ArcGIS Enterprise: An Introduction

Shannon Kalisky & Thomas Edghill

Agenda

- What is ArcGIS Enterprise
- The Basics of ArcGIS Enterprise
- Software Components
- Analytical Capabilities

What is ArcGIS Enterprise

ArcGIS Enterprise is powerful server software for data management, mapping, and analysis that runs in your infrastructure. It is made up of a system of components that create a Web GIS that help you reach more people, through any device.

The ArcGIS Enterprise Name

Starting at ArcGIS 10.5, the product family known as ArcGIS for Server is now ArcGIS Enterprise.

Places you will experience the name change:

- MyEsri
- License files
- Help documentation
- Support
- Esri product pages
- Apps
- *and more…*

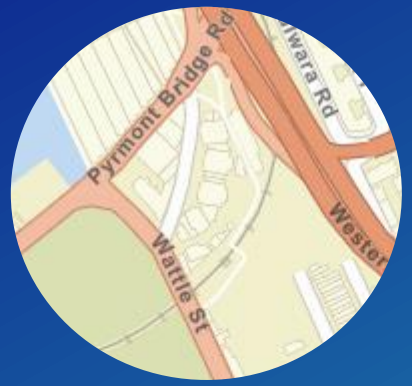
The new name does not apply to the product prior to ArcGIS 10.5

Why change the name?

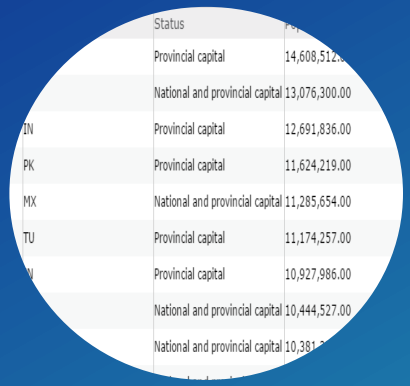
To better capture what the product is and who it is for

Your data in ArcGIS Enterprise

Input data types



Vector

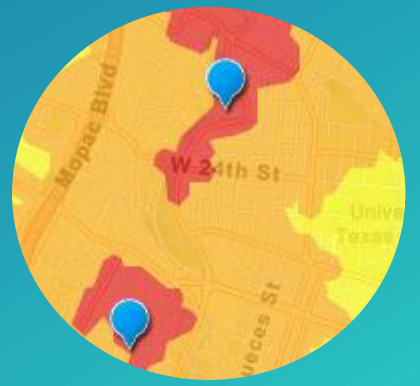


Tabular

Raster

Real-time / IoT

Big Data



Business Intelligence

3D Data Visualization

- Visualize 3D content in the Enterprise portal
- Create 3D web maps and apps
  - Custom apps
  - Configurable app templates

Enterprise Geodatabases

- **A more robust way to manage your enterprise datasets**
- **Works with your existing RDBMS**
- **Uses native database features to make geospatial data management easier and more aligned to your IT or business policies.**

Benefits of Enterprise Geodatabases

Multi-user

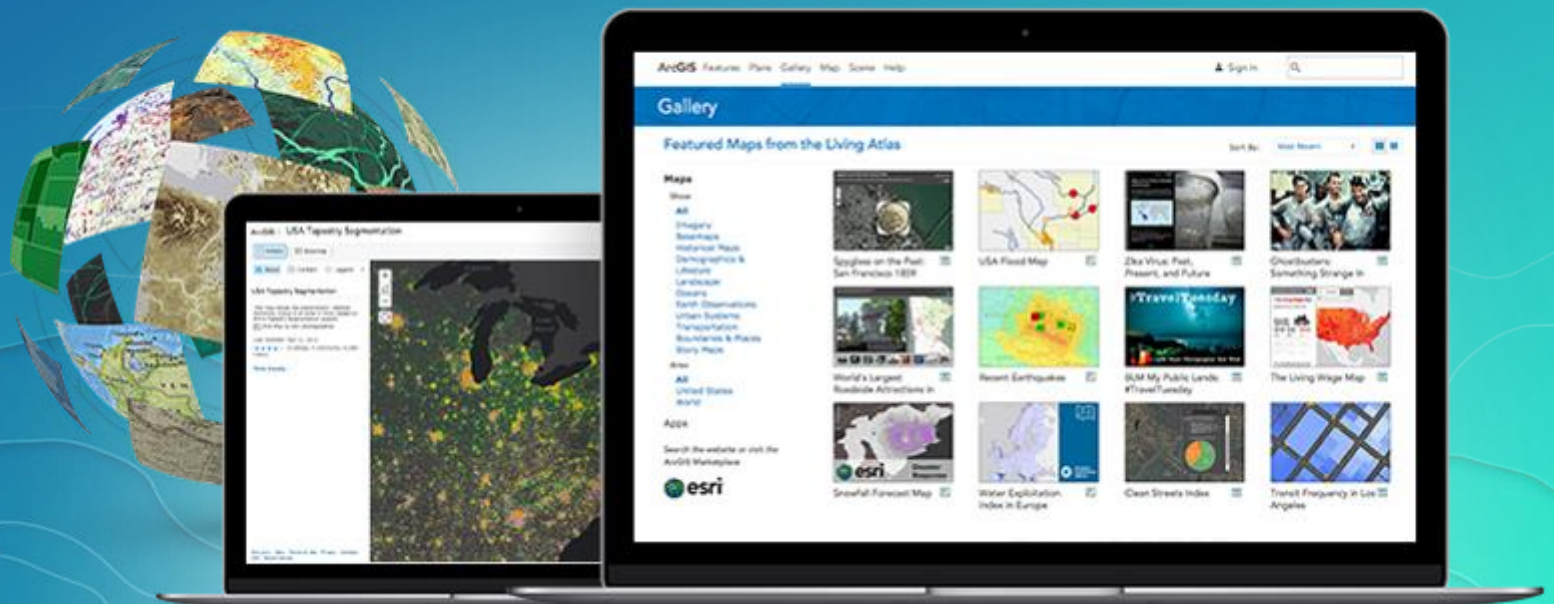
Versioning

Size can reach the limits of the DBMS

Ready-to-Use Content

Living Atlas

- Authoritative and Esri curated content
  - Basemaps
  - Imagery
  - Lifestyle and demographic data
  - Historical data
  - And more
- 100’s of boundary layers available for download from MyEsri



Living Atlas in ArcGIS Enterprise

Tuesday, July 11
5:30 pm – 6:15 pm
SDCC Demo Theater 08

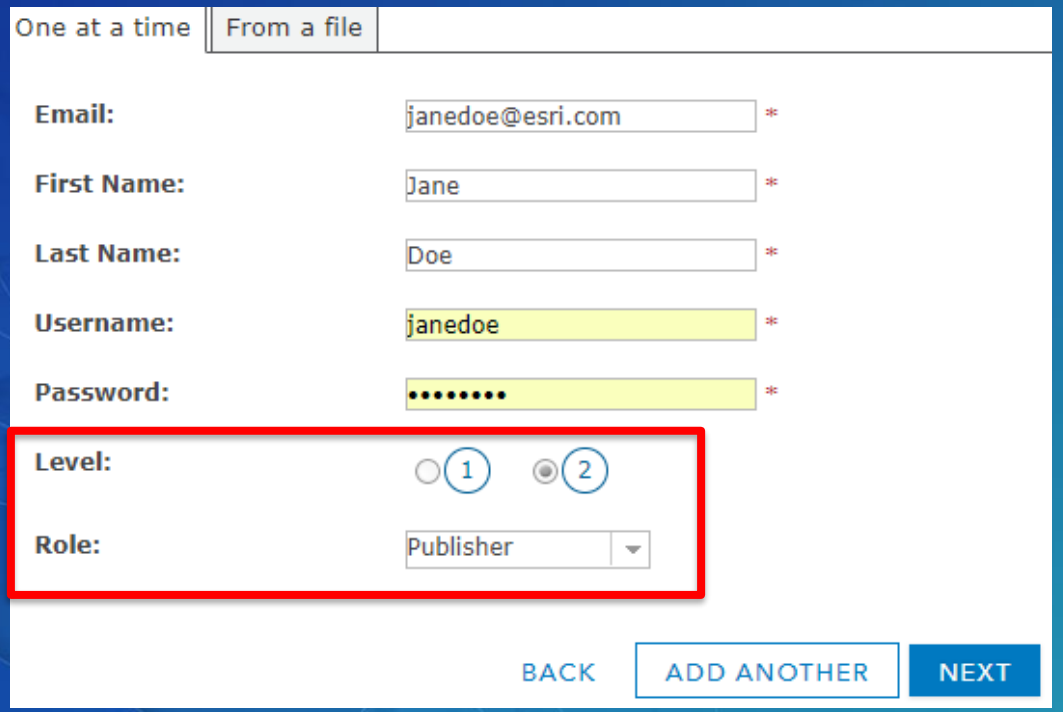
Wednesday, July 12
1:30 pm – 2:15 pm
SDCC Demo Theater 08

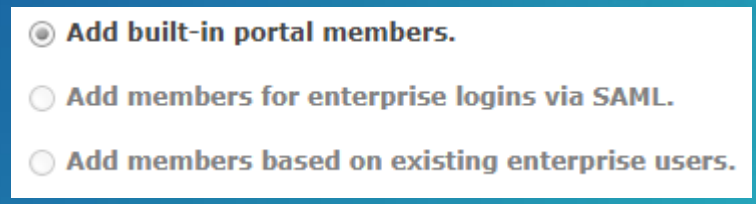
Demo: Meet the ArcGIS Enterprise Portal

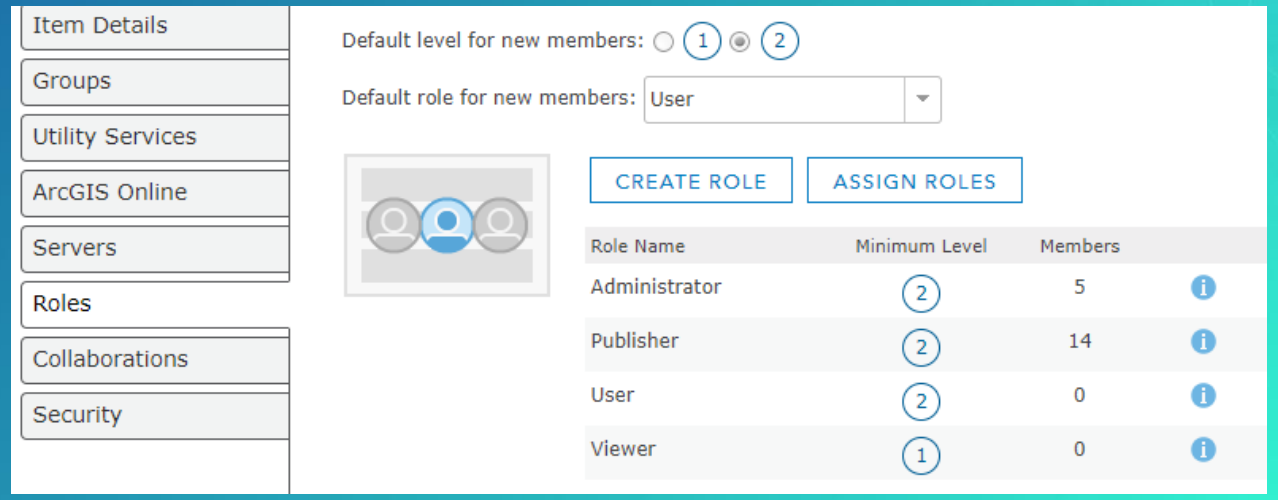
- Hello portal!
- Bringing in your data
- Building an App

Your Identity in ArcGIS Enterprise

- Identity is the basis of content security in ArcGIS Enterprise
- They can be built-in, added via SAML, or be imported from an existing identity store like LDAP or Active Directory.
- The portal administrator will associate a level and role with your identity
- The role and level determine your level of access/privileges







User Levels

- Fewer privileges than a level 2
- Can be a member of groups, can view content
- Cannot create, modify, or save content

- Full privileges are possible
- Can create, modify, and save content
- Any named user from a deployment prior to 10.5 is a level 2

Demo: Explore Identity in ArcGIS Enterprise

Create an Identity and Assign a User Role

Publishing & Sharing

- **Sharing is how you allow others in your organization to see the content you have published to ArcGIS Enterprise.**

- **There are three levels of sharing:**
  - **Share with a group**
  - **Share with the organization**
  - **Share with everyone**

- **You can change the sharing settings of the content you create at any time.**

Groups

- When you want to share content with only certain individuals you must create a group
- After you create a group you invite members to join the group, the members must accept the invitation before they can see content shared to the group
- Administrators can automatically add members to groups, bypassing the standard invitation process

Demo: Sharing in ArcGIS Enterprise

- Creating and Using Groups
- Sharing Content

Sharing Web Layers and Services in the ArcGIS Platform

Wednesday, July 12
8:30 am – 9:45 am
SDCC Room 03

Thursday, July 13
3:15 pm – 4:30 pm
Hilton Bayfront – Sapphire Ballroom I

Sharing Beyond Your Organization

- **Distributed Collaboration is how you can share content beyond your ArcGIS Enterprise deployment**

- **Share to:**
  - Other ArcGIS Enterprise deployments within your organization
  - ArcGIS Enterprise deployments in other organizations
  - An ArcGIS Online organization you control
  - An ArcGIS Online organization controlled by someone else

Distributed Collaboration

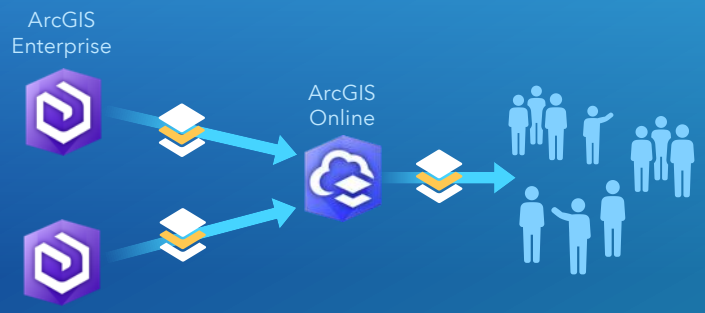
- At 10.5, you can set up Collaborations between multiple ArcGIS Enterprise deployments.
  - Data is shared “as reference”
  - Data sync is immediate

- At 10.5.1, Collaborations can also be set up between ArcGIS Enterprise and ArcGIS Online.
  - Data can be copied
  - Data sync is scheduled

ArcGIS Enterprise and ArcGIS Online Distributed Collaboration

Use It For:

Sharing Content to the Public



Field Data Collection

Backing-up to Enterprise

At 10.5.1, distributed collaboration between ArcGIS Enterprise and ArcGIS Online is part of an Early Adopter Program.

ArcGIS Enterprise: What's New

Tuesday, July 11
3:15 pm – 4:30 pm
SDCC Room 10

Thursday, July 13
8:30 am – 9:45 am
Hilton Bayfront – Sapphire Ballroom I/J

ArcGIS Enterprise: The Road Ahead

Wednesday, July 12
3:15 pm – 4:30 pm
SDCC Ballroom 06 A

Thursday, July 13
1:30 pm – 2:45 pm
SDCC Ballroom 06 A

Components

Components

ArcGIS Enterprise

=

ArcGIS Web Adaptor

+

Portal for ArcGIS

+

ArcGIS Server

+

ArcGIS Data Store

Components

ArcGIS Web Adaptor

Integrates with your existing web server and appropriately distributes incoming requests for access to ArcGIS Enterprise.

+

Portal for ArcGIS

+

ArcGIS Server

+

ArcGIS Data Store

Components

ArcGIS Web Adaptor

+

Portal for ArcGIS

+

ArcGIS Server

+

ArcGIS Data Store

The web frontend and infrastructure backend that supports a user's interaction and overall experience with your Web GIS.

Components

ArcGIS Web Adaptor

+

Portal for ArcGIS

+

ArcGIS Server

Gives you the ability to publish services and share maps and layers from your own business databases.

+

ArcGIS Data Store

Components

ArcGIS Web Adaptor

+

Portal for ArcGIS

+

ArcGIS Server

+

ArcGIS Data Store

The ArcGIS managed data repository that stores the content that is hosted on the portal. It is not a replacement for your enterprise geodatabases.

Components

ArcGIS Web Adaptor

+

Portal for ArcGIS

+

ArcGIS Server

+

ArcGIS Data Store — **Three Types:**

- Relational
- Tile Cache
- Spatiotemporal

Building Your First ArcGIS Enterprise Deployment

Tuesday, July 11
4:30 pm – 5:15 pm
SDCC Demo Theater 08

Wednesday, July 12
5:30 pm – 6:15 pm
SDCC Demo Theater 08

ArcGIS Enterprise: Architecting Your Deployment

Wednesday, July 12
10:15 am – 11:30 am
Hilton Bayfront– Sapphire Ballroom A

Wednesday, July 12
1:30 pm – 2:45 pm
SDCC Room 09

Tools to Streamline Deployment

No matter the size of your organization, complexity of your setup, or infrastructure environment, there is a deployment tool for you.

Building Your First ArcGIS Enterprise Deployment

Tuesday, July 11
4:30 pm – 5:15 pm
SDCC Demo Theater 08

Wednesday, July 12
5:30 pm – 6:15 pm
SDCC Demo Theater 08

Automating ArcGIS Deployments Using Chef

Wednesday, July 12
3:15 pm – 4:30 pm
SDCC Room 05 B

ArcGIS Enterprise in the Amazon Cloud

Thursday, July 13
10:15 am – 11:30 am
SDCC Room 31 A

ArcGIS Enterprise in the Microsoft Azure Cloud

Tuesday, July 11
1:30 pm – 2:45 pm
SDCC Room 32 A

Key Concepts

Hosting Server

- **When setting up ArcGIS Enterprise you will designate one ArcGIS Server as the hosting server.**

- **This hosting server is what powers your base ArcGIS Enterprise deployment.**

Hosting server icon

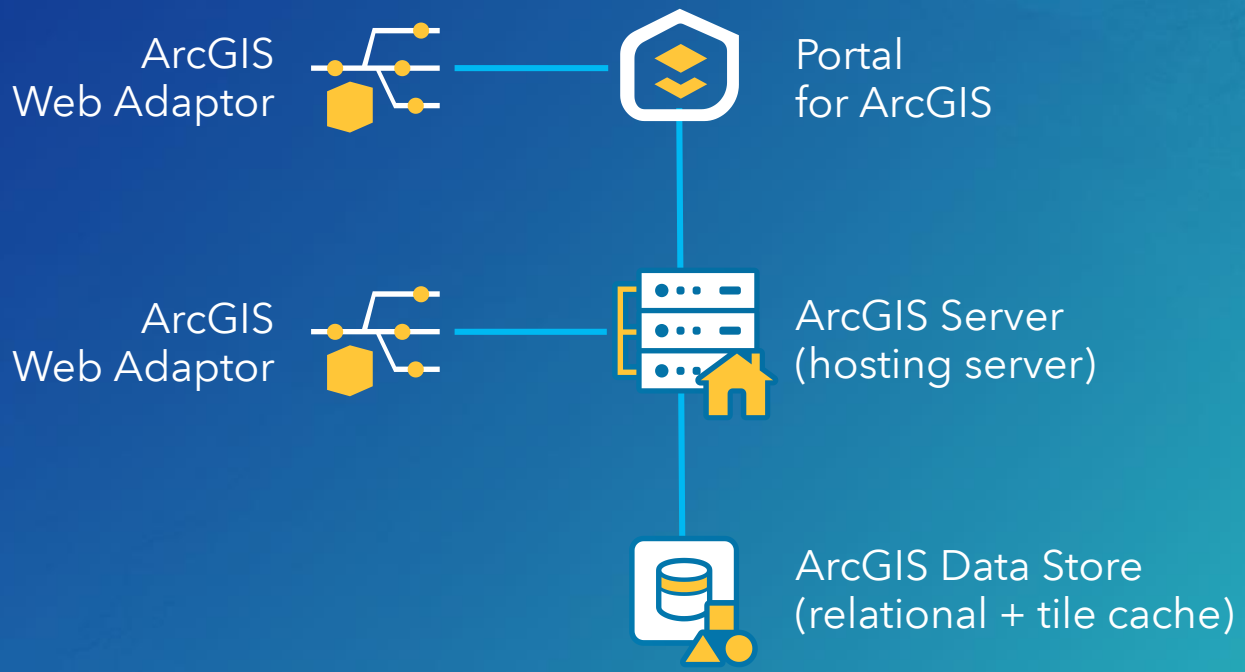
Base ArcGIS Enterprise Deployment

- **The base ArcGIS Enterprise deployment is the minimum configuration required to get started with ArcGIS Enterprise.**

- **It is comprised of:**
  - **ArcGIS Server**
  - **Portal for ArcGIS**
  - **ArcGIS Data Store**
    - Configured as the relational data store (minimum)
    - Add tile cache configuration for 3D visualization capabilities
  - **And two ArcGIS Web Adaptors (one for the Portal and one for the Server)**

Base deployment icon →

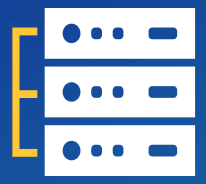
Logical Architecture of the Base Deployment



Analytical Capabilities

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

GIS Server

- Used as hosting server within the base deployment

Enables you to:

- Serve and manage geospatial data for your entire organization
- Powers traditional GIS web services and layers
- Serve advanced geoprocessing tools to be used beyond Desktop

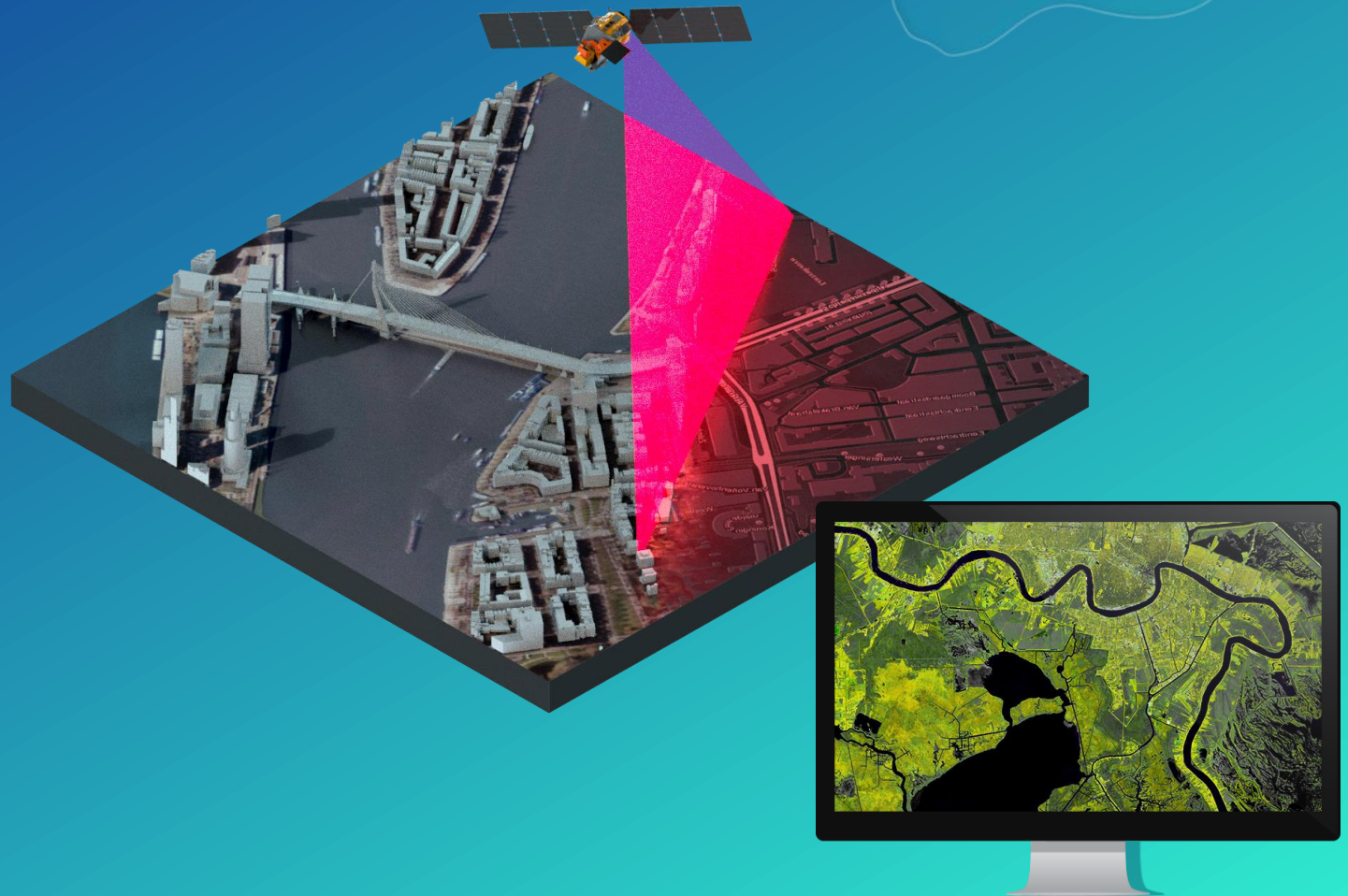
Image Server

with Raster Analytics

- Must be added to your base deployment.

Enables you to:

- Mosaic imagery and process dynamic raster models on the fly
- Use distributed analytics and storage to accelerate raster analysis
- Chain raster functions together to create complex raster analyses

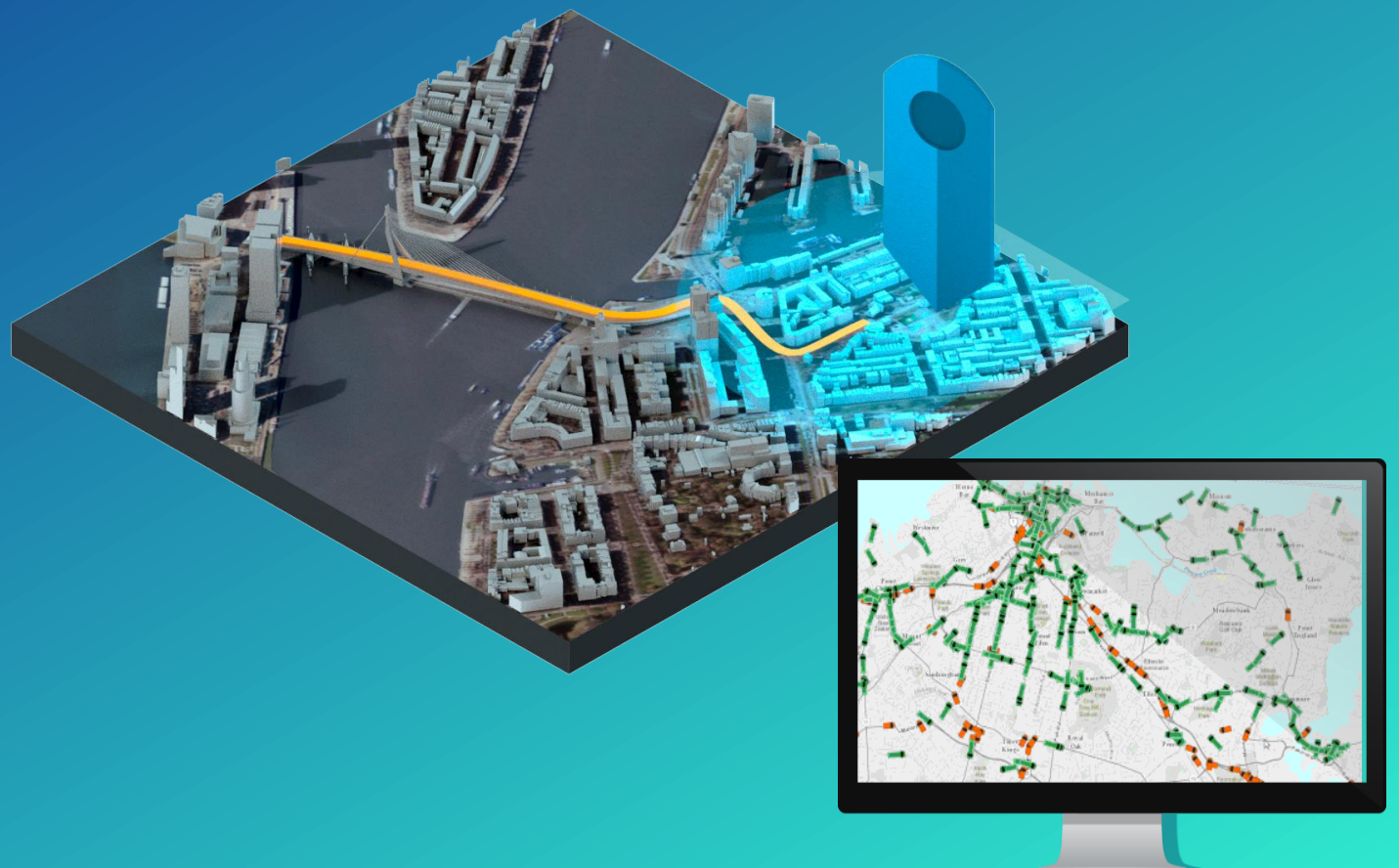


GeoEvent Server

- Must be added to your base deployment.
  Spatiotemporal data store - optional

Enables you to:

- Track things in real time
- Create geofences
- Perform geospatial and trend analysis on streaming data as it comes in
- Create event based alerts driven by live geospatial data

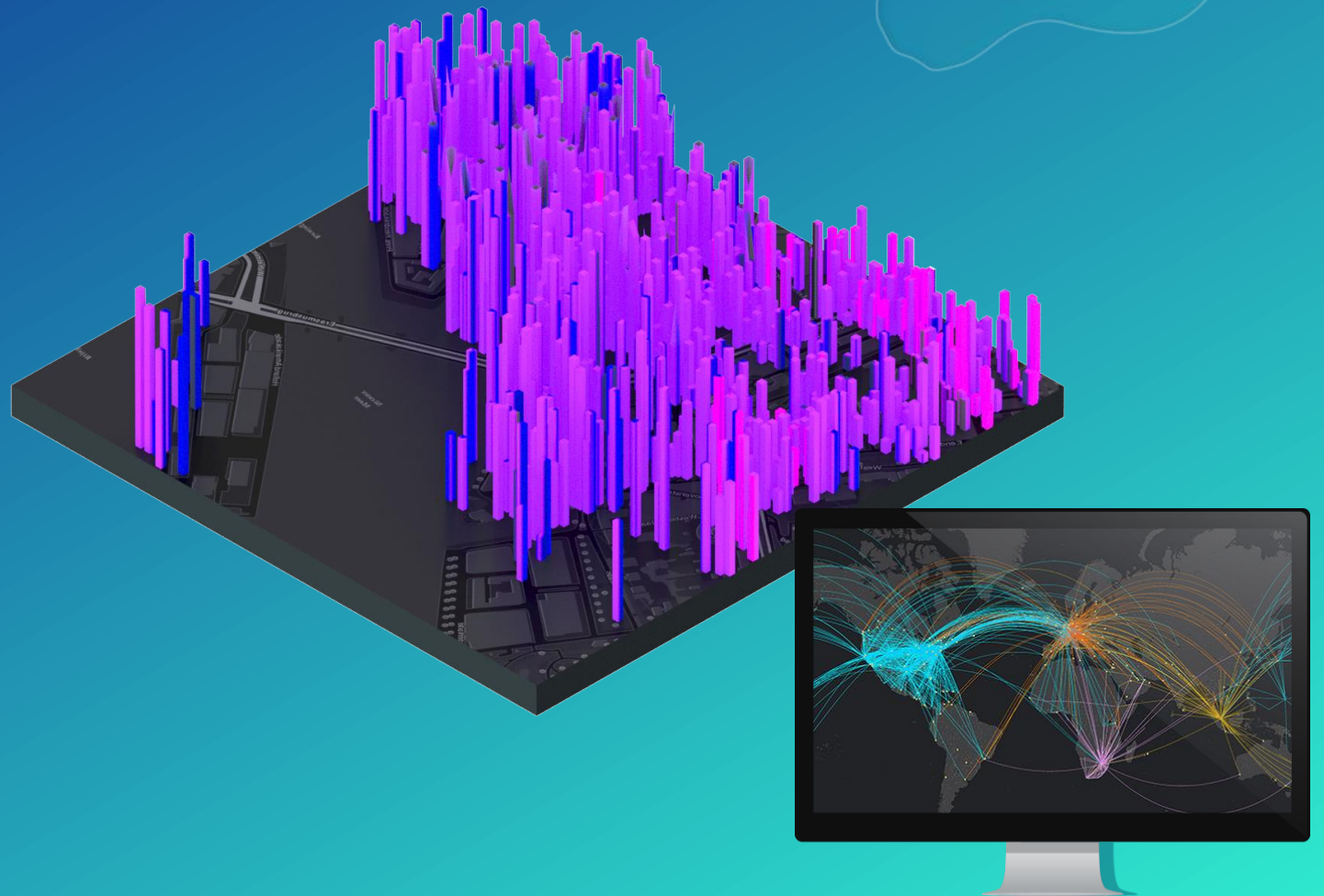


GeoAnalytics Server

- Must be added to your base deployment.
  Spatiotemporal data store - required

Enables you to:

- Perform space/time trend analysis on massive geospatial datasets
- Accelerate analysis of large datasets, even if they aren't "big data"
- Have an end-to-end solution for working with large volume datasets using the tools and software you already know



Business Analyst Server

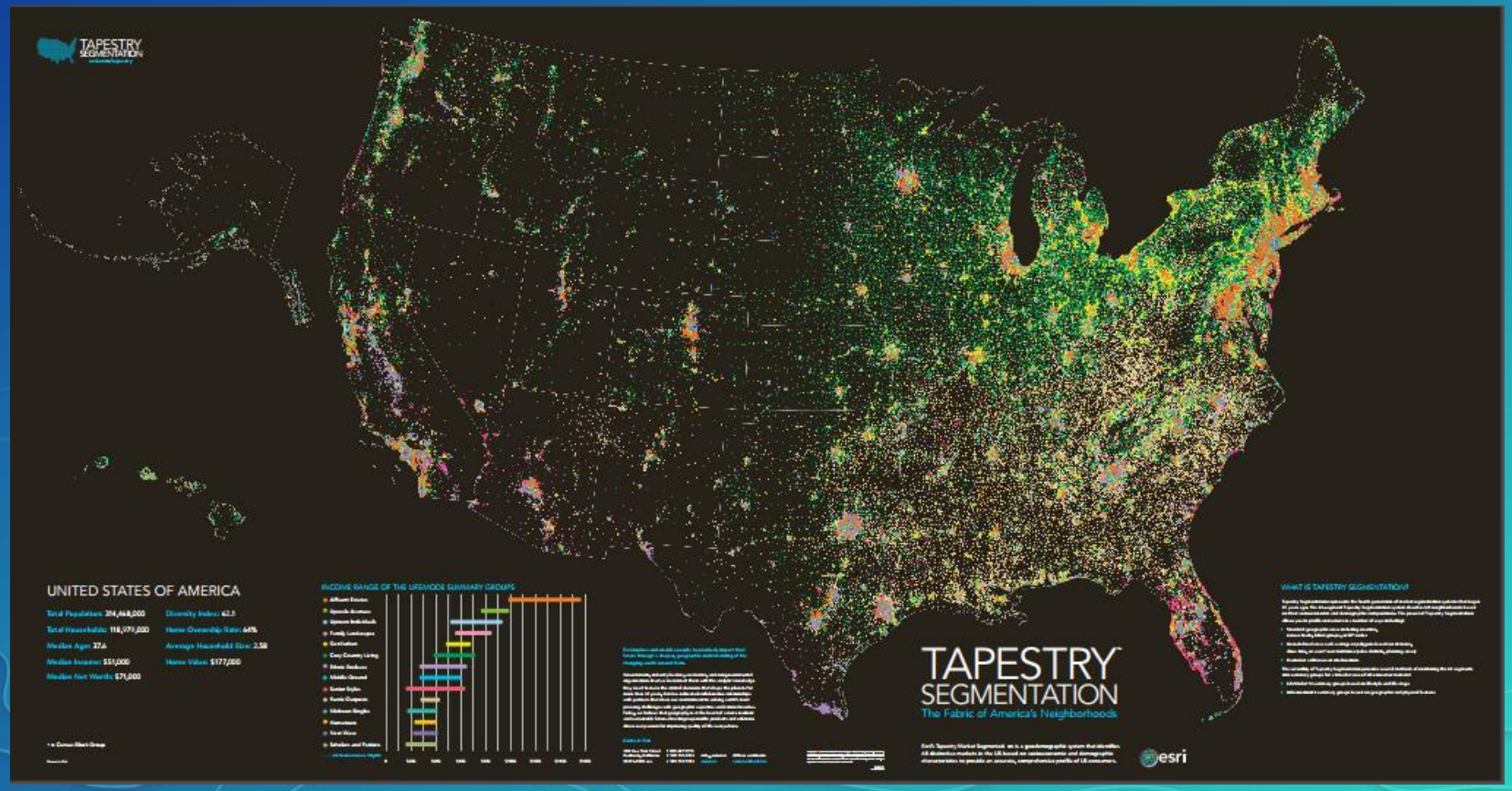
- Must be added to your base deployment.

Enables you to:

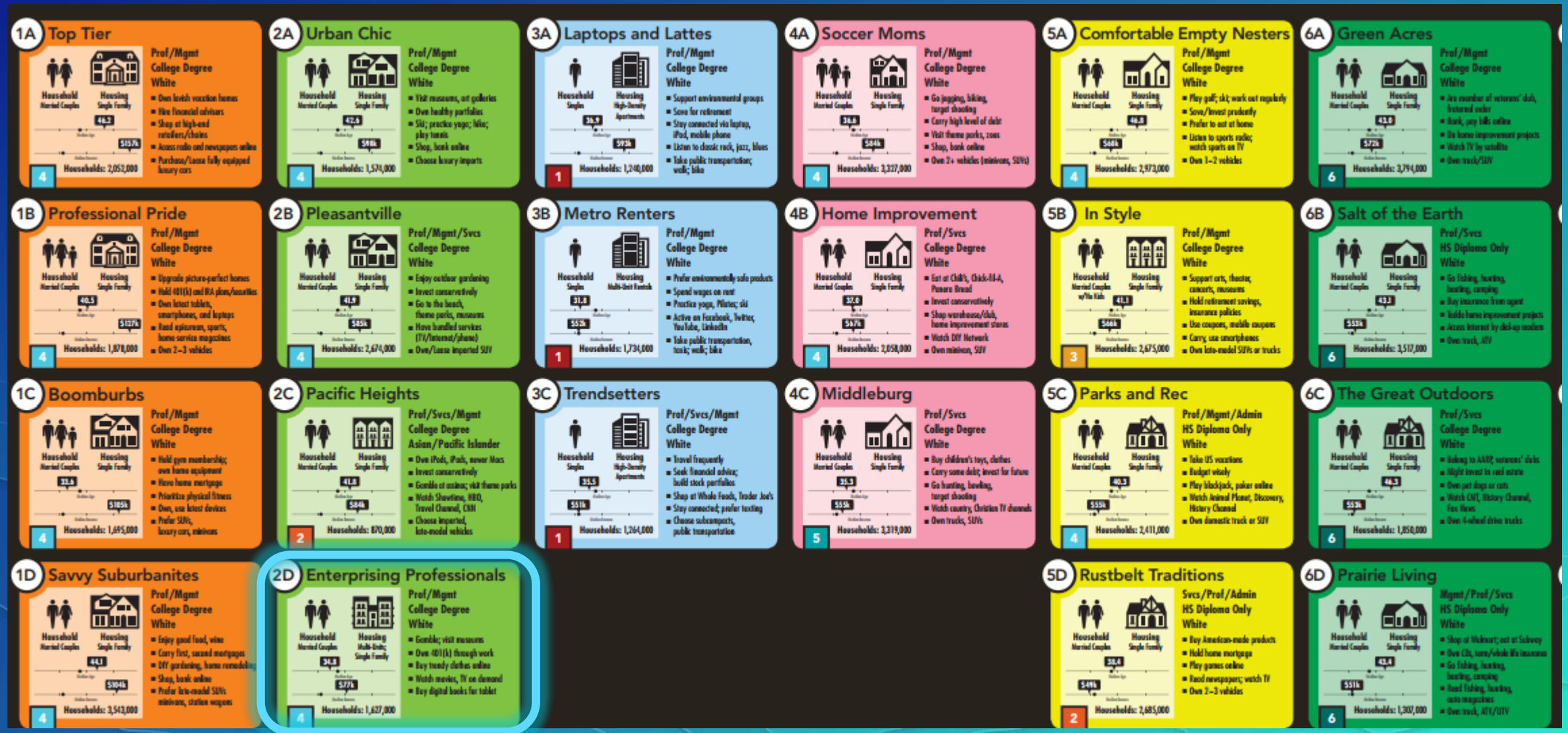
- Geospatially locate your target market
- Create market analyses specific to your geographic area of interest
- GeoEnrich your business intelligence data

Business Analyst Server

- **Esri Tapestry Segmentation data is included with Business Analyst Server**
- **Tapestry helps you understand your customers' lifestyle choices, what they buy, and how they spend their free time.**



Esri Tapestry Segmentation Data



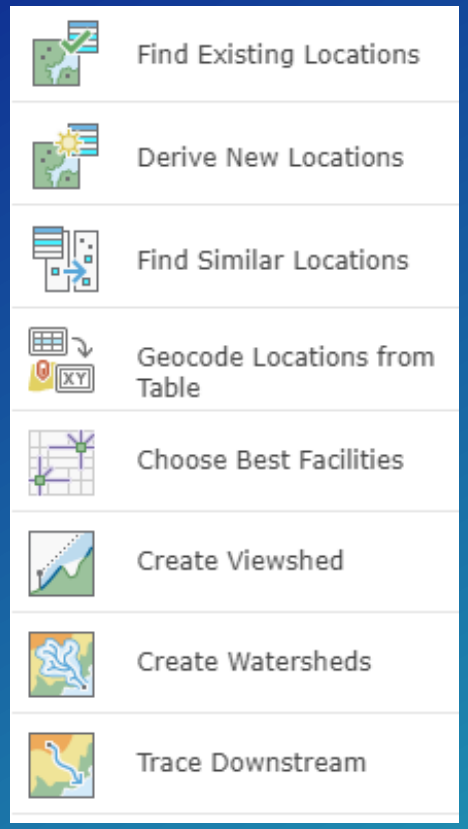
ArcGIS Enterprise: Architecting Your Deployment

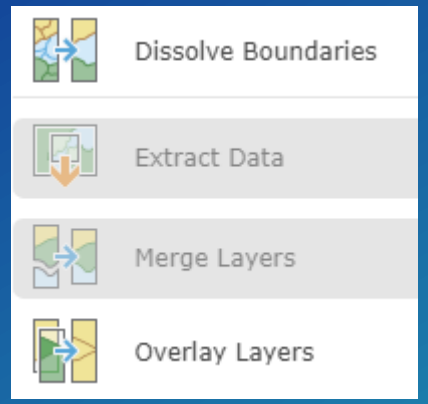
Wednesday, July 12
10:15 am – 11:30 am
Hilton Bayfront– Sapphire Ballroom A

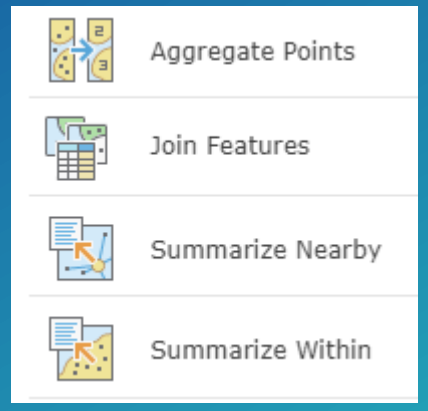
Wednesday, July 12
1:30 pm – 2:45 pm
SDCC Room 09

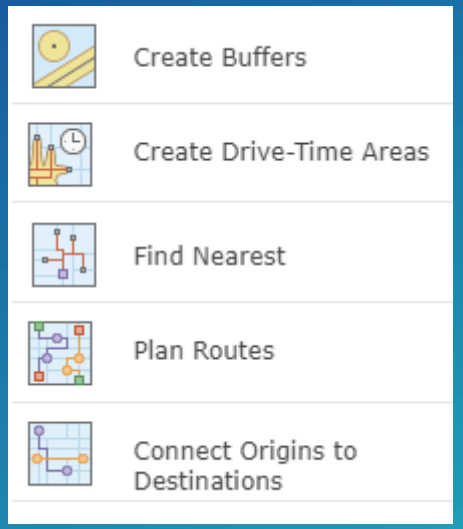
Standard Analysis Tools

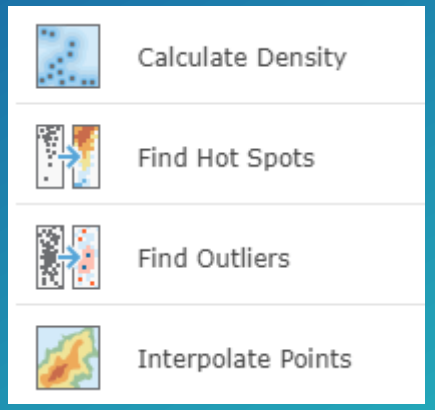
- **Ready to use tools as part of the base ArcGIS Enterprise deployment**
- **Output of standard analysis tools will be written to your relational ArcGIS Data Store**







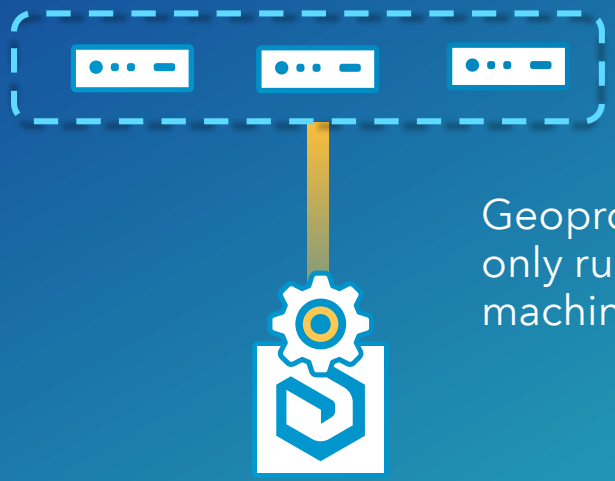




And more!

Distributed Analytics

- **Not a specific tool/toolbox, rather it is a way geoprocessing tools are computed**
- **GeoAnalytics Tools and Raster Analysis Tools use distributed analytics**
- **There are special considerations you should make regarding system architecture when planning to use these tools**



Geoprocessing job only runs on one machine in the site.

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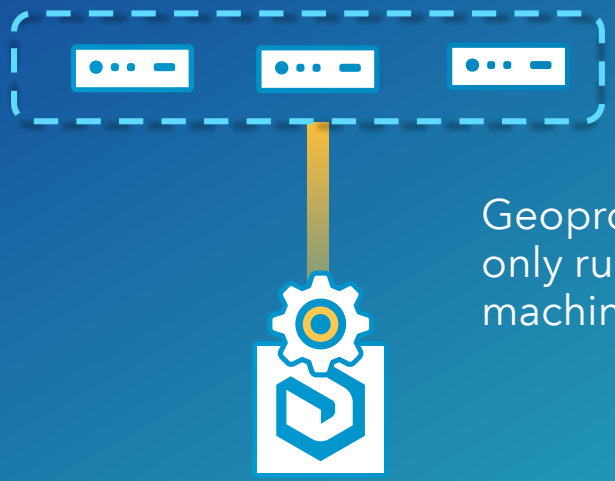

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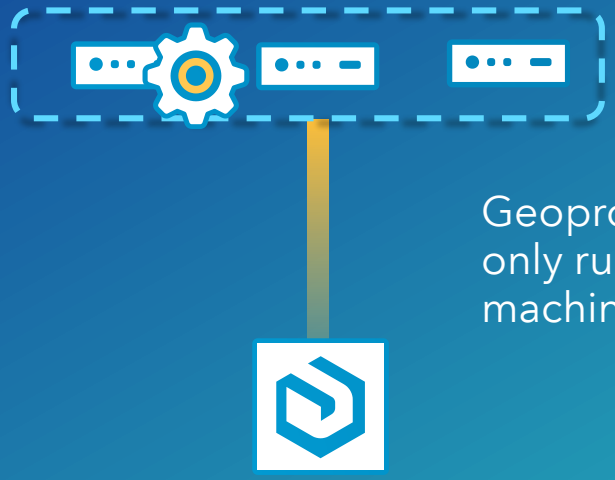

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Geoprocessing job is distributed across all the machines in the site.

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How/Where to use the server capabilities?

ArcGIS Enterprise portal

ArcGIS Pro

ArcGIS API for Python

ArcGIS REST API

How does ArcGIS Server work?

- **ArcGIS Server uses GIS Services to power your ArcGIS Enterprise**
- **How do GIS Services work?**
  - Use your on-premises GIS data from a variety of storage locations
  - Publish them to ArcGIS server to create a GIS Service
  - Use your GIS Services to enrich your Web GIS

Automating Web GIS

The ArcGIS API for Python allows you to automate and control your Web GIS. It can be installed on any computer and works with both ArcGIS Online and ArcGIS Enterprise via REST.

- Easy to use
- Scalable
- Modern

Demo: ArcGIS API for Python

Quick Look

Python: An Introduction

Tuesday, July 11
8:30 am – 9:45 am
SDCC Ballroom 06 C

Thursday, July 13
1:30 pm – 2:45 am
SDCC Room 04

ArcGIS Python API: Introduction to Scripting your Web GIS

Tuesday, July 11
10:15 am – 11:30 am
SDCC Room 09

Wednesday, July 12
10:15 am – 11:30 am
Hilton Bayfront- Sapphire Ballroom M

Administering ArcGIS Enterprise and ArcGIS Online with Python

Tuesday, July 11
8:30 am – 9:45 am
SDCC Ballroom 06 D

Thursday, July 13
8:30 am – 9:45 am
SDCC Ballroom 06 C

Administering ArcGIS Server

Quick Look: ArcGIS Server Manager

ArcGIS Enterprise: Managing ArcGIS Server

Tuesday, July 11
1:30 pm – 2:45 pm
SDCC Room 04

Thursday, July 13
3:15 pm – 4:30 pm
Bayfront Hilton- Sapphire Ballroom A

ArcGIS Enterprise: Administering Your Portal

Wednesday, July 12
1:30 pm – 2:45 pm
SDCC Room 03

Thursday, July 13
1:30 pm – 2:45 pm
SDCC Ballroom 06 E

Session Recap

- At 10.5 and forward, ArcGIS for Server is now ArcGIS Enterprise
- ArcGIS Enterprise is made up of a system of components that create a Web GIS
- The basic configuration of ArcGIS Enterprise is called a base deployment
- There are many rich analytic capabilities that you can leverage
- ArcGIS Enterprise can work with almost any data you bring to it
- It is services based, making it easy to share your content
- There are tools that will help you streamline the installation and configuration process
- The ArcGIS Python API is not required to use ArcGIS Enterprise, but it can help you script and automate your ArcGIS Enterprise deployment

questions?

esri
THE
SCIENCE
OF
WHERE