

# EXPLORE NEW LIFE BY BUILDING AN ESRI ENTERPRISE

KATE SCHEURER, GIS ANALYST @ OWATONNA PUBLIC UTILITIES



Amazon Web Services (AWS)



ESRI Enterprise



Putting it all together



# AMAZON WEB SERVICES (AWS) – KEY TERMS

- **VPC**

- Virtual Private Cloud logically isolated section of the AWS Cloud where you can launch AWS resources in a virtual network that you define. *\*AWS sandbox\**

- **EC2 Instance**

- Amazon EC2 Instance is a combination of CPU, memory, storage, and networking capacity *\*machine\**

- **Volume**

- Amazon EBS Volume is a durable, block-level storage device that you can attach to an instance. *\*disk\**

- **NAT Gateway**

- Network Address Translation (NAT) gateway to enable instances in a secure private subnet.

- **Elastic Load Balancer**

- Distributes incoming application or network traffic across multiple targets. *\*ports\**

- **Security Group**

- Controls the traffic for one or more instances. *\*firewall\**

# BACKING UP AWS

- **AMI – Amazon Machine Image**
  - Provides the information required to launch an instance
  - Contains operating system, application server, applications, and all permissions and volume mapping
  - Allows you to launch multiple instances with the same setup
- **Snapshots**
  - All information from the volume
  - Can be stored in Amazon S2

# Amazon Web Services - AWS

Region – US East (N. Virginia)

Virtual Private Cloud - VPC

Availability Zone (use1-az2)  
Public Subnet

Availability Zone (use1-az3)  
Private Subnet



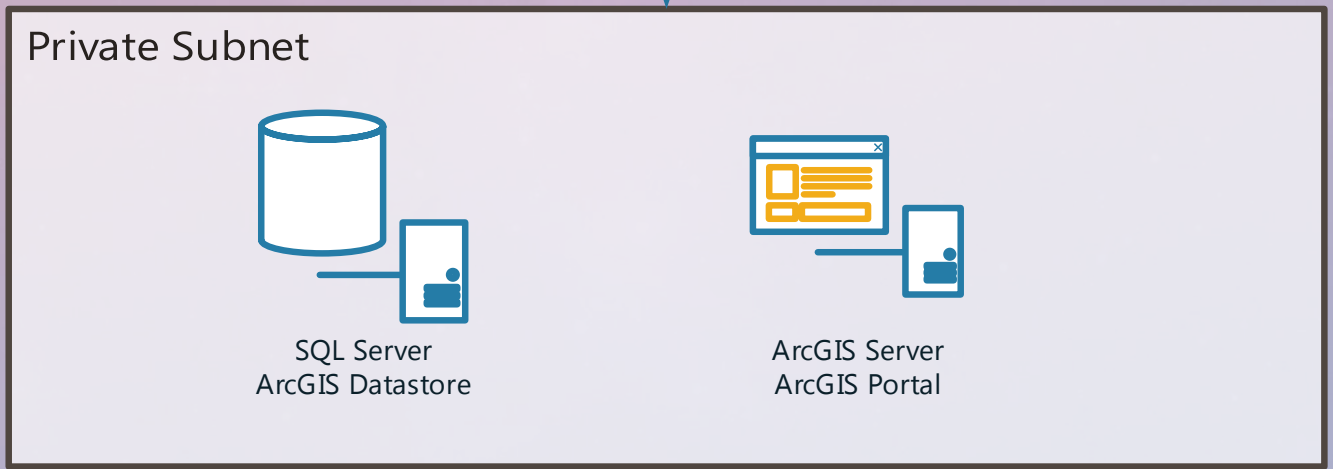
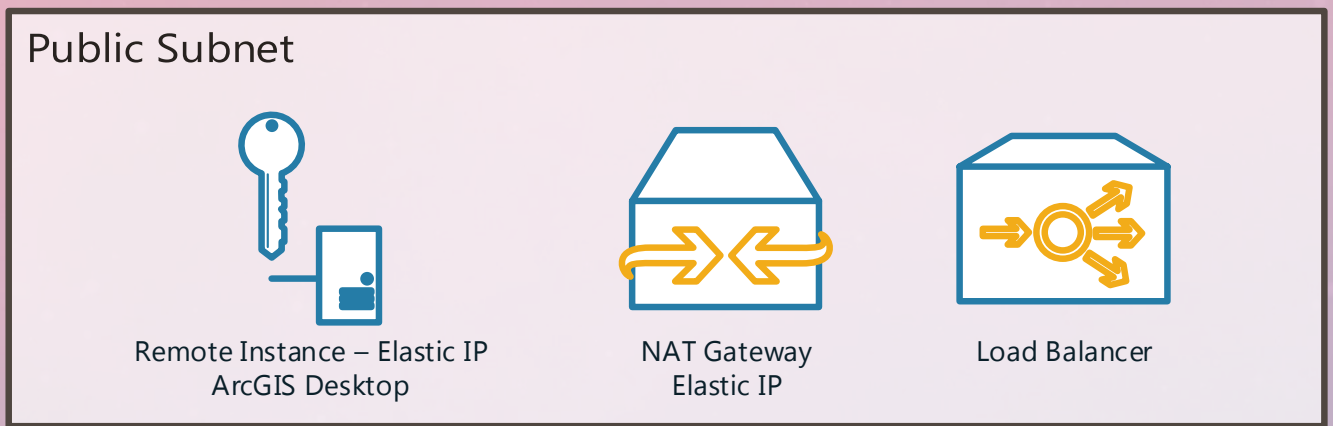
Internet Gateway

US West (N. California)

US West (Oregon)

US East (Ohio)

Virtual Private Cloud - VPC



# PROS AND CONS

## The Good

- **Security/Accessibility**
  - Traffic is controlled
  - Server security is wrapped in AWS
- Reliability
  - Hardware will not be down for maintenance or upgrades
- **Resources**
  - Can make machines bigger or smaller as needed
  - Deploy on demand instance for special processing

## The Bad

- **Extensive platform**
  - AWS can be overwhelming in the beginning
- **Limited direct data access**
  - Multiple direct data editors could add cost

# ARC GIS ENTERPRISE

ArcGIS Web  
Adaptor

Portal for  
ArcGIS

ArcGIS  
Server

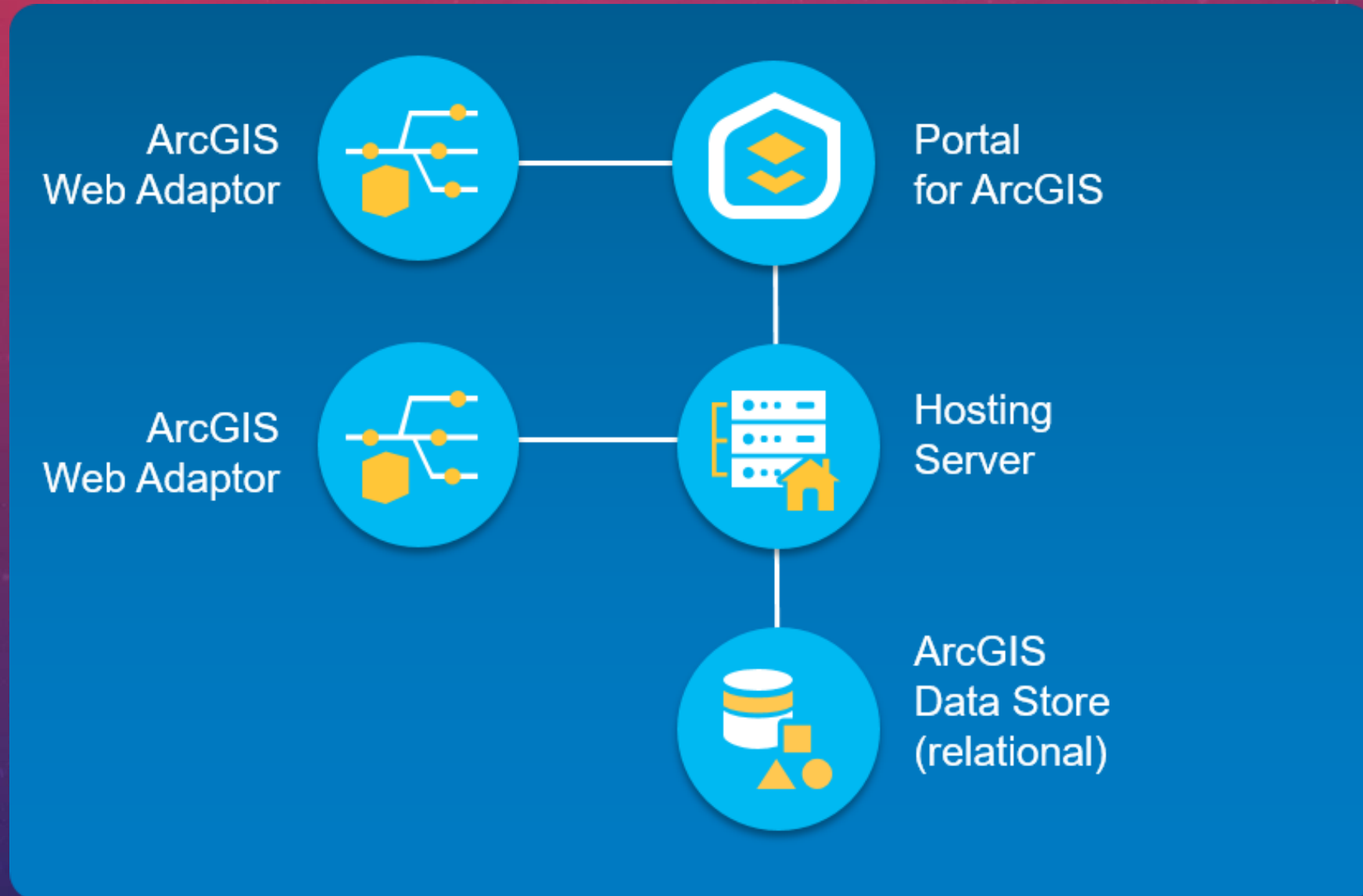
ArcGIS Data  
Store

ArcGIS  
Pro



# ENTERPRISE BASE DEPLOYMENT

(ON INFRASTRUCTURE **YOU** CONTROL)



# ARCgis DATA STORE

- Allows for analysis in web deployments
- **Relational data store**
  - Feature layers hosted by ESRI in your portal
- **Tile cache data store**
  - 3D cache from hosted scene layers
- **Spatiotemporal big data store**
  - Archived real time observational data
  - Used in GeoEvent and GeoAnalytics



ArcGIS  
Data Store

Relational  
Tile Cache  
Spatiotemporal

# ARCGIS SERVER

## Hosting server

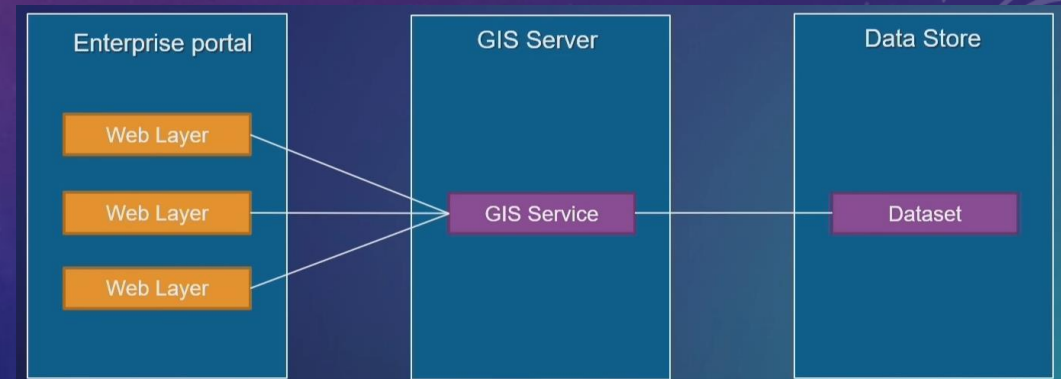
- Server that has your data stores registered to it
- Provides hosted services to your Portal
- Standard analysis and GeoAnalytics
- Batch geocoding
- Adding shapefiles or csv to a map
- Can also register SDE databases to the hosting server
- New licensing roles (previously extensions)
  - ArcGIS GIS Server, ArcGIS Image Server, ArcGIS GeoEvent Server, ArcGIS GeoAnalytics Server, ArcGIS Business Analyst Server



# PORTAL FOR ARCGIS

Similar to ArcGIS Online but administered by you

- Create, save, and share web maps, apps, and scenes.
- Find GIS content within your organization.
- Create groups to share GIS information with colleagues.
- Share map and layer packages to use in ArcGIS Desktop
- Create web layers for different views of a service.



# FEDERATION OF SERVER AND PORTAL

When Two Become One...



# ARCGIS WEB ADAPTOR

- Functions as a software load balancer, directing network traffic
- Enables web-tier authentication for ArcGIS Enterprise
- SSL Certificates are required



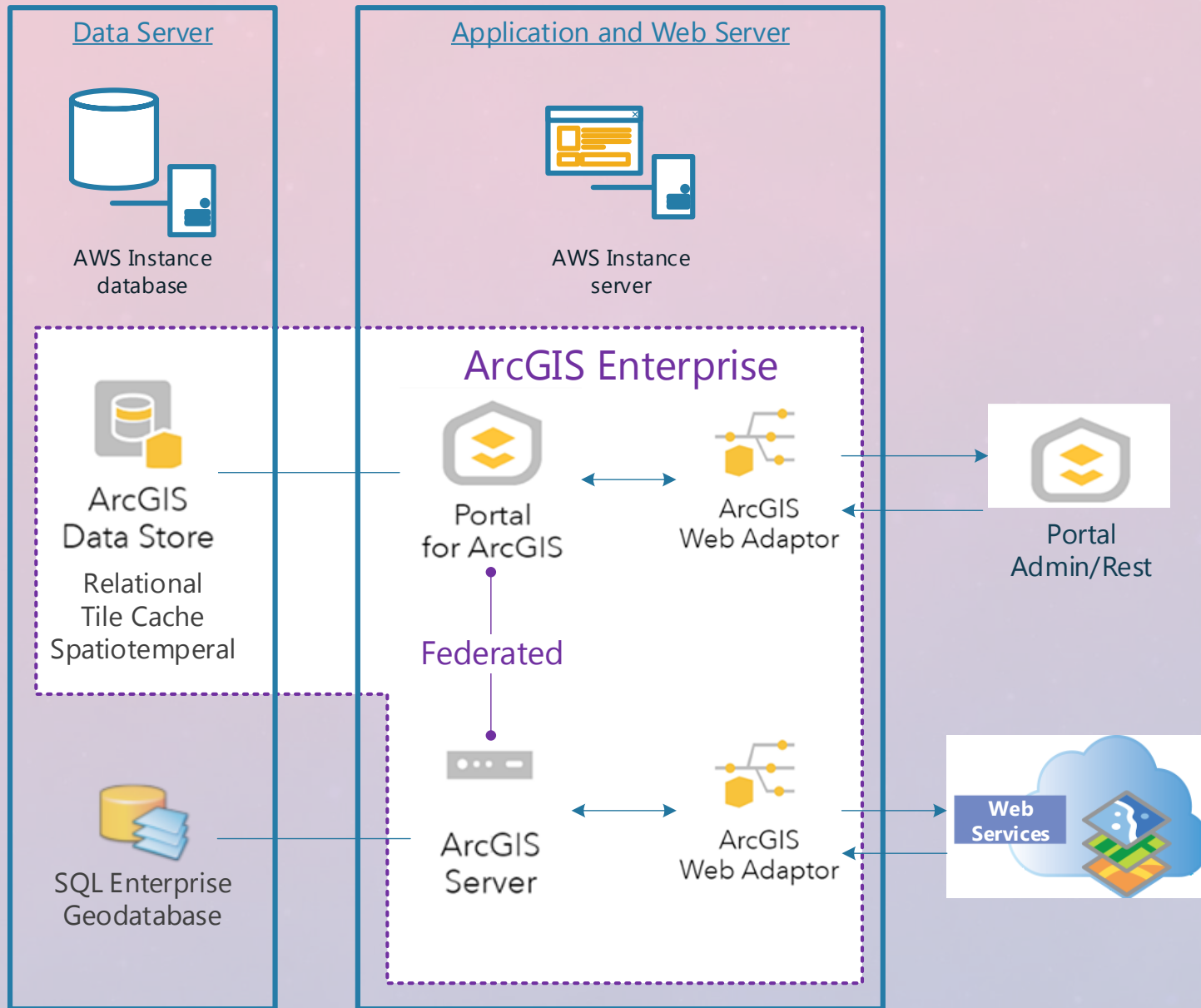
ArcGIS  
Web Adaptor

# ARCGIS PRO

- 64 bit program
- Uses the federation between portal and server to publish
- Licensing maintained in Portal or Online portal
  - Can use multiple portals in Pro
- Designed to be used with services
- Resource hog!! - may need to upgrade computers for users



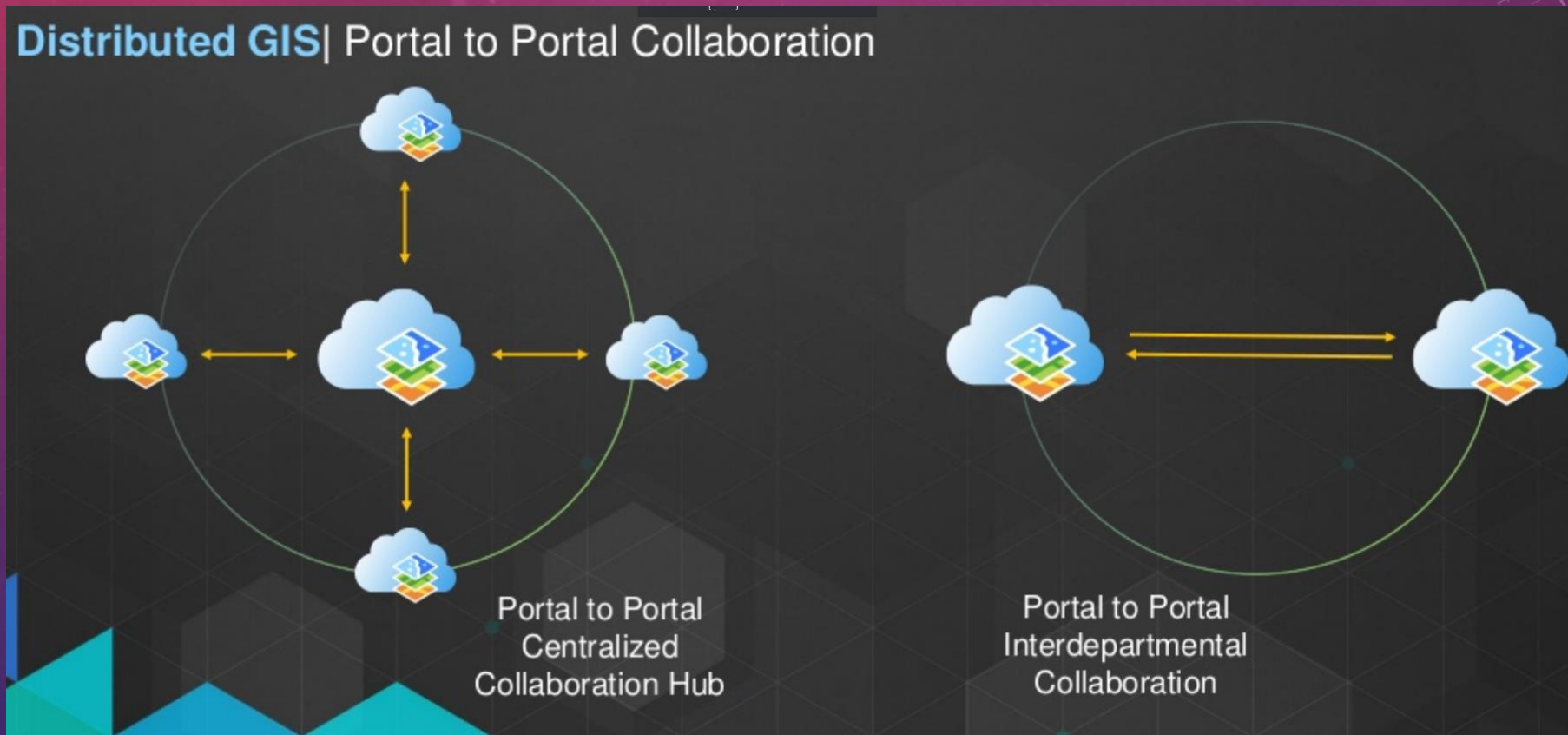
## ESRI GIS Deployment in Amazon Web Services



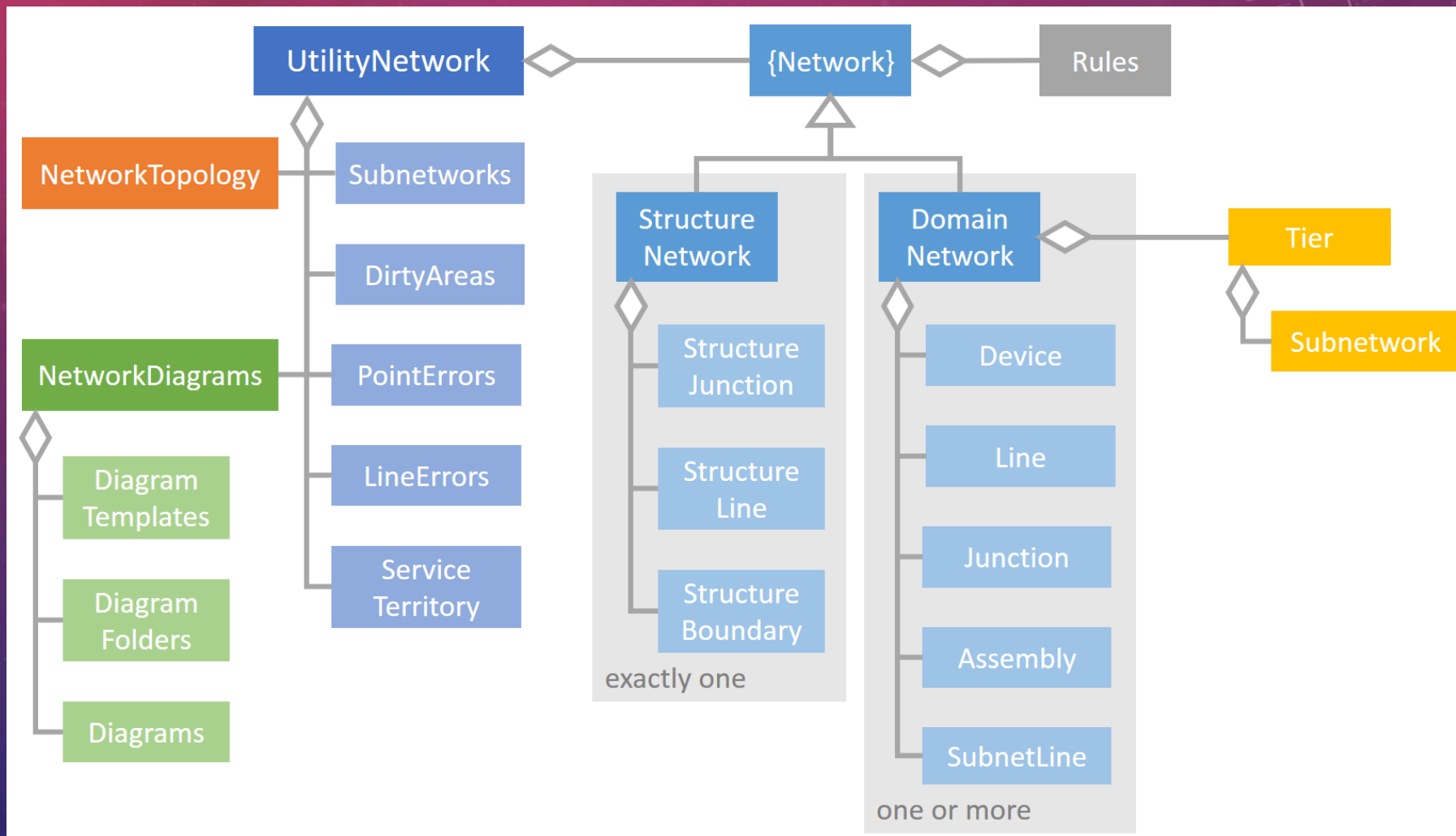


# BENEFITS OF MOVING TO ENTERPRISE PLATFORM

- Connection between Portal, Online, Server, and outside web sources



# ARCGIS UTILITY NETWORK MANAGEMENT



# ARCGIS ENTERPRISE SITES



## Data Sharing

Search, Visualize, Download, Create

This is the platform for exploring and downloading GIS data, discovering and building apps, and engaging others to solve important issues. You can analyze and combine datasets using maps, as well as develop new web and mobile applications. Let's achieve our goals together

## Find Data



## **ESRI ENTERPRISE**

INTRODUCTION TO AND BUILDING YOUR FIRST ARCGIS ENTERPRISE DEPLOYMENT

- [HTTPS://WWW.YOUTUBE.COM/WATCH?V=WHNMB2KNS0E&T=0S&LIST=WL&INDEX=8](https://www.youtube.com/watch?v=WHNMB2KNS0E&T=0S&LIST=WL&INDEX=8)

WHAT'S NEW IN ARCGIS ENTERPRISE – APRIL 2018

- [HTTPS://WWW.YOUTUBE.COM/WATCH?V=VRKOMEV4Q8E&LIST=WL&T=0S&INDEX=7](https://www.youtube.com/watch?v=VRKOMEV4Q8E&LIST=WL&T=0S&INDEX=7)

ARCGIS ENTERPRISE: TUNING AND SCALING

- [HTTPS://WWW.YOUTUBE.COM/WATCH?V=PMGGBMLIQC8&INDEX=3&LIST=WL&T=0S](https://www.youtube.com/watch?v=PMGGBMLIQC8&INDEX=3&LIST=WL&T=0S)

MIGRATING STANDALONE ARCGIS SERVER TO ARCGIS ENTERPRISE – WHITE PAPER

- [HTTPS://ASSETS.ESRI.COM/CONTENT/DAM/ESRISITES/EN-US/MEDIA/WHITEPAPER/MIGRATING-ARCGIS-SERVER-TO-ARCGIS-ENTERPRISE.PDF](https://assets.esri.com/content/dam/esrisites/en-us/media/whitepaper/migrating-arcgis-server-to-arcgis-enterprise.pdf)

ESRI ENTERPRISE 10.7 FUNCTIONALITY MATRIX – WHITE PAPER

- [HTTPS://ASSETS.ESRI.COM/CONTENT/DAM/ESRISITES/EN-US/MEDIA/BROCHURES/ARCGIS-ENTERPRISE-FUNCTIONALITY-MATRIX.PDF](https://assets.esri.com/content/dam/esrisites/en-us/media/brochures/arcgis-enterprise-functionality-matrix.pdf)

## **AMAZON WEB SERVICES**

VPC DESIGN AND NEW CAPABILITIES FOR AMAZON VPC

- [HTTPS://WWW.YOUTUBE.COM/WATCH?V=RQVL-V3TLIQ](https://www.youtube.com/watch?v=RQVL-V3TLIQ)

AWS VPC & SUBNETS | AMAZON WEB SERVICES BASICS

- [HTTPS://WWW.YOUTUBE.COM/WATCH?V=BGDMED6KOZO](https://www.youtube.com/watch?v=BGDMED6KOZO)

AWS VPC MASTERCLASS WEBINAR (2018) - PART 1

- [HTTPS://WWW.YOUTUBE.COM/WATCH?V=LX5LHYGFCNA](https://www.youtube.com/watch?v=LX5LHYGFCNA)

# RESOURCES

The background features a gradient from purple at the top to blue at the bottom, overlaid with numerous out-of-focus circular bokeh spots. On the left side, there are several semi-transparent technical diagrams, including circular gauges with numerical scales (e.g., 140, 150, 160, 170, 180, 190, 200, 210, 220, 230, 240, 250, 260) and various circular arrows indicating motion or flow.

THANK YOU!

[KATHERINE.SCHEURER@OWATONNAUTILITIES.COM](mailto:KATHERINE.SCHEURER@OWATONNAUTILITIES.COM)