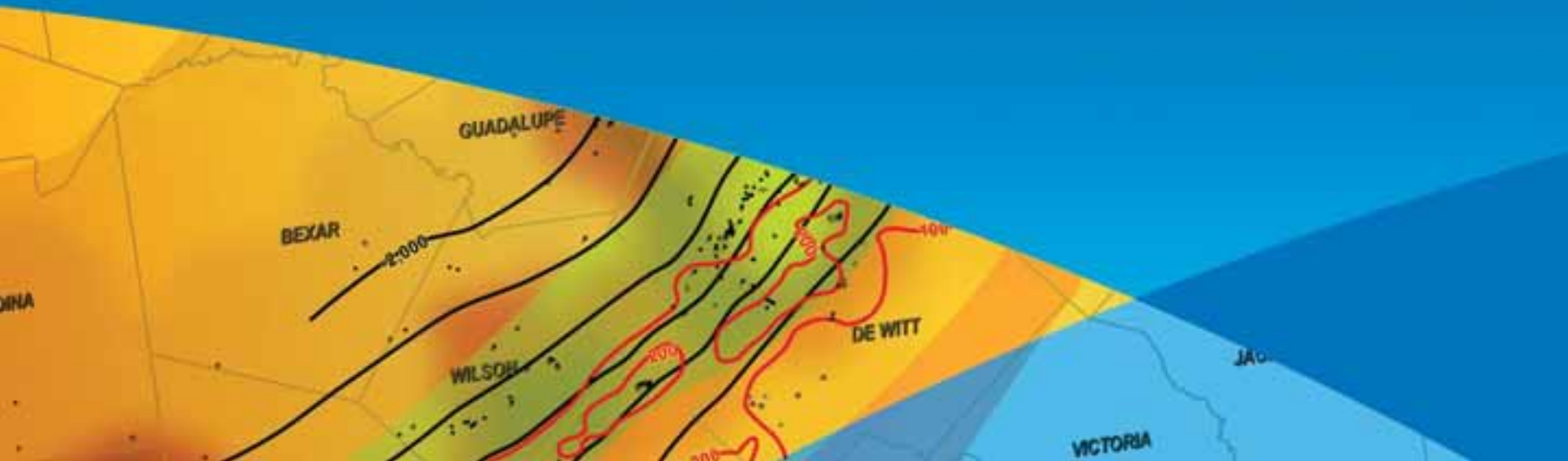
Esri Petroleum GIS Conference

March 7–9, 2013 | Houston, Texas

ArcGIS for Server – Administration

Andrew Sakowicz

asakowicz@esri.com



Target audience

- Administrators (GIS, DBA, System)
- Architects
- Developers

- Level: Intermediate

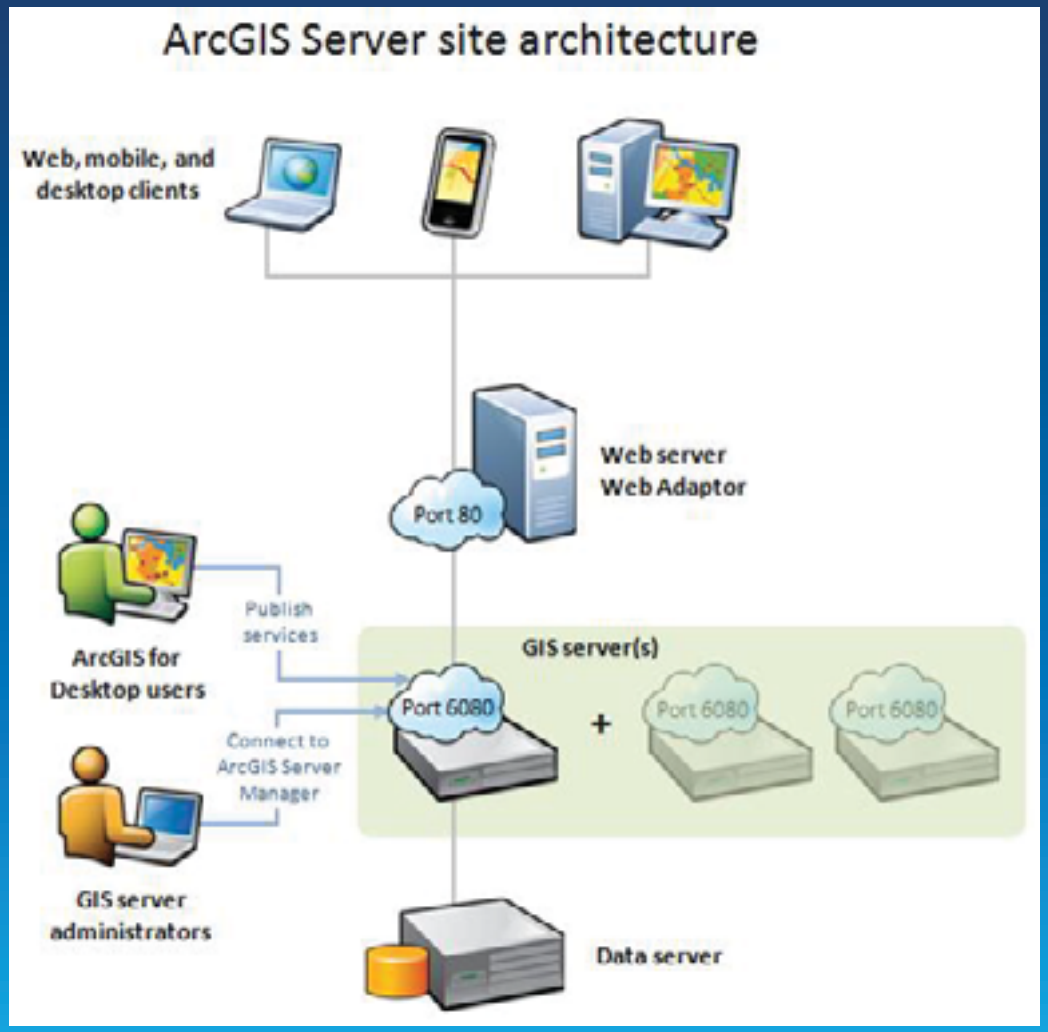
Outline

Key administrative functions

- Configuring
- Publishing
- Caching
- Monitoring

Configuring

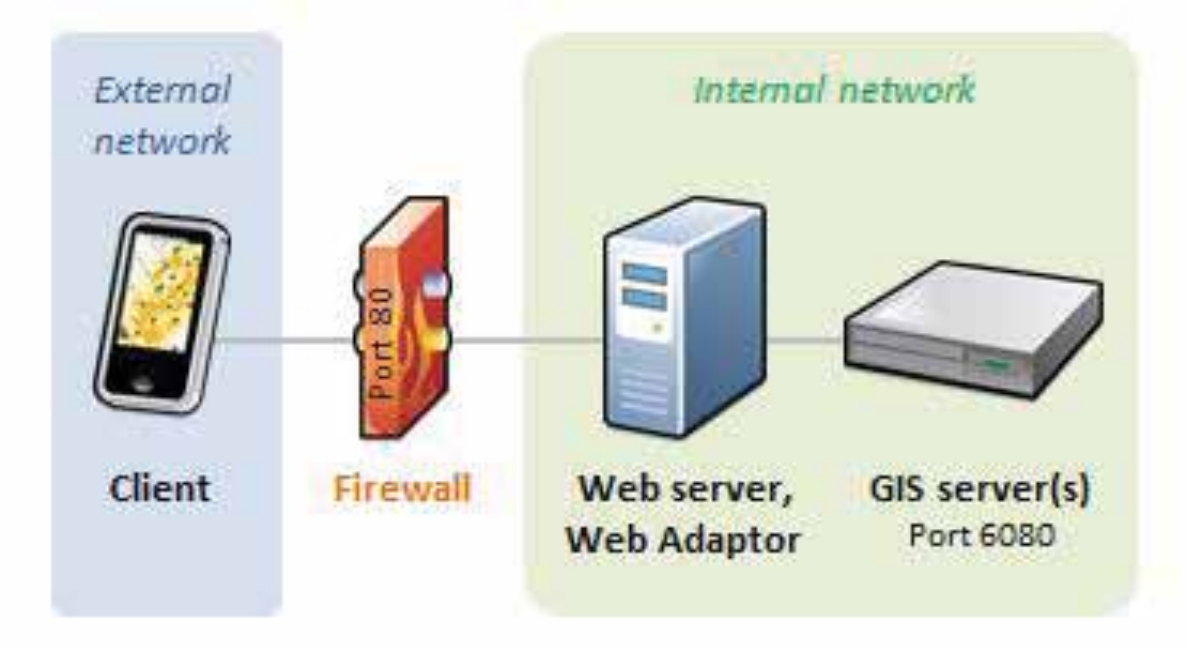
Architecture



ArcGIS Server 10.1 security architecture

Single firewall

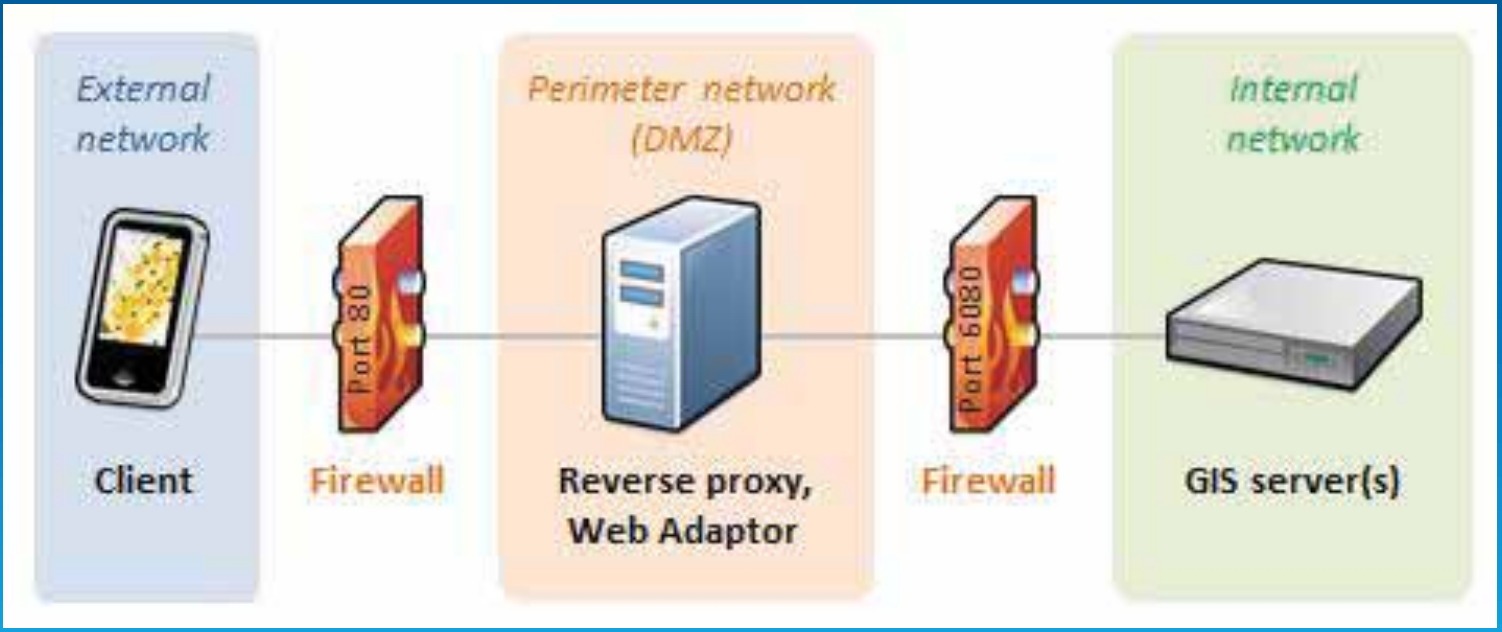
- **Port 80 opened**
- **GIS and data server reside in the secure internal network**



ArcGIS Server 10.1 security architecture

Multiple firewall

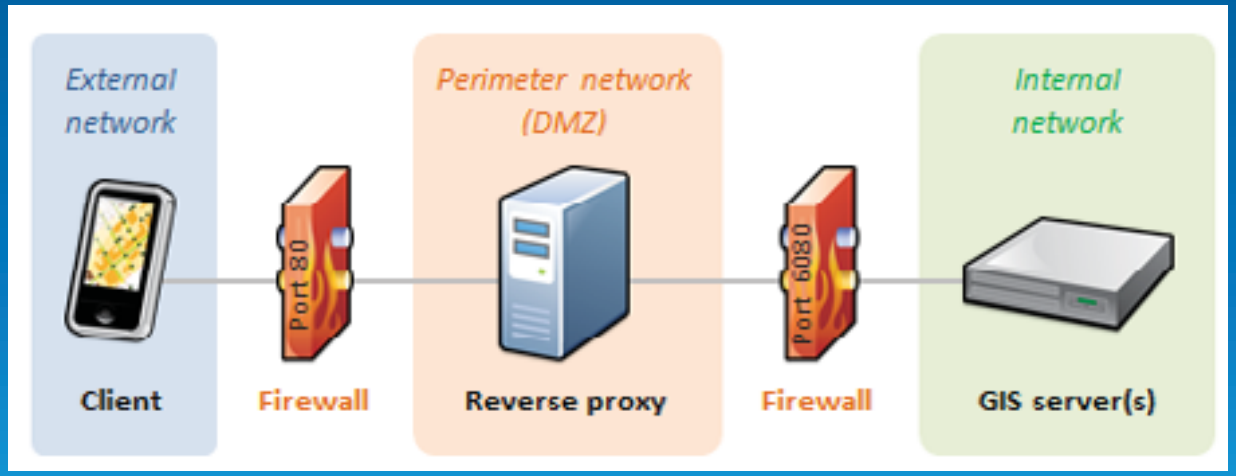
- Port 80 and 6080
- Web adapter acts as reverse proxy
- GIS and data server reside in the secure internal network



ArcGIS Server 10.1 security architecture

Integrating an existing proxy

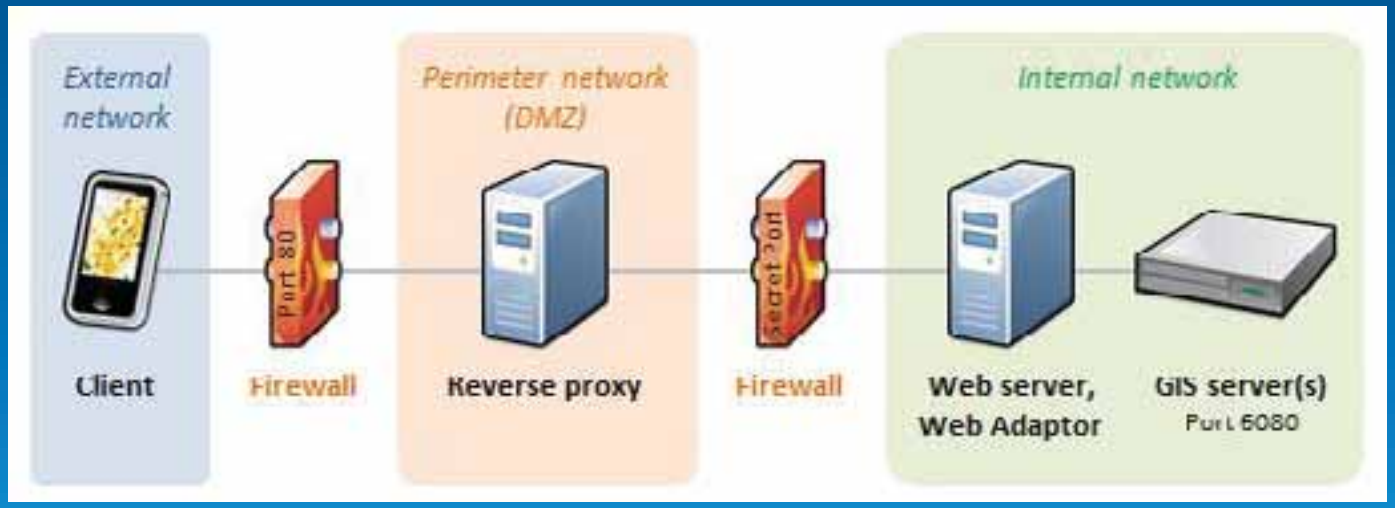
- **Add your ArcGIS Server site to proxy directives, e.g. apache httpd.conf**
  - **ProxyPass /arcgis http://myserver:6080/arcgis**
    ProxyPassReverse /arcgis http://myserver:6080/arcgis



ArcGIS Server 10.1 security architecture

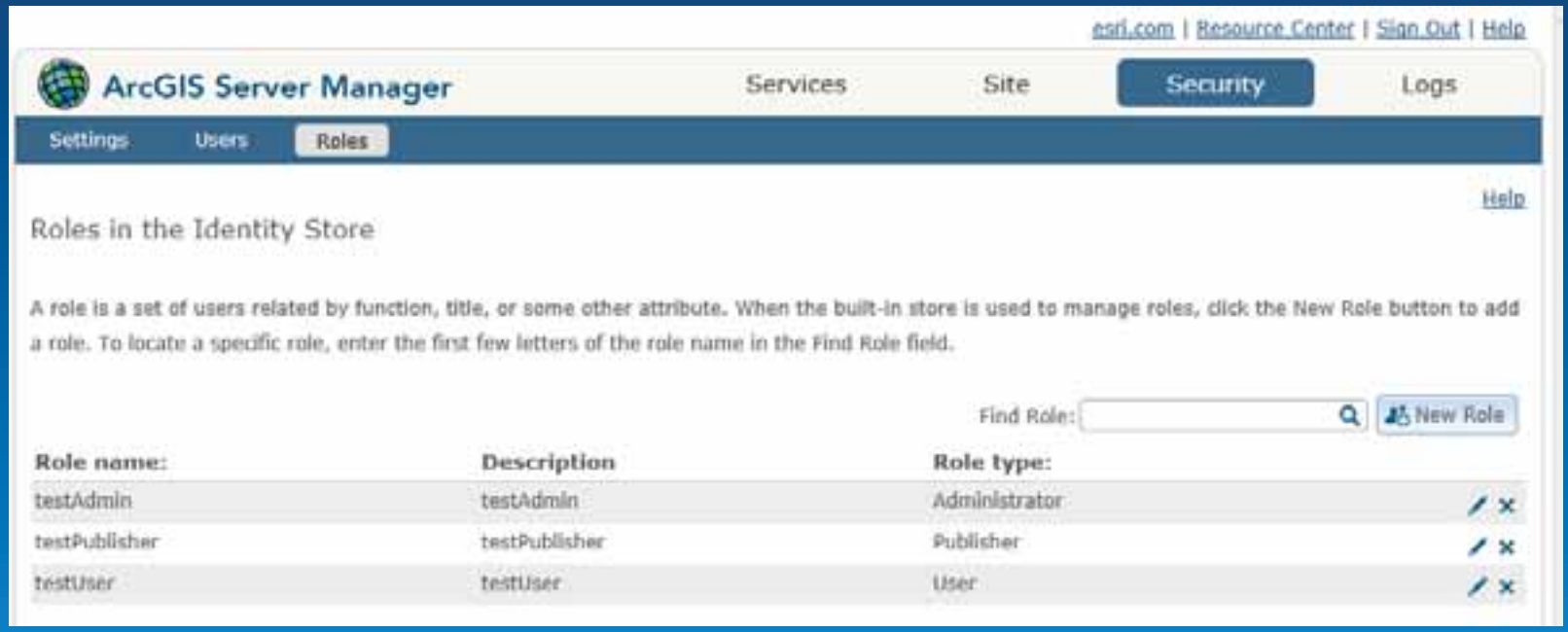
Integrating an existing proxy

- **To select your port, install the Web Adaptor on another web server**



ArcGIS Server's built-in store

Roles



ArcGIS Server's built-in store

Backup ArcGIS Server site configuration

10.2

- python.exe "C:\Program Files\ArcGIS\Server\tools\admin\
- **backup.py -u admin -p admin -s http://myserver:6080 -f "d:\mybackups**
- **restore.py -u admin -p admin -s http://myserver:6080 -f d:\mybackups\Jan-24-2013**

Add ArcGIS Server capacity

Think ArcGIS Server instances as toll booths

- **Resource(s) limiting the performance or capacity**

Low load

High load

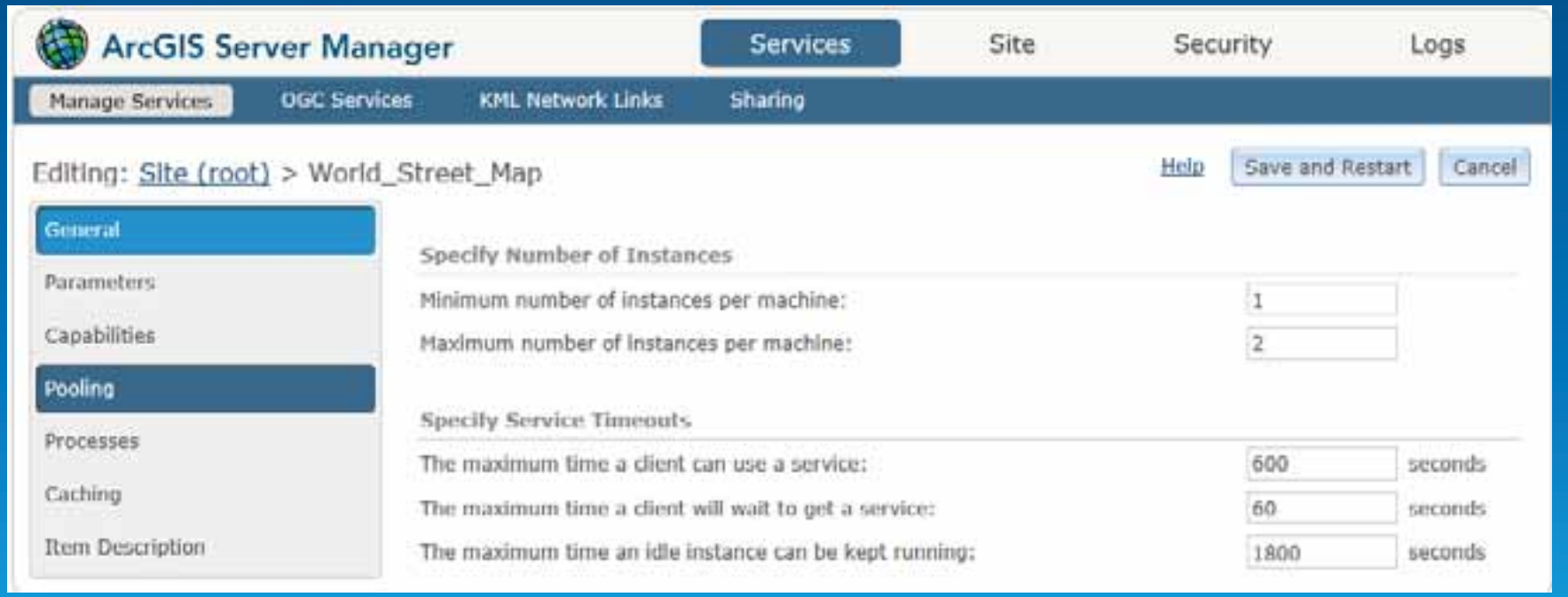
Think of:
-CPU processor as Lanes
-ArcGIS Server instances as toll booths
-Map requests as cars

Adding more servers

- **Requirements**
  - **read and write to the site's configuration store and server directories**
  - **the same ArcGIS Server account**
  - **communicate with all the other GIS servers**

Setting higher instances

- **Max Instance =Total instance / number of servers**
- **Concurrent usage: 1 Instance / CPU core**



Publishing services

Handling high number of services

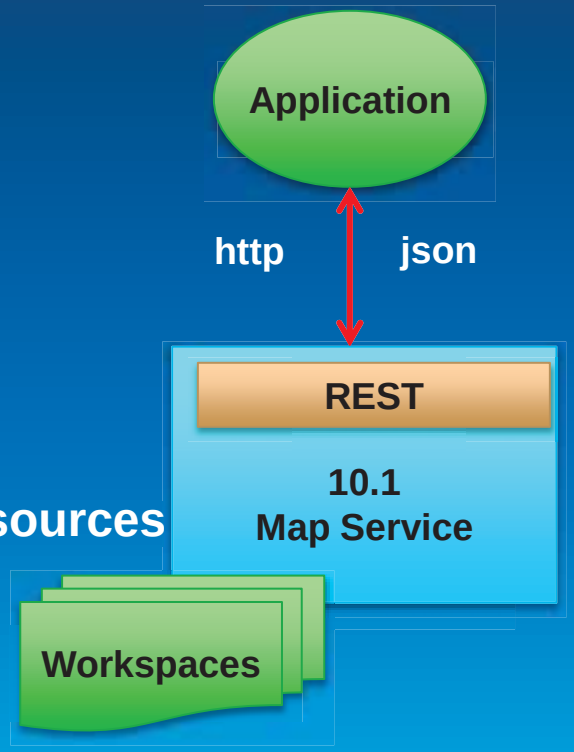
Challenges with Memory

- **Min instance=0**
- **Reduce number of services with dynamic layers**

Item	Low	High	Delta
Dynamic Map	50 MB	500 MB	900%
Image Service	20 MB	1,024 MB	5,020%
Geoprocessing Service	100 MB	2,000 MB	1,900%

Dynamic Layers: The Concept

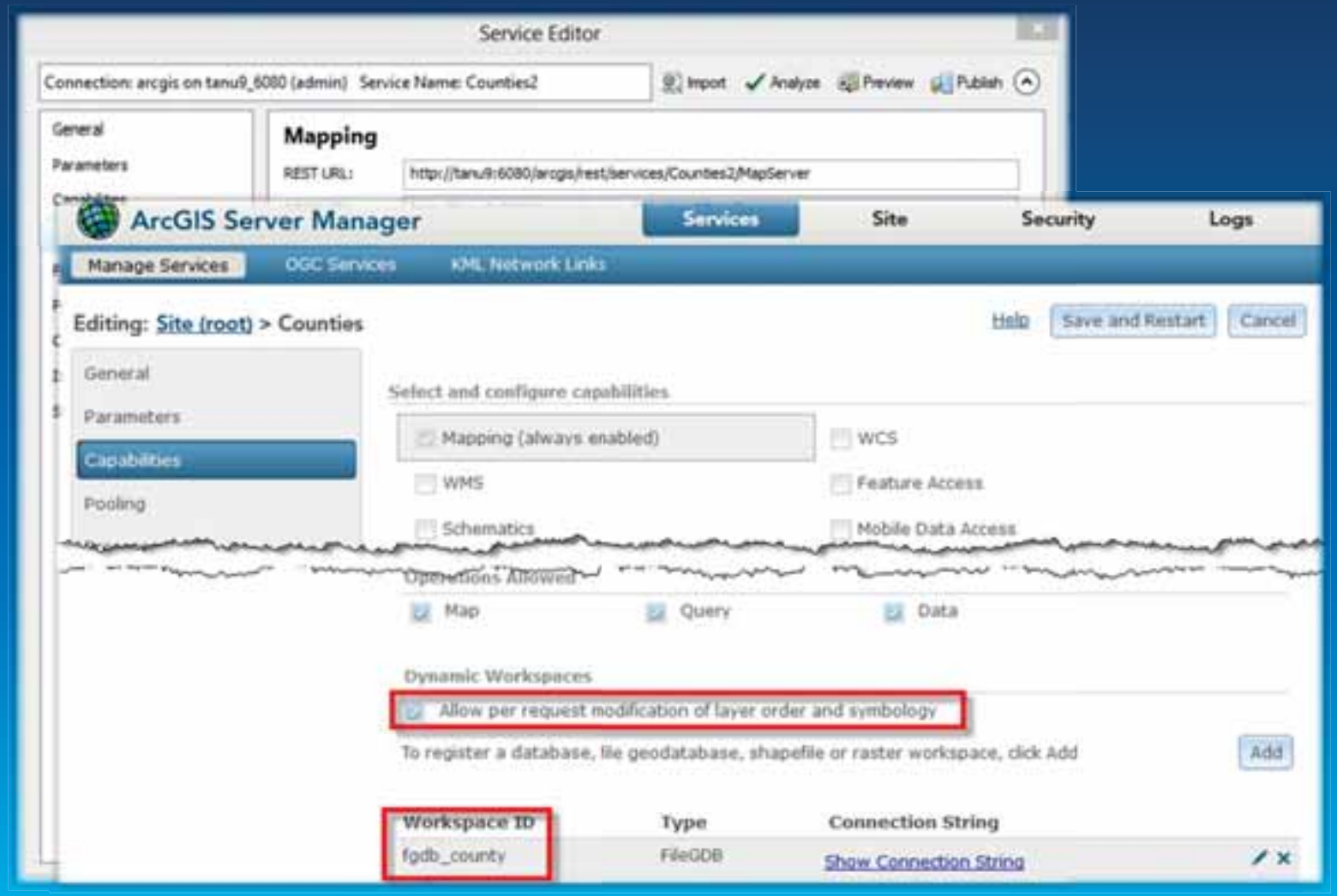
- Capability with the map service that allows for per-request changes to the map
  - Optional capability of map services
- Allows for:
  - Updating renderers and symbols
  - Removing and reordering layers
  - Changing layer data sources
  - Adding new layers from registered data sources



Thematic mapping

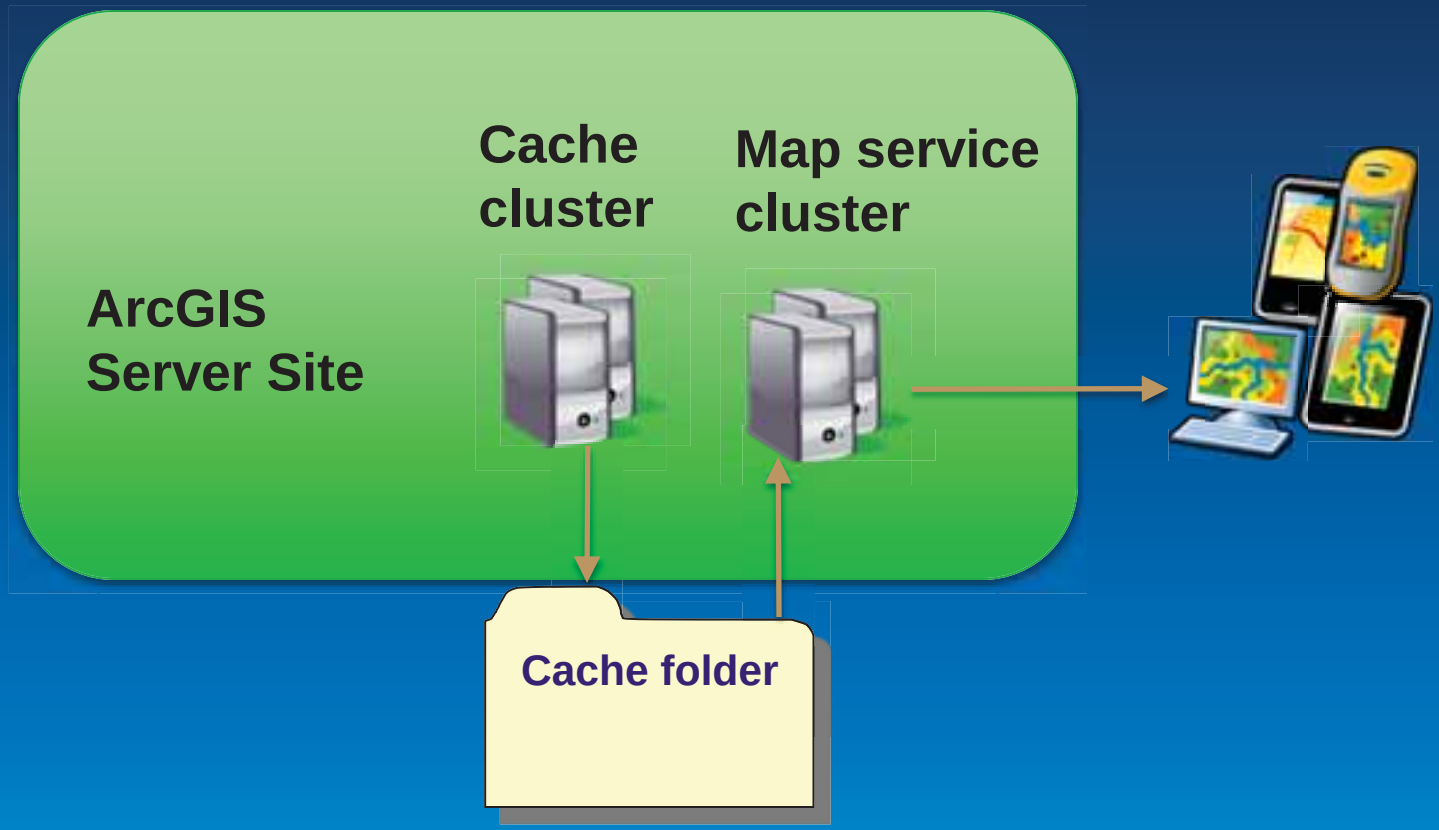
- Special case of dynamic layers supported via
  - Ability to change renderer
  - Ability to change data sources – including joins
  - New map server API for constructing renderer classes
- Generate renderer operation
  - Supports class breaks and unique value class generation
  - Popular classification types from ArcGIS Desktop

Enabling dynamic layers



Caching

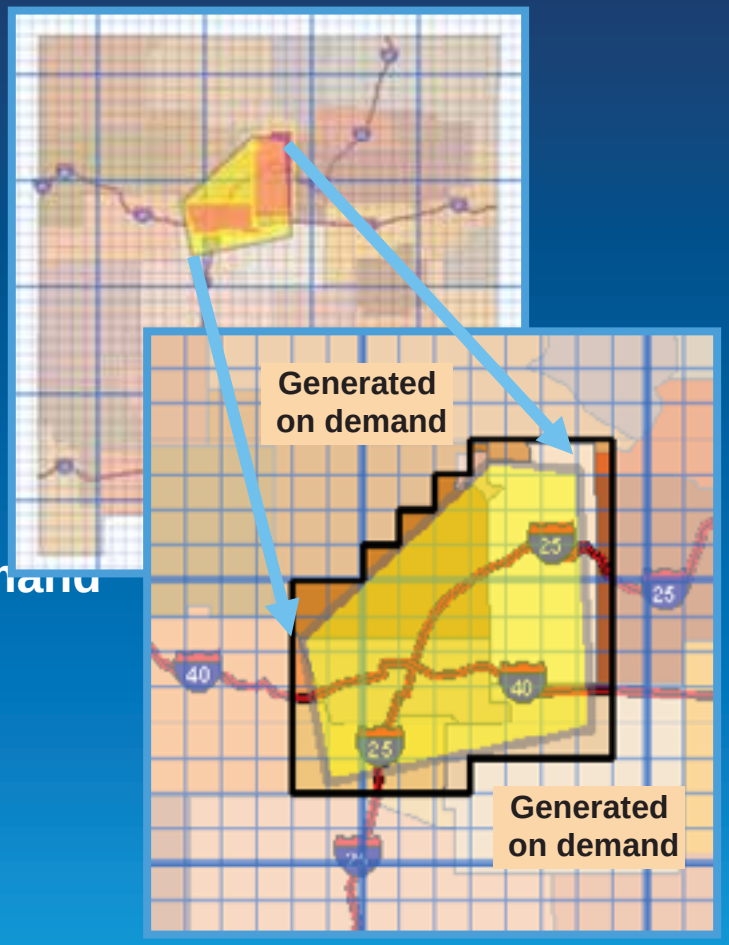
Clusters allow you to isolate cache creation



Cache cluster can scale out while the cache job is running

Pre-create coupled with cache on demand

- Pre-create high use areas
  - Population centers
  - Parks, roads, attractions
- Features
  - Cover popular extent
  - Generate key tiles
  - All others generated on demand



What is image service caching

- Fast access to images as a tiled service
  - Out performs / scales mosaic dataset and raster dataset
  - Imagery is not processed on the fly
- Uses image extension

Caching in ArcGIS Online

- ArcGIS Online subscription allows for caching
- No need to worry about capacity
- Charged by tile creation and storage
- Two approaches
  - Upload data to AGOL
    - Build and store cache with AGOL
  - Upload tile package to AGOL
    - Build cache on premise but store with AGOL
- Understanding credit usage: http://www.esri.com/software/arcgis/arcgisonline/credits

Why create a tile package?

- Local cache for Desktop and Runtime applications
- Transport a map cache
- Upload a map cache to ArcGIS Online

Creating a tile package

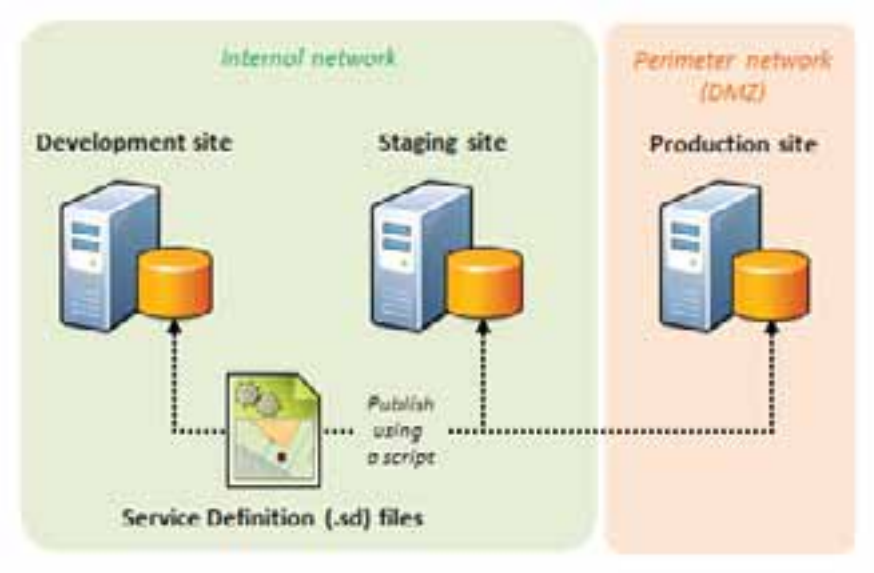
- ArcMap Options > Sharing > Enable ArcGIS Runtime tools
- Two options for creation
  - Create tile package within ArcMap
    - Single processor
    - File > Share As > Tile Package
  - Create cache with server
    - Tile Cache > Export Tile Cache
      - Uses Parallel Processing Factor Geoprocessing Environment setting

Service Definition (.sd)

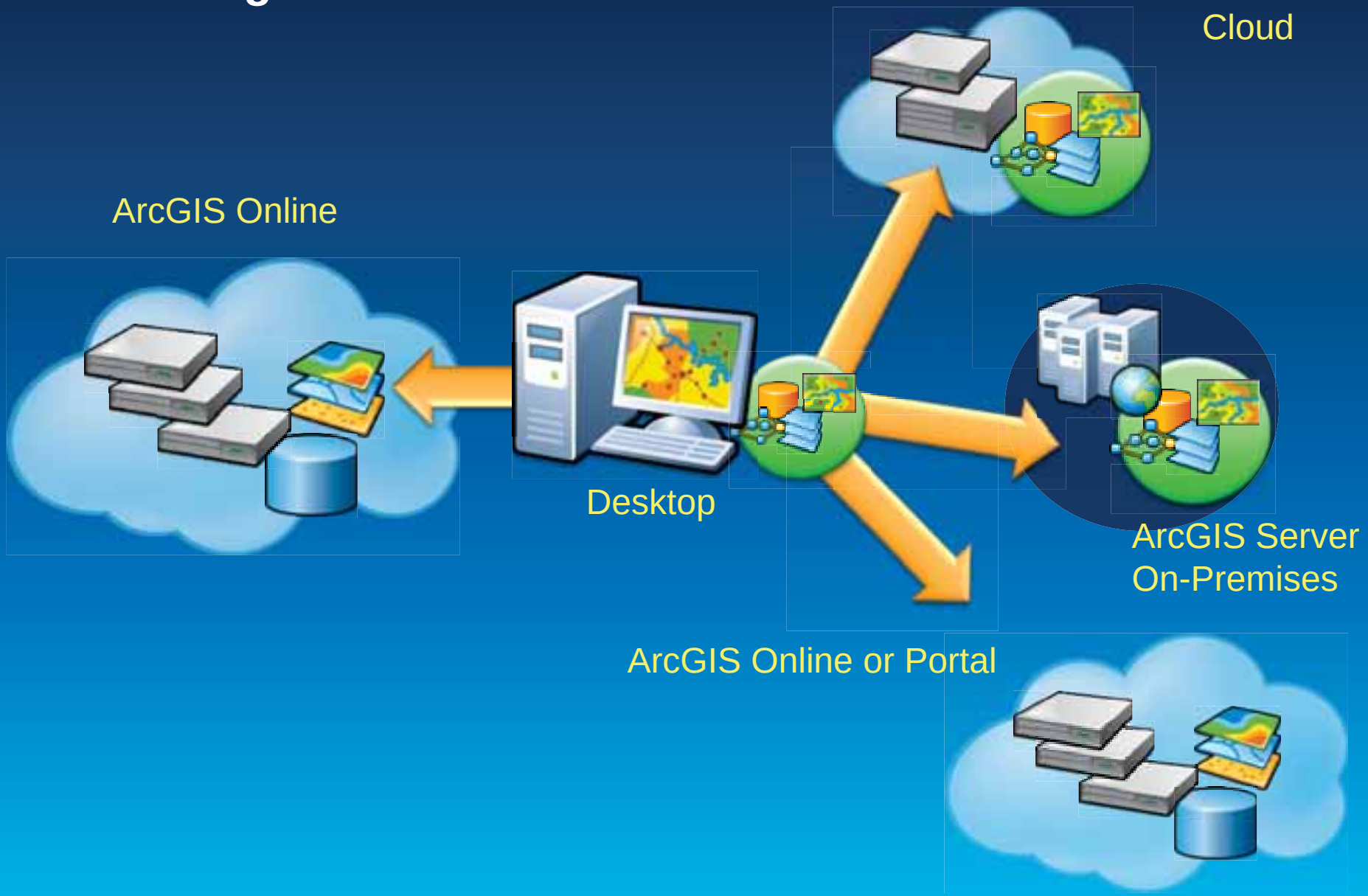
- New file format for publishing starting at 10.1
  - Replaces .msd
- Contains everything required to create a service
- Uploaded to the server when publishing
- Can be saved and published later
  - Using Catalog or Server Manager

Development, Staging, Production environments

- Update services
  - delete the service and publish the updated SD
- Update applications
  - copy the application files
  - update any web service URLs in your code to the new site



Sharing as Services



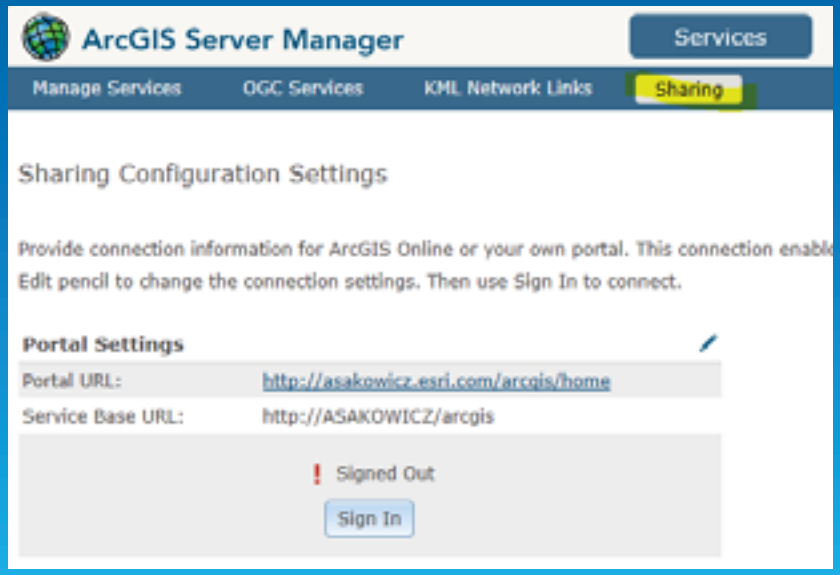
Portal and Server Federation

Federated Server – A Server whose security is managed by the Portal

Using your server with Portal for ArcGIS

10.2

- Same logins for the server and the portal
- Publish services to your portal
- Use printing, geocoding, geometry, and route services in portal
- Discover, consume, and share your services



Portal – Working with Services

10.2

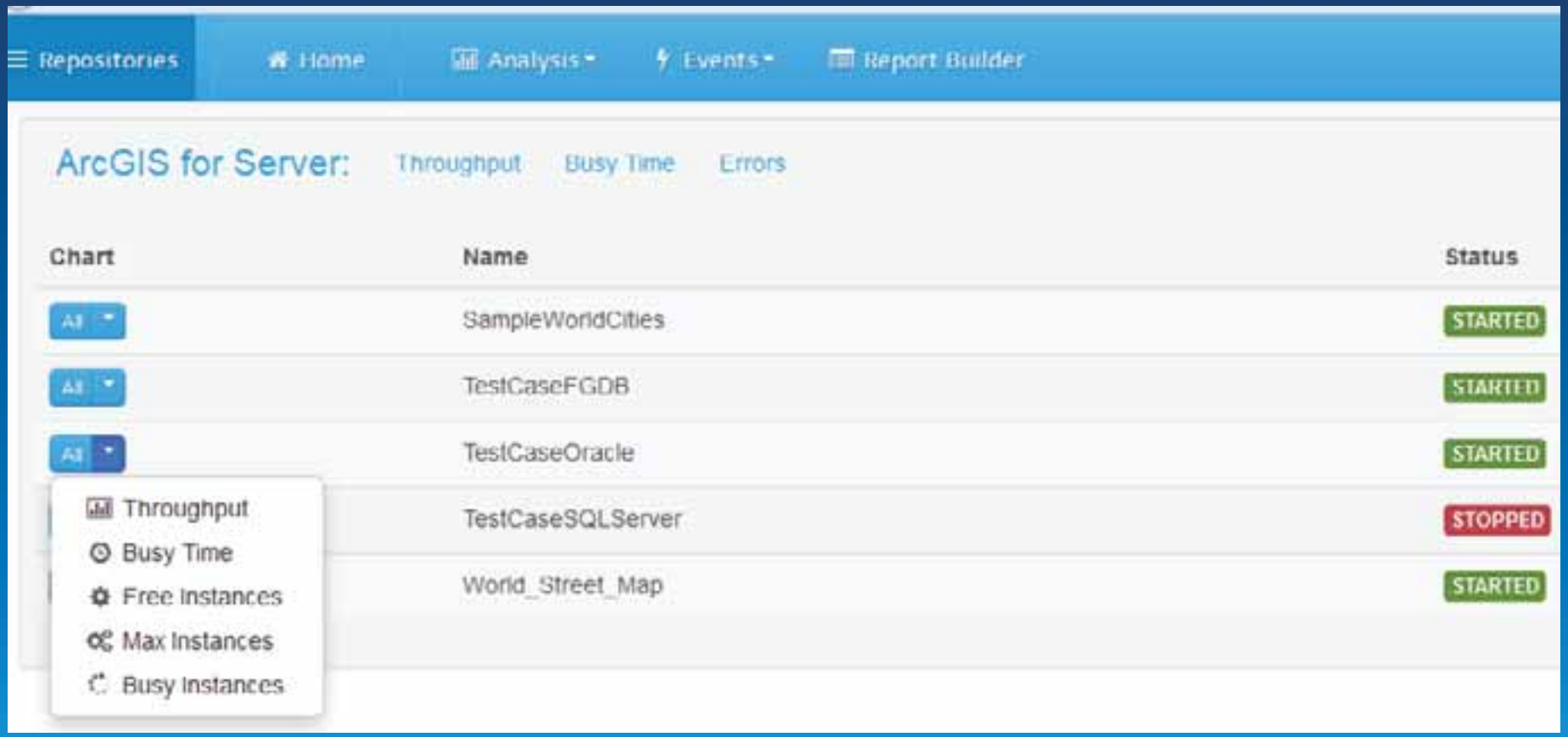
- **Publish Services to the Federated Server**
  - Servers within the organization can be federated with the Portal.
  - All Services published to the Federated Server will be automatically registered with the Portal.
- **Register Services with the Portal**
  - Services can come from any server within or outside the organization. These can be registered with the Portal.
- **Publish Services to the Portal - hosted services**
  - Portal users can publish services to the Portal.

    Upload content to portal and have the Portal spin up a service using that content.

Monitoring

Trend Analysis

ArcGIS Server statistics

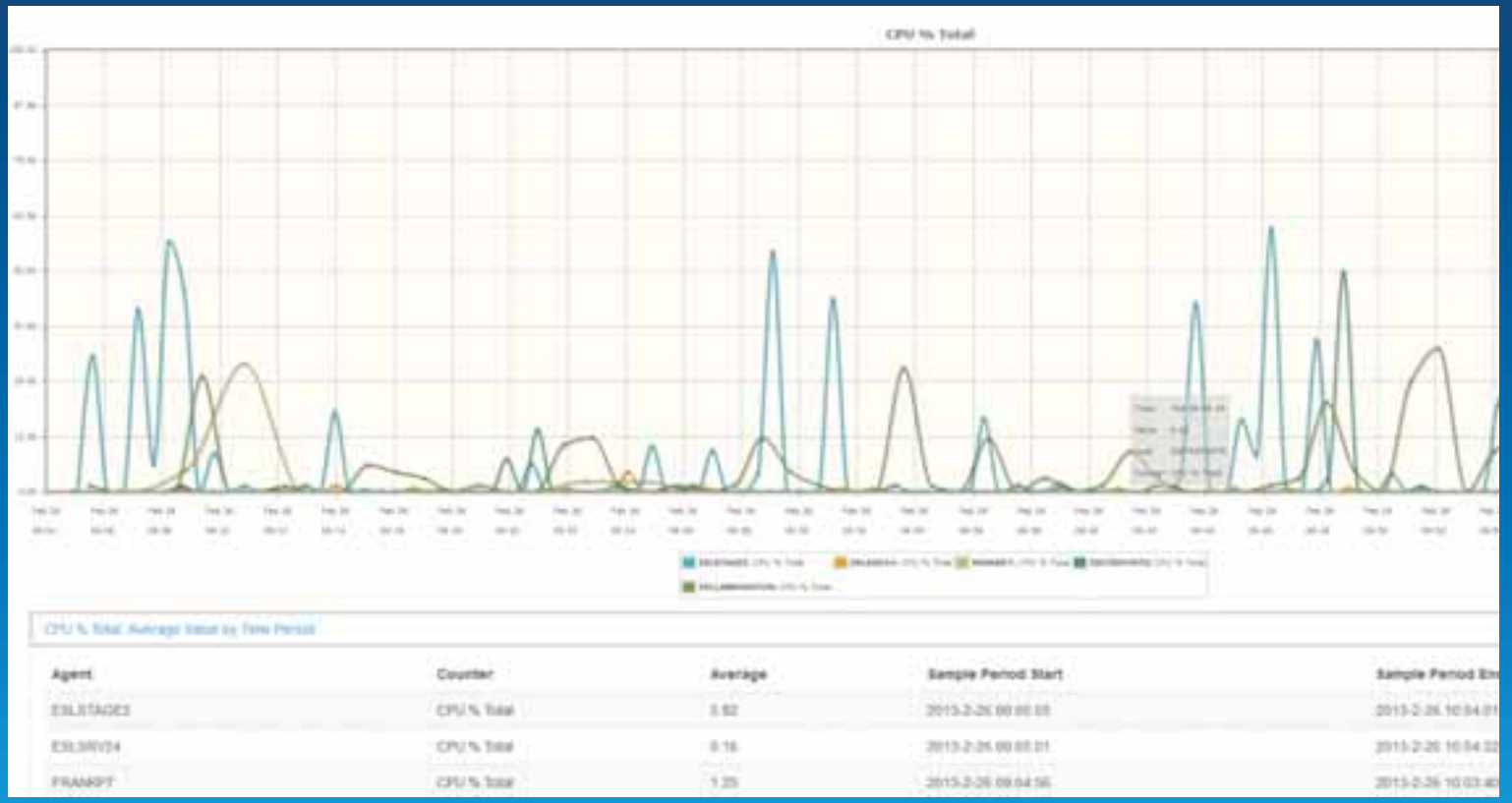


System Monitor (Beta)
http://www.arcgis.com/home/item.html?id=848f48b0f88e4de7a036377197453efe

Trend Analysis

System Metrics

System Metrics: CPU Disk Memory Network



Questions?

Thank you.

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asakowicz@esri.com

Understanding our world.