

ArcGIS Enterprise: Deployment Options

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System Architect



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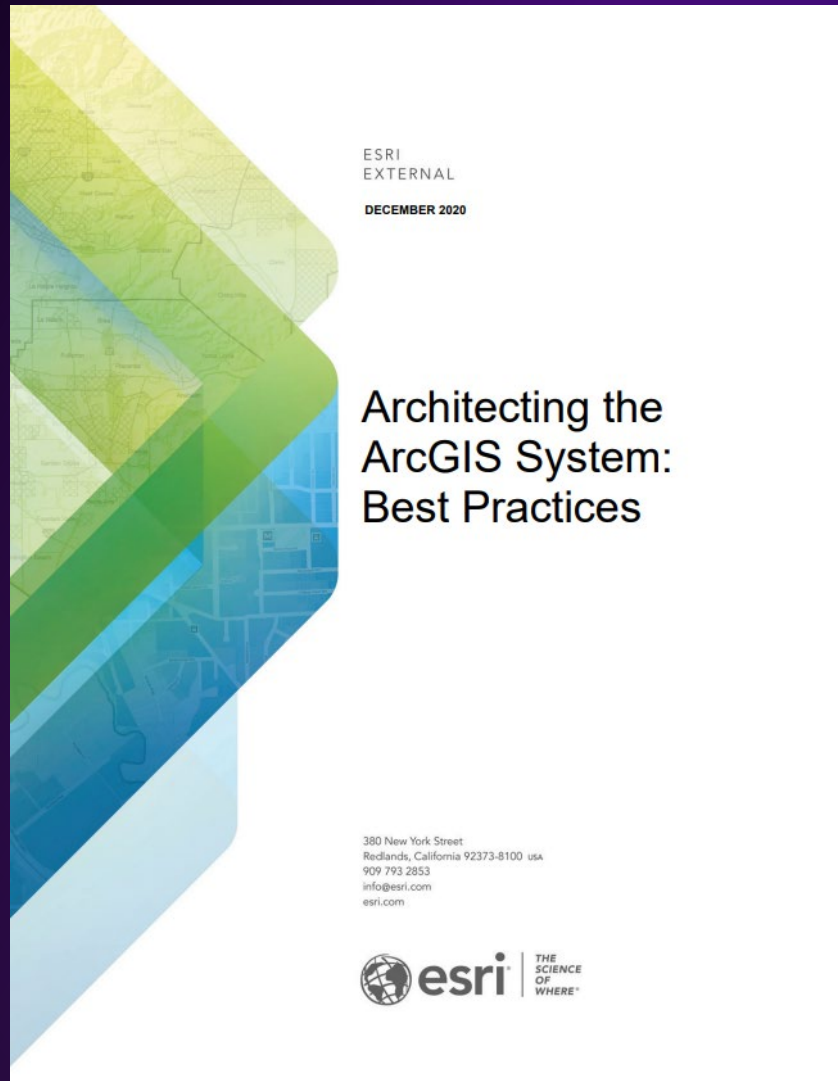


ArcGIS Architecture

Design Considerations

Design Considerations – Architecting ArcGIS System

<https://go.esri.com/bp>



Understand



Plan

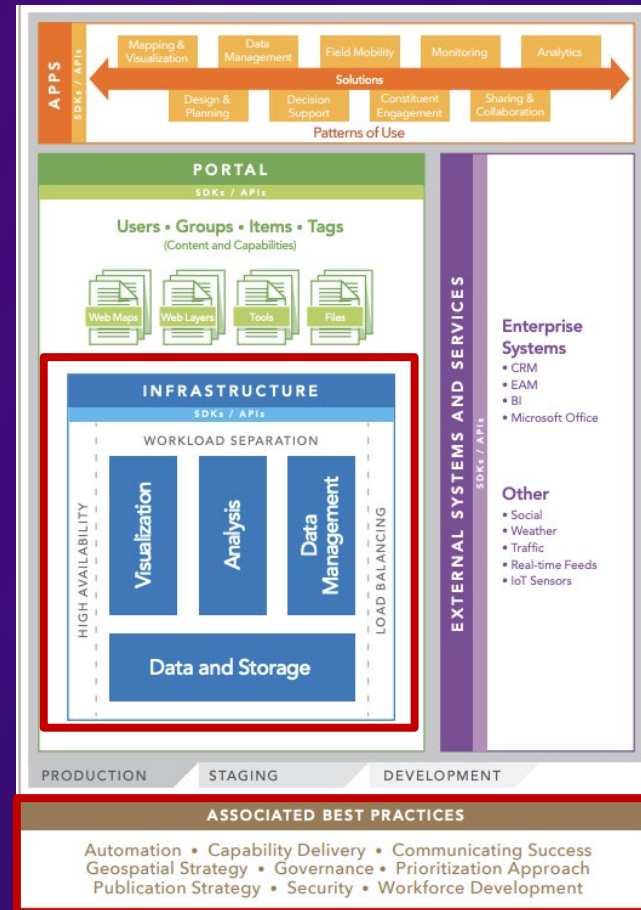


Act



Design Considerations – Architecting ArcGIS System

The ArcGIS Platform Conceptual Reference Architecture



Design Considerations – Architecting ArcGIS System

Automation

Automation is the orchestration of tasks, processes, and workflows to streamline administration and productivity, reducing risk and increasing the value of your investment in ArcGIS.

Increasing the Value of ArcGIS Through Automation

Repetitive tasks are common when using GIS technology for management, analysis, map production, and deployment and operations. Repetitive manual tasks consume time, effort, and focus; decrease overall productivity; and increase risk. These impacts are compounded as the number of tasks grows.

You can mitigate these impacts through automation. Automation allows technology to create and maintain infrastructure, programmatically execute the steps of a well-defined process, and limit human interaction. Common tools include APIs and scripts.

Automation maximizes your investment in ArcGIS by:

1. **Efficiency.** Information is most useful when it is delivered in a timely manner. Because automating tasks and resource allocation improves efficiency, work can be completed faster. New information can be delivered to stakeholders sooner. This boost in efficiency allows greater value to the business.
2. **Consistency.** When tasks are executed consistently, outcomes are more predictable. Automated processes are highly repeatable. Automated processes save time and reduce risk.
3. **Productivity.** Automation can improve workflow efficiency. By using automation to execute repetitive tasks, overall productivity is increased. This lets you apply research and development efforts, and

With automation, you can improve administrative tasks. This improves operational efficiency and frees resources for other tasks and boosting the value of your investment in ArcGIS.

Recommendations

To maximize the benefits of automation and reduce risk, you should:

1. Automate tasks where human error can be reduced.
2. Automate lengthy tasks so processes can be completed faster.
3. Schedule automated tasks so they run during off-peak hours.

High Availability

High availability is a design approach that helps ensure that a system is available to users for a specific period of time.¹ Highly available systems meet or exceed their business requirements.

Strategies for Maximizing System Availability

High availability is a set of strategies for minimizing system downtime. Because GIS is part of critical business processes, high availability strategies to GIS. By using high availability strategies, system architects can mitigate the risk of system downtime.

Before designing a solution for high availability, you should understand the typical percentage of required service uptime (also known as availability). This information is typically expressed as a percentage of required service uptime (also known as availability). Your SLA will define the required availability.

To maximize your system's performance and availability, you should:

1. **Reduce single points of failure.** Redundancy is a key strategy for high availability. Duplication of critical system components, such as servers, storage, and network, can help ensure that the system remains available in the event of a failure.
2. **Develop and execute test plans.** Testing is a critical part of high availability. Test plans should be developed and executed regularly to ensure that the system is able to handle high loads and recover from failures.
3. **Monitor the health of the system.** Monitoring tools can help detect potential issues before they cause a system outage. Monitoring should be implemented for all critical system components.

By designing your ArcGIS implementation for high availability, you can ensure that your system meets your SLA commitments, and satisfy your users' expectations.

Recommendations

To implement a high-availability design for your ArcGIS system, you should:

1. Use duplication and load balancing to ensure that the system can handle high loads.
2. Test the system regularly to ensure that it can recover from failures.
3. Monitor your system to catch issues before they cause a system outage.

¹ High Availability (HA), while related to Disaster Recovery (DR), is focused on ensuring that the system is available to users for a specific period of time. When DR plans are executed, it is focused on restoring the system to a previous state.

Workload Separation

Workload separation is a design approach that aligns your technical implementation with your organization's business requirements. You can use this approach to maximize system performance, reduce risk, and improve reliability.

Provide Better, More Reliable Service

Different business functions impact the performance of the ArcGIS platform in different ways. By allocating workloads to appropriate server resources organized by business function, you can maximize performance, reduce risk, and meet business-defined Service Level Agreements (SLAs). By implementing geospatial function isolation, you can reduce the risk that high-intensity processes will consume cycles needed to support critical applications, or that an abnormal spike in requests will disrupt service for all users. You should:

1. **Maximize system performance** by directing service requests to compute resources in a way that optimizes the use of your hardware and reduces resource contention. For example, you can direct processor-intensive analysis tasks to an ArcGIS Server site containing machines with fast processors, while directing less intensive tasks to more modest machines. This makes the best use of your compute resources to achieve the highest level of performance.
2. **Reduce the risk of service interruption** by routing user requests to the appropriate sites through load balancers. This enhances system stability by preventing overloaded machines from affecting other machines, which in turn protects critical tasks from resource contention.

An example of workload separation involves the isolation of analytic tasks from decision support tasks. Back-office analytics are typically CPU-intensive, executed sporadically, and maintained by lower SLAs. Because analysts use geoprocessing tasks in an ad hoc fashion, the CPU may sit idle but then spike when several tasks are executed. On the other hand, decision support activities simply consume map-based information products to drive operational business decisions. They are typically less CPU-intensive, executed more consistently, and maintained by higher SLAs. Because these tasks and workflows are so different, you can use workload separation to accommodate each set of activities.

Recommendations

To take advantage of workload separation in your environment, you should:

1. Consider different business workflows to understand how each workflow impacts compute resources, and then use segregated and preplanned resource allocation to meet the needs of each workflow.
2. Allocate hardware around core GIS capabilities, as shown in figure 16.
3. Use GIS [Patterns of Use](#), SLAs, and performance expectations to determine how to best direct workloads to appropriate compute resources.
4. Direct CPU-intensive service requests to sites containing machines with faster processors, and direct less intensive requests to more modest machines.

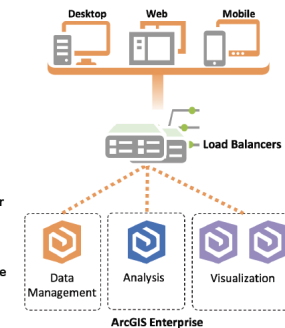
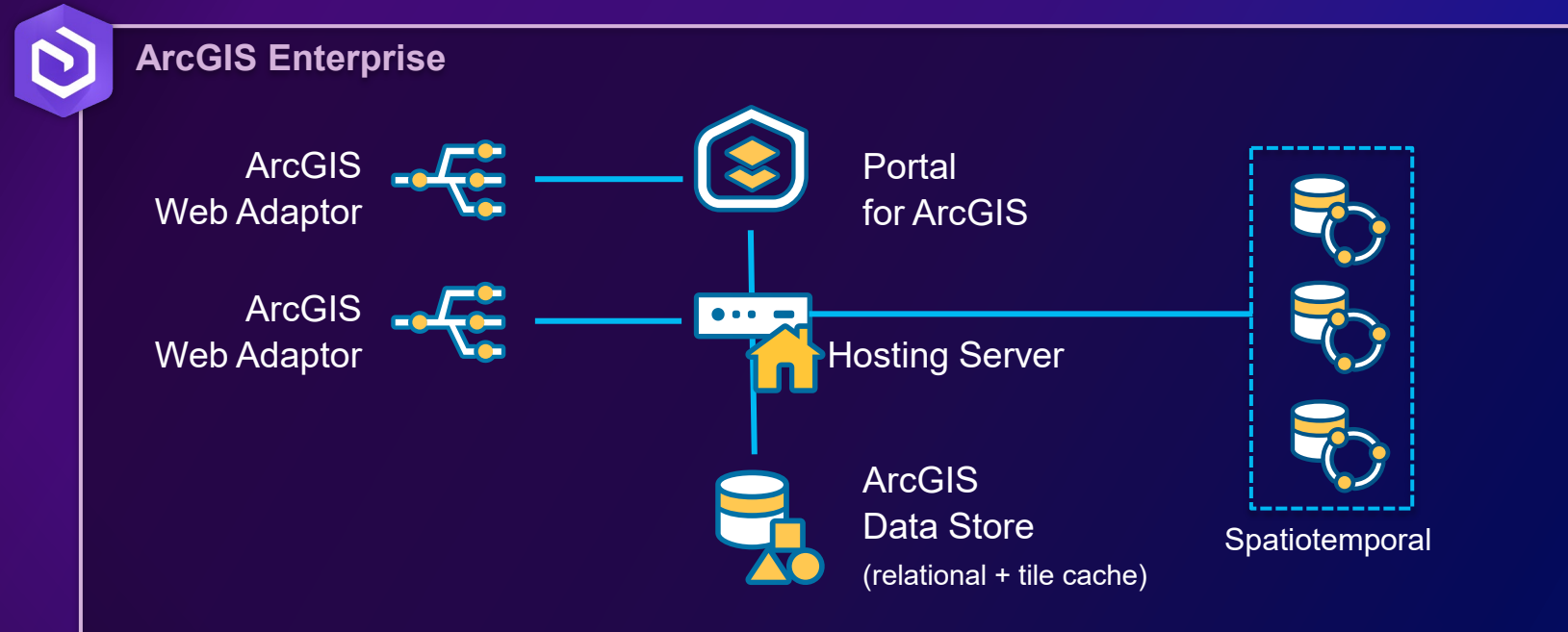


Figure 16: Organize your infrastructure components by business function.

Architecture



Federated



ArcGIS
Server



Notebook
Server



GeoAnalytics
Server



Image Server
ImageHosting



Image Server
RasterAnalytics



GeoEvent
Server



GeoEnrichment
Server

ArcGIS Enterprise Deployment

Automate

Enterprise Deployment Automation

- Simple Automation



- ArcGIS Enterprise Builder



- ArcGIS Enterprise Cloud Builder for Azure



- ArcGIS Enterprise Cloud Builder for AWS

- AWS CloudFormation Templates

Enterprise Deployment Automation

- Simple Automation



- ArcGIS Enterprise Builder



- ArcGIS Enterprise Cloud Builder for Azure



- ArcGIS Enterprise Cloud Builder for AWS

- AWS CloudFormation Templates

- Advanced Automation

- PowerShell

- Chef



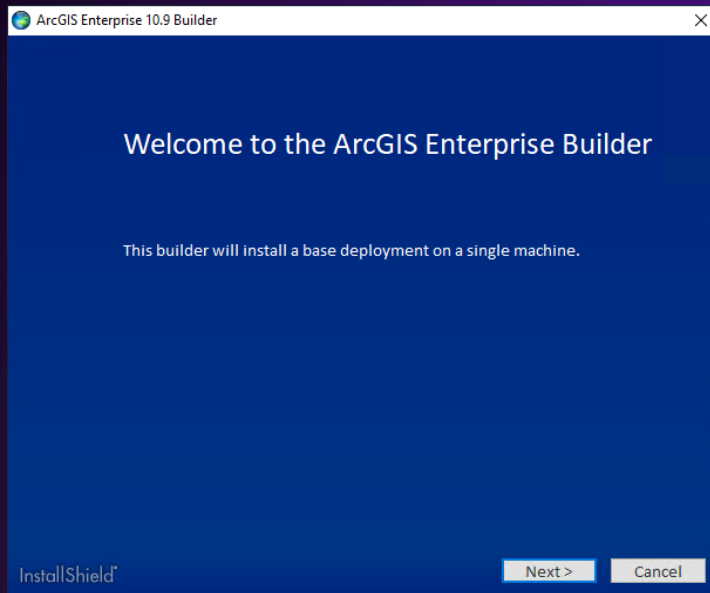
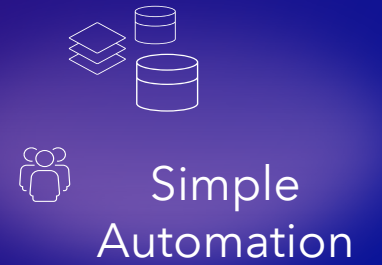
PowerShell
DSC

Enterprise Deployment Automation

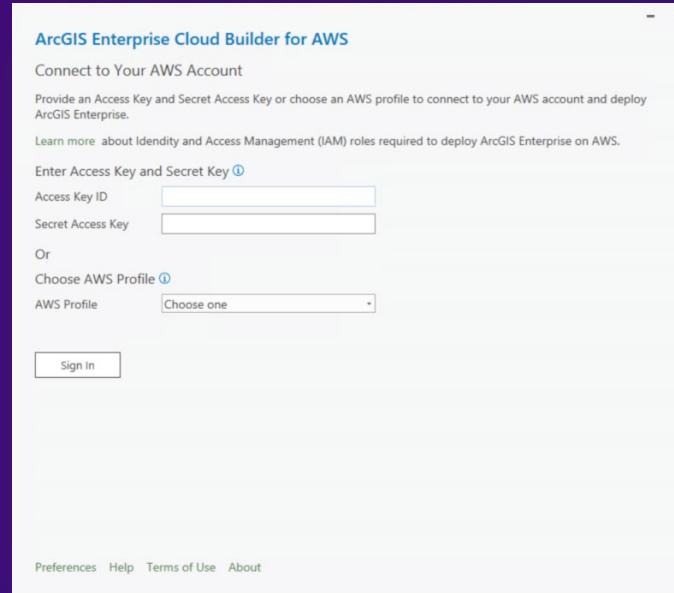
<https://www.esri.com/content/dam/esrisites/en-us/media/brochures/arcgis-enterprise-functionality-matrix.pdf>

DEPLOYMENT CHARACTERISTICS	Automation tool				
	Chef	PowerShell DSC	AWS	Azure	ArcGIS Enterprise Builder
Cloud deployments	•	•	•	•	
On-premises deployments	•	•			•
Windows OS	•	•	•	•	•
Linux OS	•		•		•
Single-machine deployments	•	•	•	•	•
Multi-machine deployments	•	•	•	•	
High-availability deployments	•	•	•	•	
Base ArcGIS Enterprise deployment setup	•	•	•	•	•
ArcGIS Server setup	•	•	•	•	
Image Server setup	•	•	•	•	
GeoEvent Server setup	•	•	•	•	
GeoAnalytics Server setup	•	•	•	•	
Notebook Server setup ¹²	•	•	•	•	
Can be used to upgrade the deployment ¹³	•	•	•	•	•
Configurable deployment templates	•	•	•		
Configurable machine images			•	•	
Command line interface	•	•	•	•	•
Wizard-style interface			•	•	

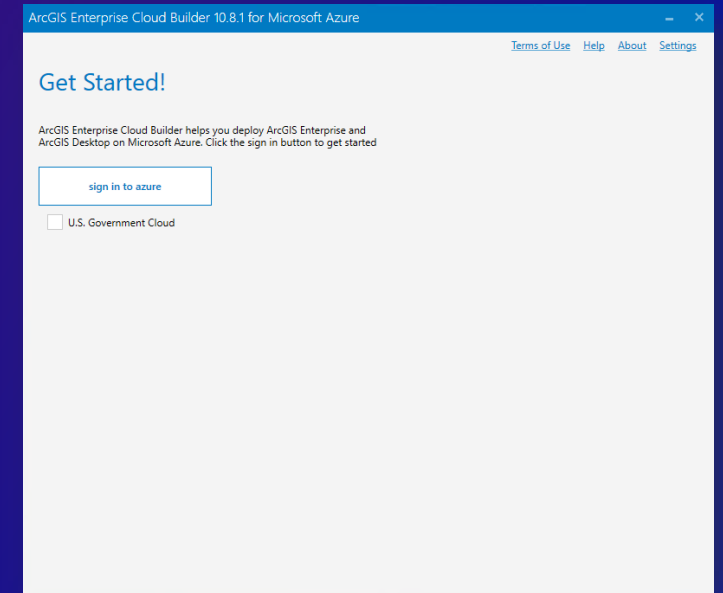
ArcGIS Enterprise Deployments



ArcGIS Enterprise
Builder



ArcGIS Enterprise
Cloud Builder for AWS



ArcGIS Enterprise Cloud
Builder for Azure

Single Machine Deployment

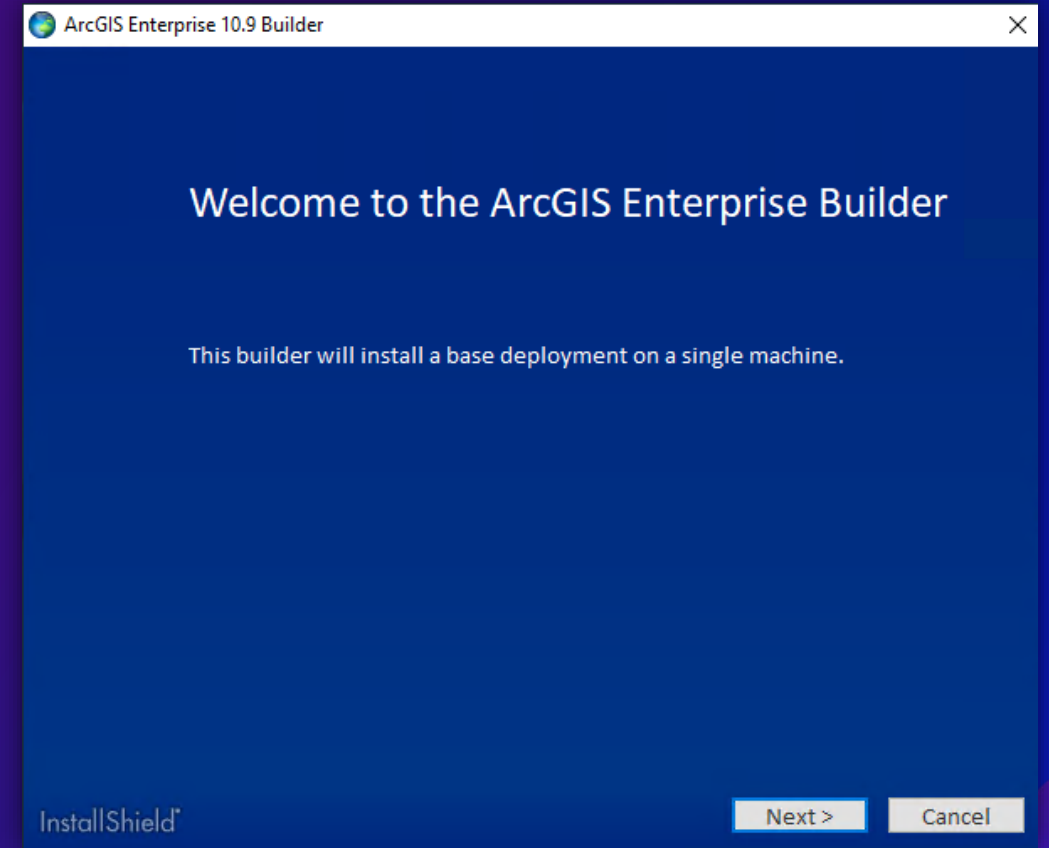
- **ArcGIS Enterprise Builder**

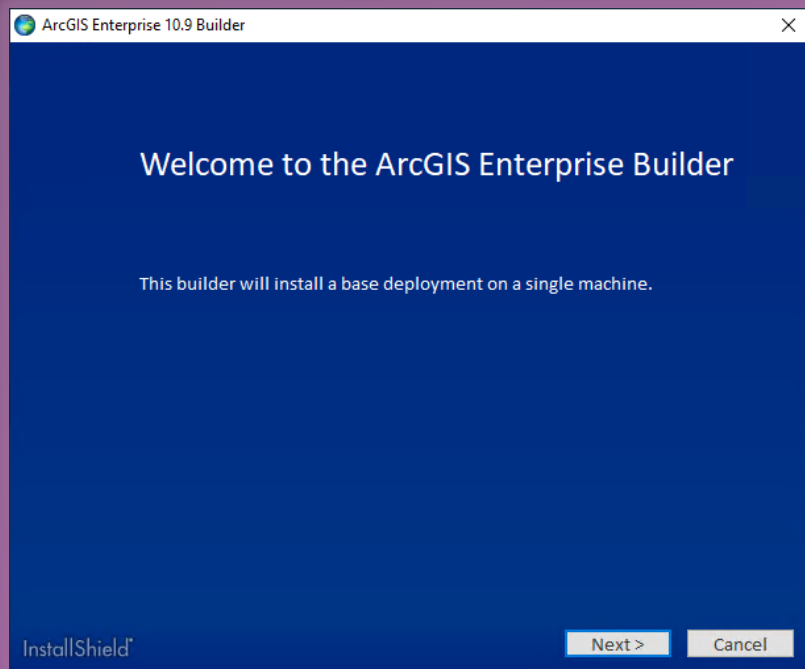
- Simple
- **Single Machine Deploy**
- Upgrade

- **Prerequisites**

- **Files**

- Portal License File
- Server License File

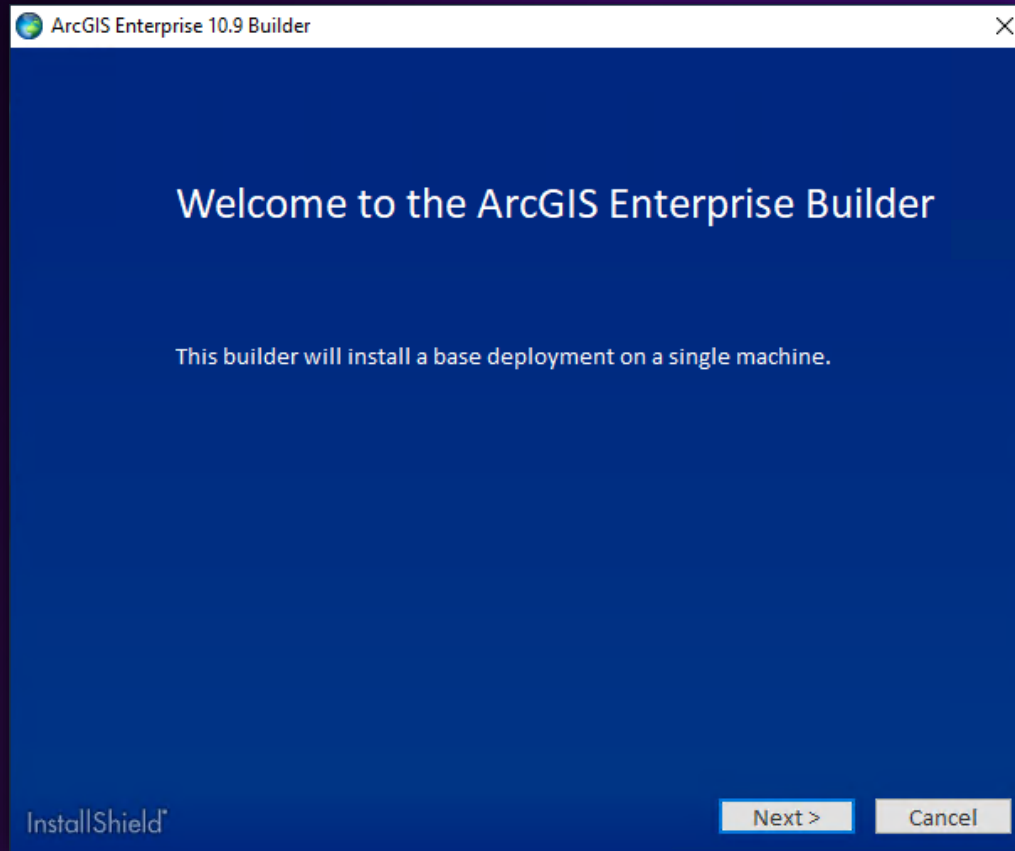




ArcGIS Enterprise Builder

Review

ArcGIS Enterprise Builder



ArcGIS Enterprise Builder

ArcGIS Enterprise 10.9 Builder

Destination Folder

Specify a location where your ArcGIS Enterprise components will be installed.

C:\Program Files\ArcGIS Change...

Disk space required: 30 GB
20 GB on your installation drive and an additional 10 GB on your C: drive.

InstallShield® < Back Next > Cancel

ArcGIS Enterprise 10.9 Builder

ArcGIS Enterprise Account

Specify the account username and password that all processes will run as.

User name:

Password:

Confirm Password:

This can be an account local to this machine, or a domain account. If you specify a local account that does not already exist, it will be created for you.

InstallShield® < Back Next > Cancel

ArcGIS Enterprise Builder

ArcGIS Enterprise 10.9 Builder

Web Adaptor Configuration

Specify the names to use when accessing your portal and services.

Enterprise portal:
Example: <https://host.domain.com/portal/home>

Services:
Example: <https://host.domain.com/server/rest>

InstallShield®

< Back Next > Cancel

ArcGIS Enterprise 10.9 Builder

Software Authorization

Provide an authorization file.

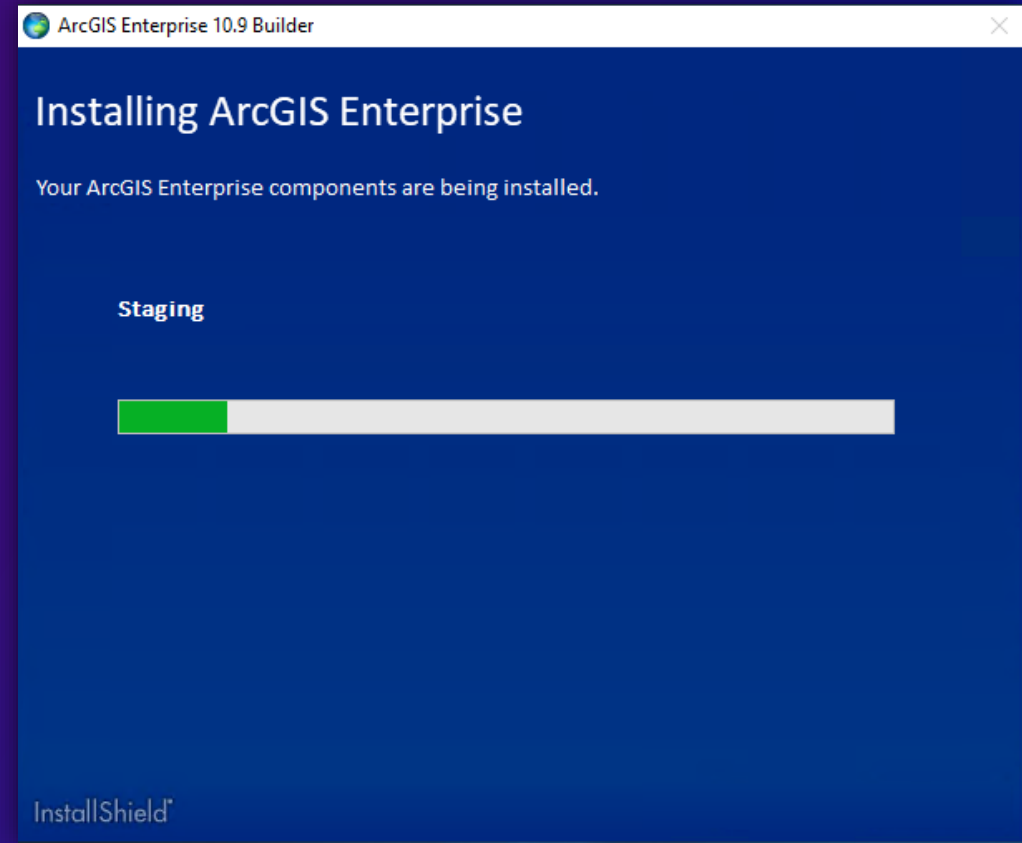
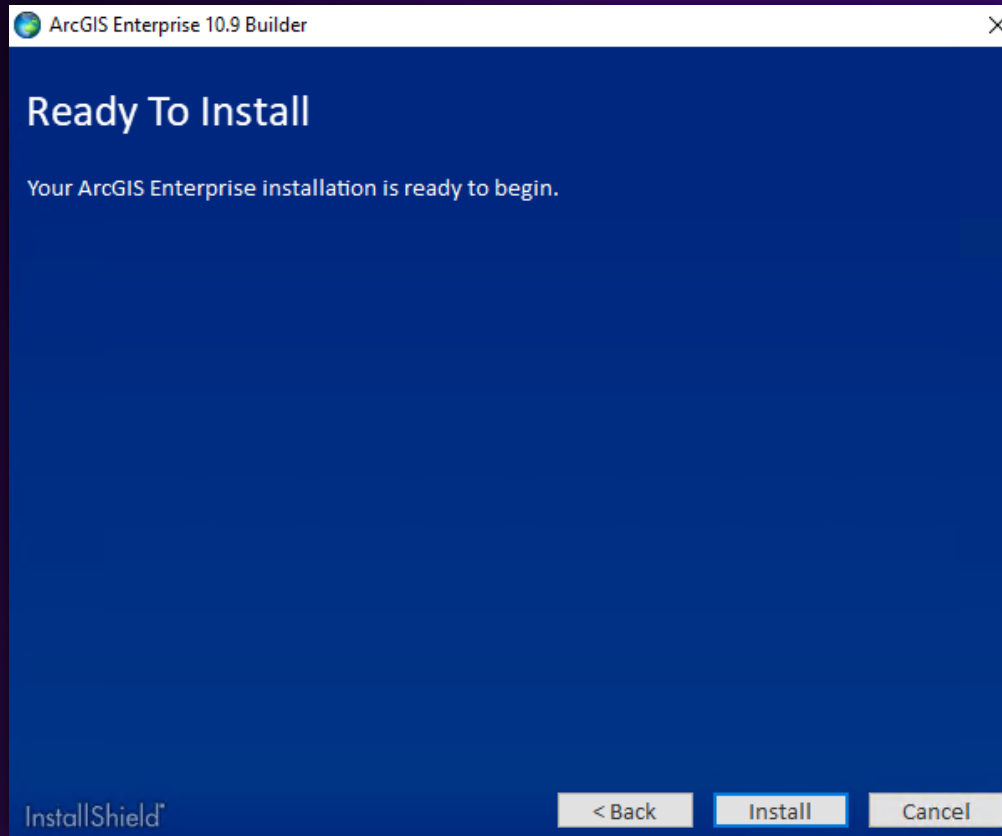
ArcGIS Server authorization file

After the setup completes, during the ArcGIS Enterprise Configuration Wizard, provide your license file (.json) to authorize the ArcGIS Enterprise portal.

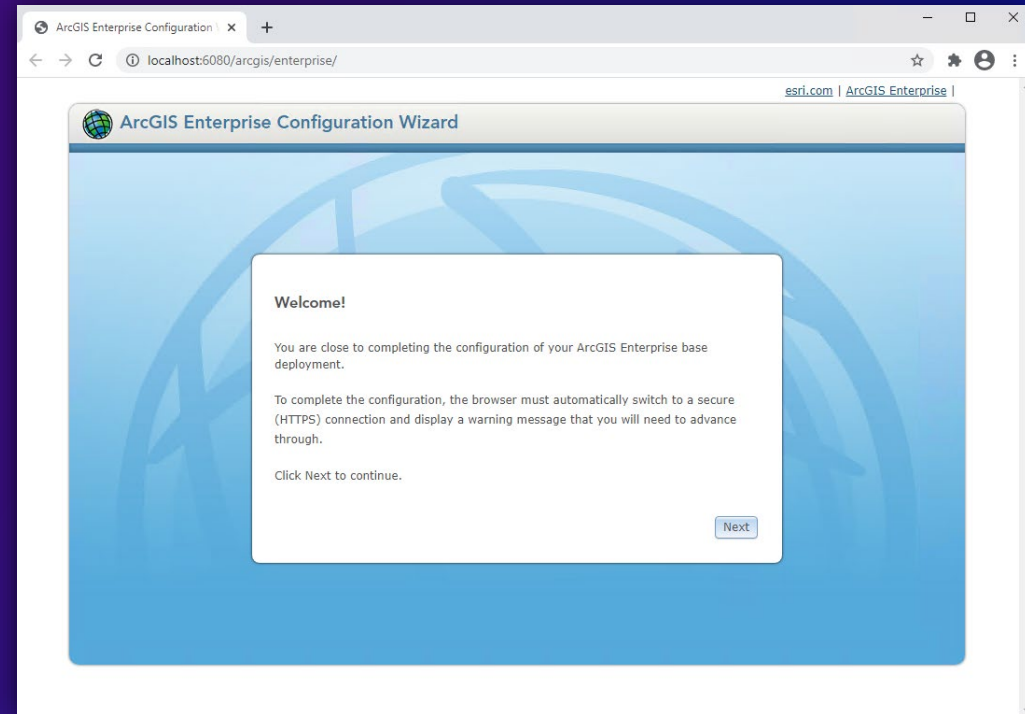
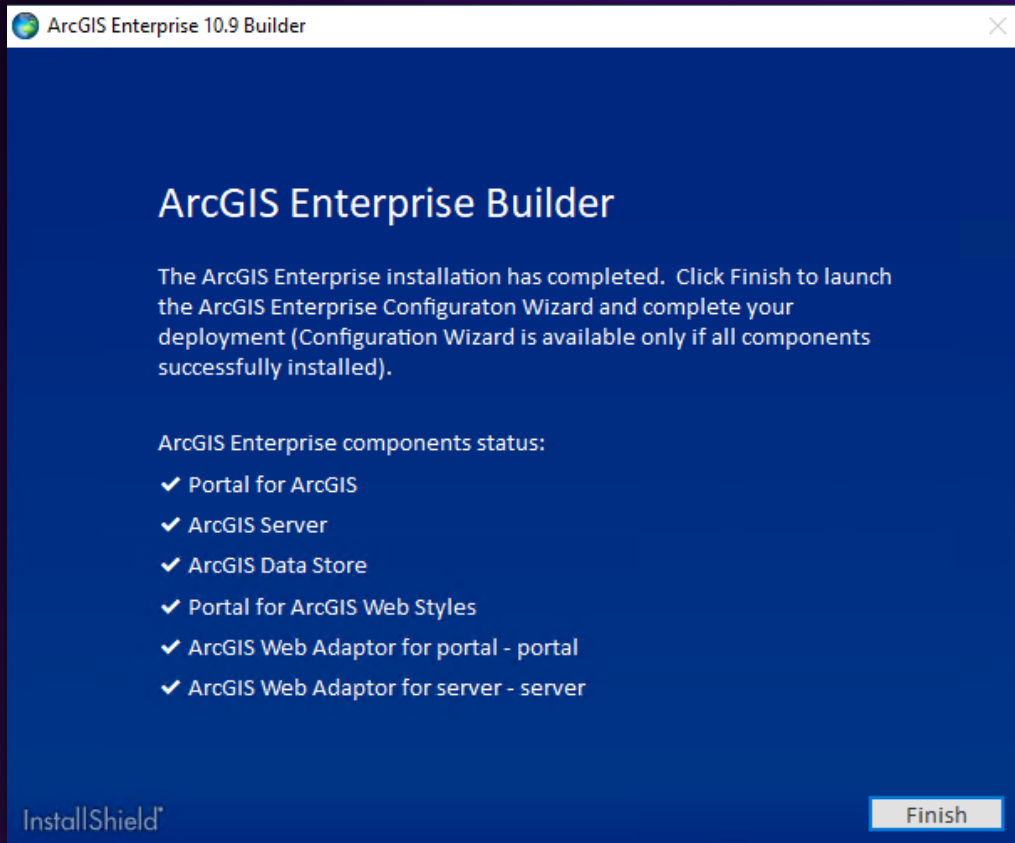
InstallShield®

< Back Next > Cancel

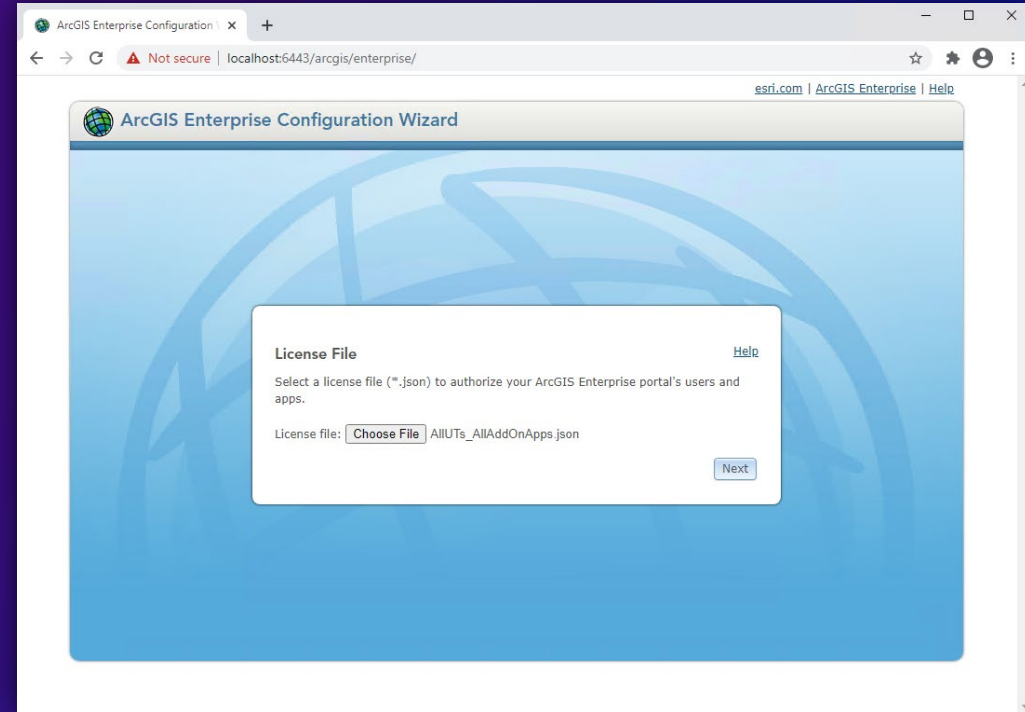
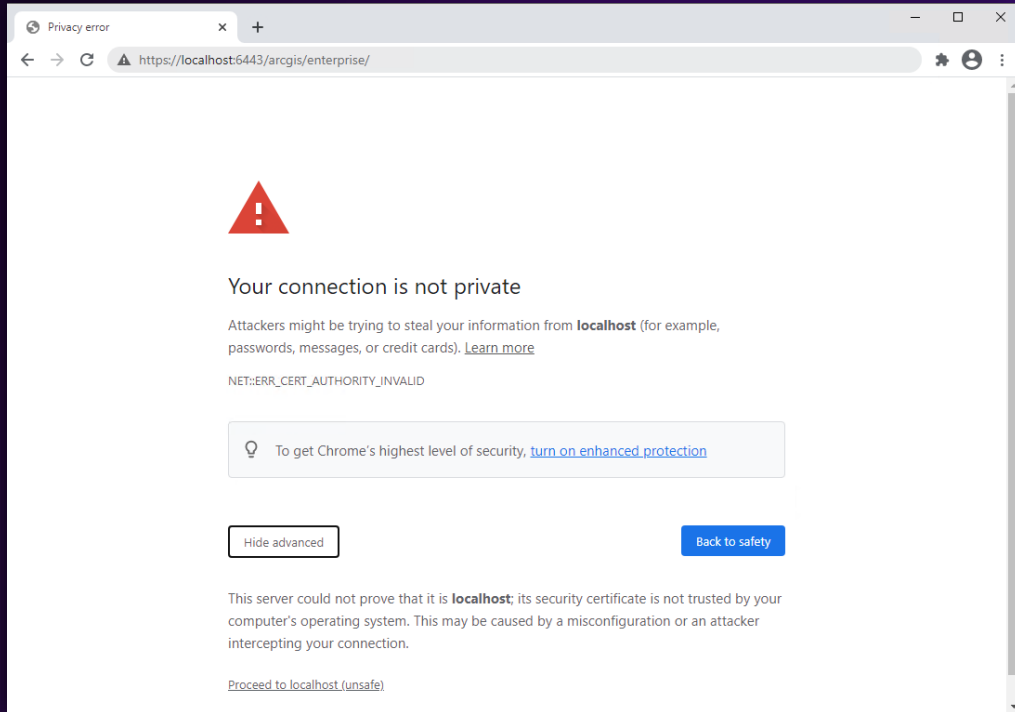
ArcGIS Enterprise Builder



ArcGIS Enterprise Builder



ArcGIS Enterprise Builder



ArcGIS Enterprise Builder

ArcGIS Enterprise Configuration Wizard

[esri.com](#) | [ArcGIS Enterprise](#) | [Help](#)

Initial Administrator Account

[Help](#)

Create the account that will be used as the initial administrator for your ArcGIS Enterprise deployment.

This is a new account that is stored with your deployment and is not an operating system account. Use this account when you are asked to sign in to your deployment for the first time and for administrative tasks such as creating additional user accounts.

Username:

Password:

Confirm Password:

User Type License:

[Back](#) [Next](#)

ArcGIS Enterprise Configuration Wizard

[esri.com](#) | [ArcGIS Enterprise](#) | [Help](#)

Additional Account Information

[Help](#)

Enter additional information for the initial administrator account you specified on the previous panel.

First Name:

Last Name:

Email:

Confirm Email:

Security Question:

Security Answer:

[Back](#) [Next](#)

ArcGIS Enterprise Builder

ArcGIS Enterprise Configuration Wizard

[esri.com](#) | [ArcGIS Enterprise](#) | [Help](#)

Root Content Directory [Help](#)

Your ArcGIS Enterprise deployment requires a content directory for storing data and configuration files. Your deployment is going to grow, so you should specify a directory location with at least 10 GB of free space to start with.

Content Directory:

[Back](#) [Next](#)

ArcGIS Enterprise Configuration Wizard

[esri.com](#) | [ArcGIS Enterprise](#) | [Help](#)

Configuration Summary [Help](#)

Username:	siteadmin
Content Directory:	C:\arcgis
User Type:	Creator

Click Finish to complete the configuration of your deployment.

[Back](#) [Finish](#)

ArcGIS Enterprise Builder

ArcGIS Enterprise Configuration Wizard

[esri.com](#) | [ArcGIS Enterprise](#) | [Help](#)

Root Content Directory [Help](#)

Your ArcGIS Enterprise deployment requires a content directory for storing data and configuration files. Your deployment is going to grow, so you should specify a directory location with at least 10 GB of free space to start with.

Content Directory:

[Back](#) [Next](#)

ArcGIS Enterprise Configuration Wizard

[esri.com](#) | [ArcGIS Enterprise](#) | [Help](#)

Configuration Summary [Help](#)

Username:	siteadmin
Content Directory:	C:\arcgis
User Type:	Creator

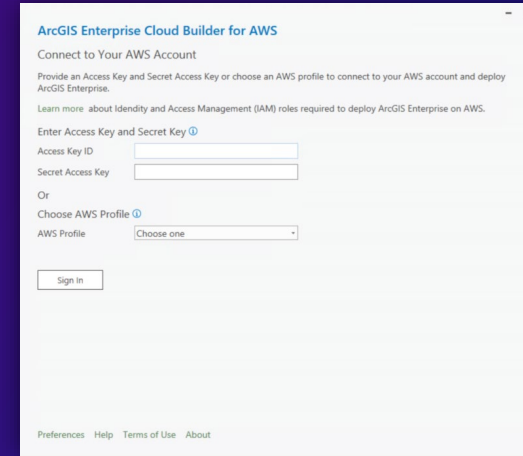
Click Finish to complete the configuration of your deployment.

[Back](#) [Finish](#)

Cloud Deployments



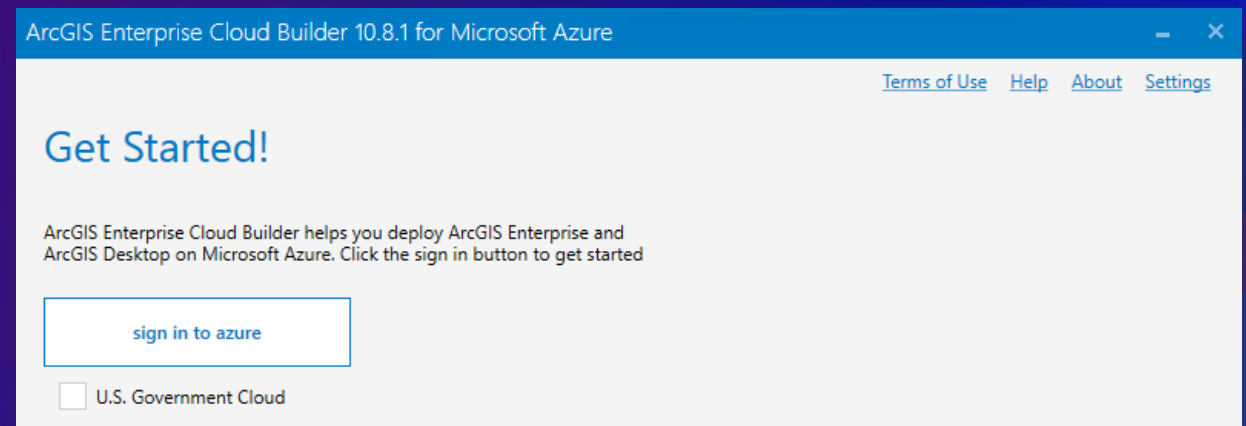
- **Amazon Web Services (AWS)**
 - Esri AMI's
 - Esri CloudFormation Templates
 - Cloud Builder cli
 - Cloud Builder GUI



ArcGIS Enterprise Cloud Builder for AWS



- **Microsoft Azure**
 - Esri Images
 - Cloud Builder
 - Azure CLI on Bash



ArcGIS Enterprise Cloud Builder for Azure

Cloud Deployments



A virtual network in which you launch resources such as virtual machines.



Virtual Private Cloud= VPC



Virtual Network = VNet

Server



EC2 Instance



Virtual Machine

A Collection of servers



AutoScale Group



Availability Set

Storage



**S3, EBS, EFS, Glacier,
Snowball**



**Blobs, Files, Queues, Tables,
Disk**

Cloud Deployments



- Amazon Web Services (AWS)

ArcGIS Enterprise Cloud Builder for AWS

Connect to Your AWS Account

Provide an Access Key and Secret Access Key or choose an AWS profile to connect to your AWS account and deploy ArcGIS Enterprise.

[Learn more](#) about Identity and Access Management (IAM) roles required to deploy ArcGIS Enterprise on AWS.

Enter Access Key and Secret Key [?](#)

Access Key ID

Secret Access Key

Or

Choose AWS Profile [?](#)

AWS Profile

[Preferences](#) [Help](#) [Terms of Use](#) [About](#)

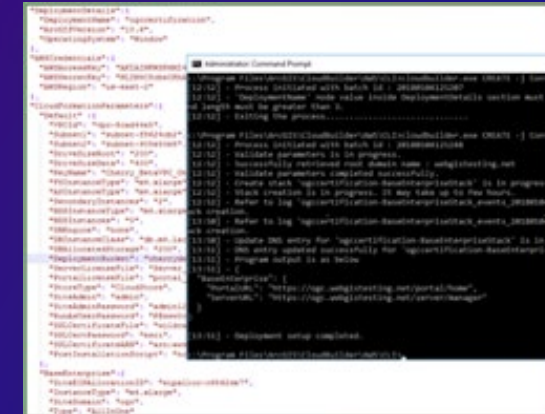
ArcGIS Enterprise Cloud Builder for AWS

Cloud Deployments



- **Prerequisites**

- Elastic IP address
- Files
 - Portal License File
 - Server License File
 - Server License Files for additional server roles
 - i.e. GeoAnalytics, GeoEvent, Image
 - SSL Certificate (pfx)
- AWS Key Pair
- Enable programmatic deployment of ArcGIS images
 - Enable from the Marketplace...



Windows

OR



Linux - ubuntu



Esri ArcGIS Enterprise 10.7 on Ubuntu (March 2019)

By: [ESRI](#) Latest Version: 10.7

Enable ArcGIS within Your Infrastructure

Linux/Unix ★★★★☆ (0) BYOL Free Tier

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Typical Total Price
\$0.192/hr

Total pricing per instance for services hosted on m5.xlarge in US East (N. Virginia). [View Details](#)

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Terms and Conditions

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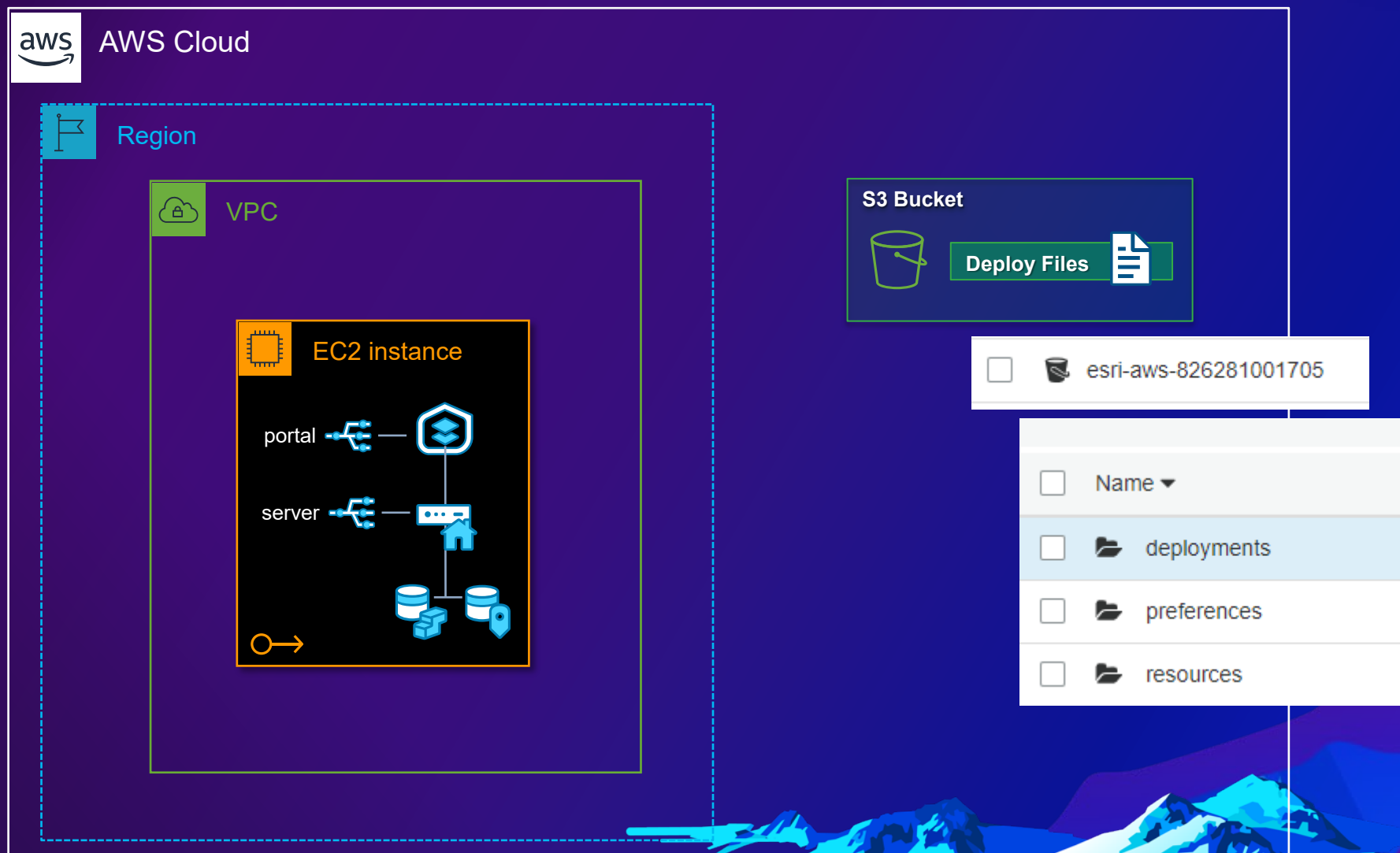
The following table shows pricing information for the listed software components. You're charged separately for your use of each component.

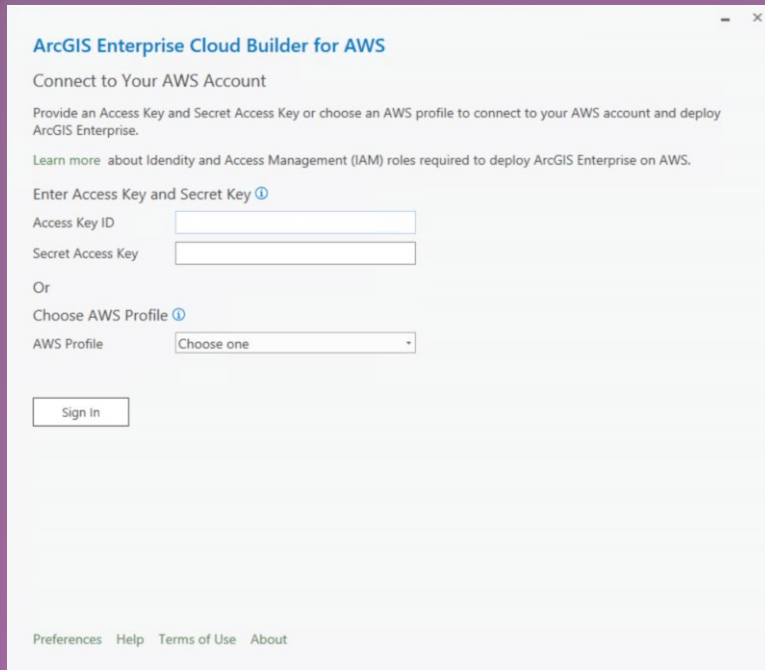
Accept Terms



ArcGIS Enterprise

Single Machine Deployment





ArcGIS Enterprise Cloud Builder for AWS

Connect to Your AWS Account

Provide an Access Key and Secret Access Key or choose an AWS profile to connect to your AWS account and deploy ArcGIS Enterprise.

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Enter Access Key and Secret Key [?](#)

Access Key ID

Secret Access Key

Or

Choose AWS Profile [?](#)

AWS Profile

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ArcGIS Enterprise Cloud Builder for AWS

Review

ArcGIS Enterprise Cloud Builder for AWS

ArcGIS Enterprise Cloud Builder for AWS

Connect to Your AWS Account

Provide an Access Key and Secret Access Key or choose an AWS profile to connect to your AWS account and deploy ArcGIS Enterprise.

[Learn more](#) about Identity and Access Management (IAM) roles required to deploy ArcGIS Enterprise on AWS.

Enter Access Key and Secret Key ⓘ

Access Key ID

Secret Access Key

Or

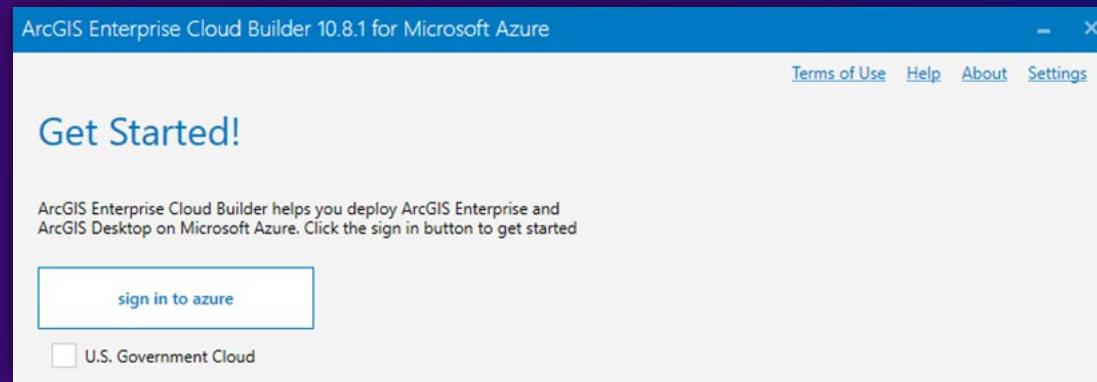
Choose AWS Profile ⓘ

AWS Profile

Sign In

[Preferences](#) [Help](#) [Terms of Use](#) [About](#)

Cloud Deployments



ArcGIS Enterprise Cloud Builder for Azure



Cloud Deployments

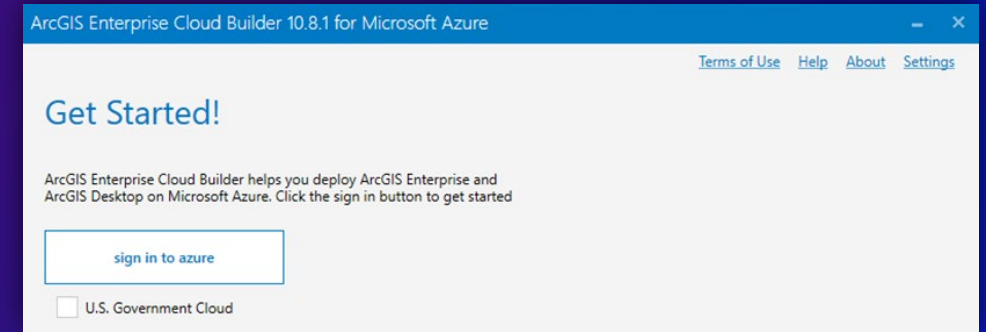
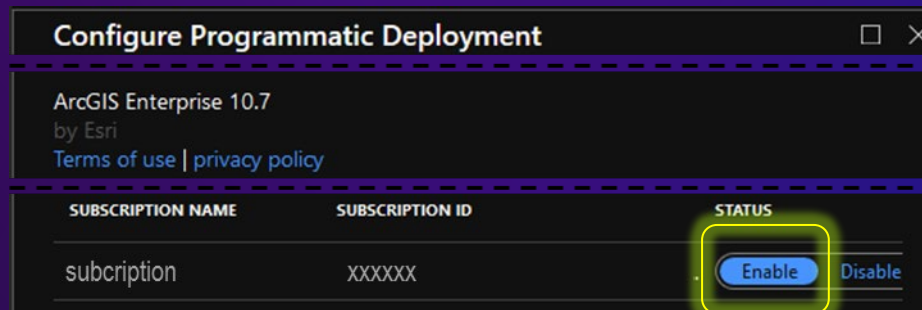
- Prerequisites



- Files

- Portal License File
- Server License File
- Server License Files for additional server roles
 - i.e. GeoAnalytics, GeoEvent, Image
- SSL Certificate (pfx)

- Enable programmatic deployment of ArcGIS images
 - Enable from the Marketplace...

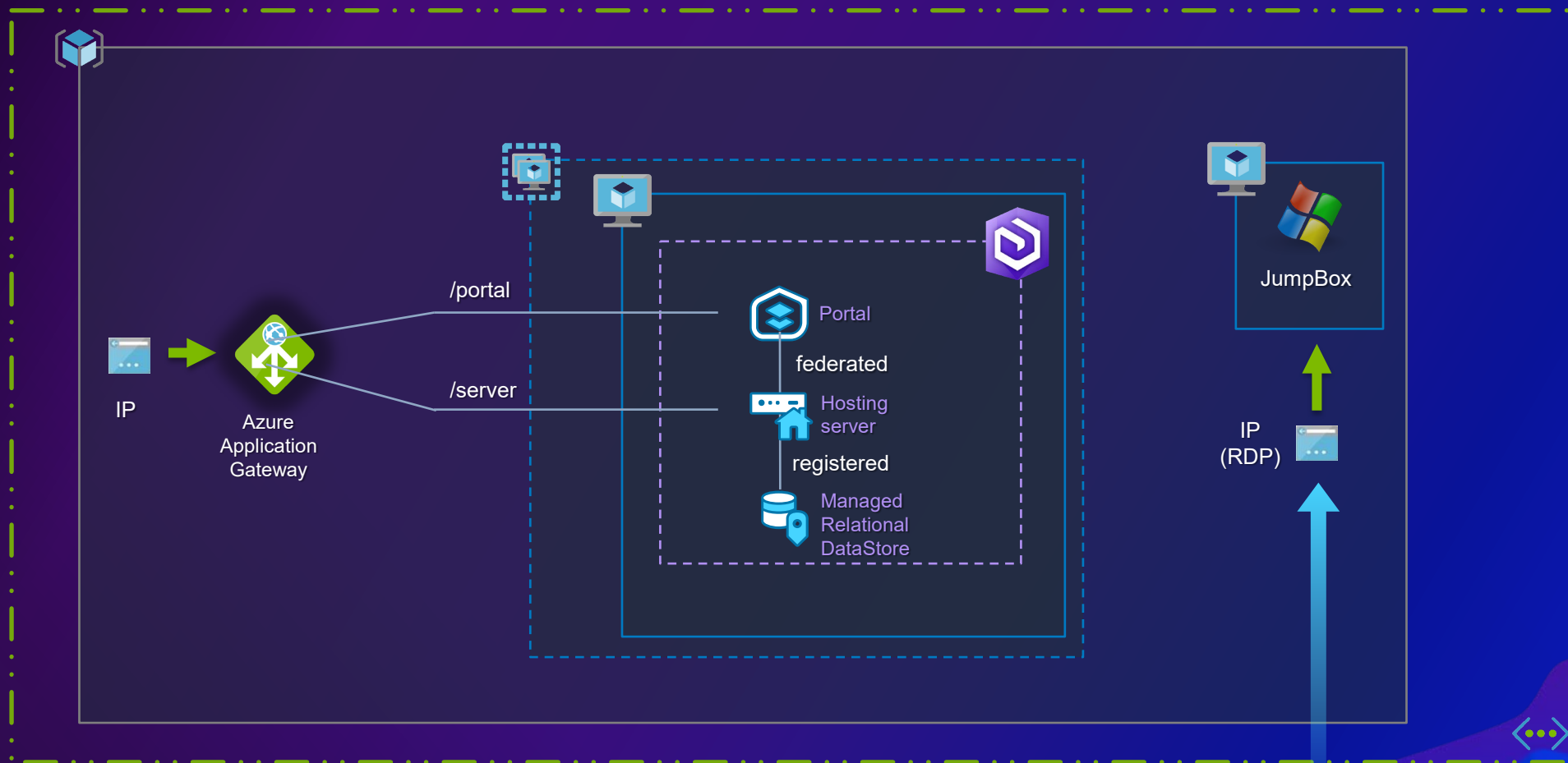


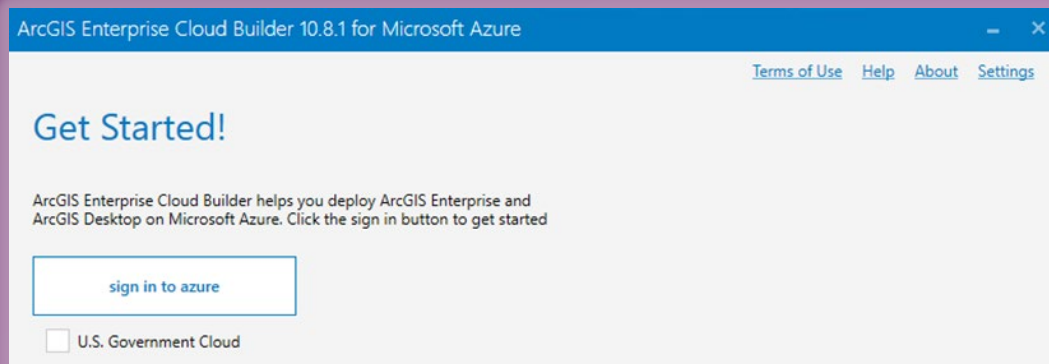
Windows



ArcGIS Enterprise Base Deployment

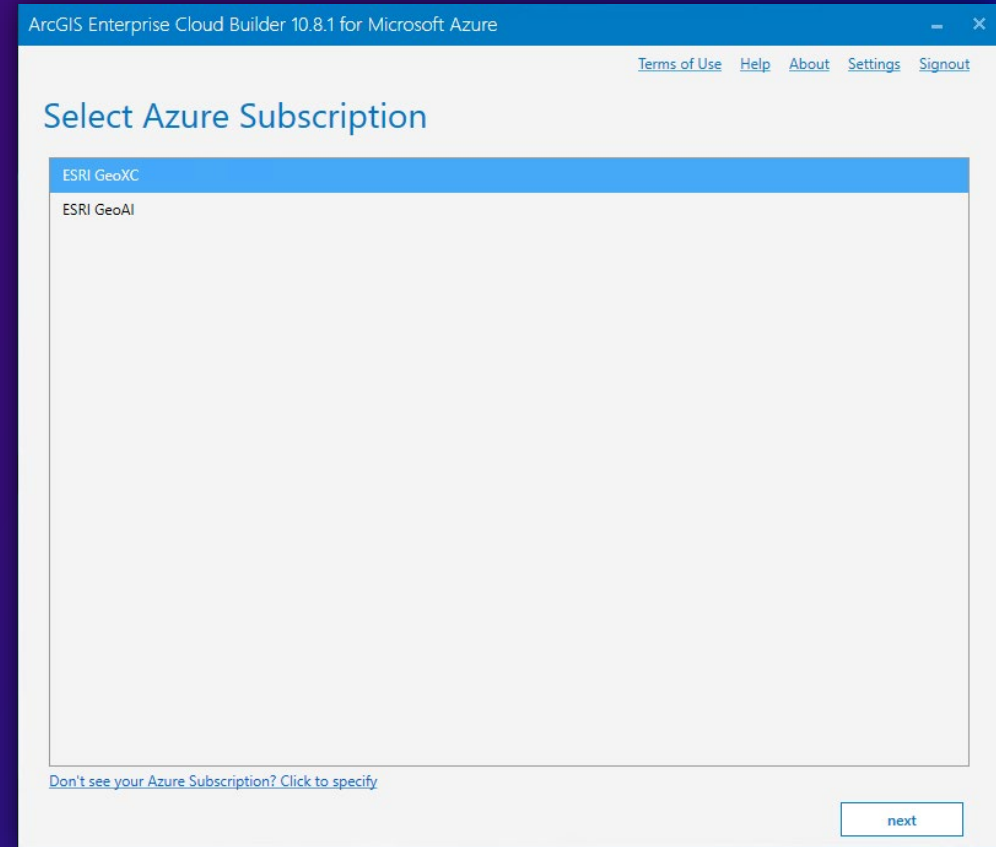
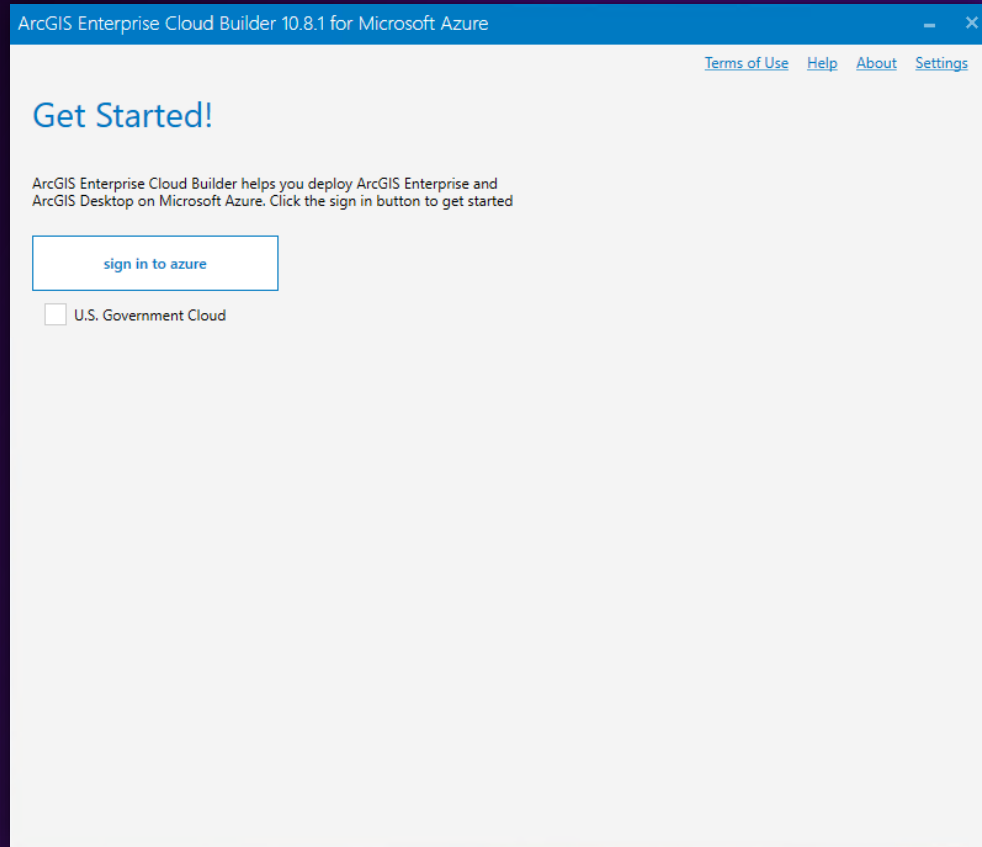
Single Tier Base Deployment | V2



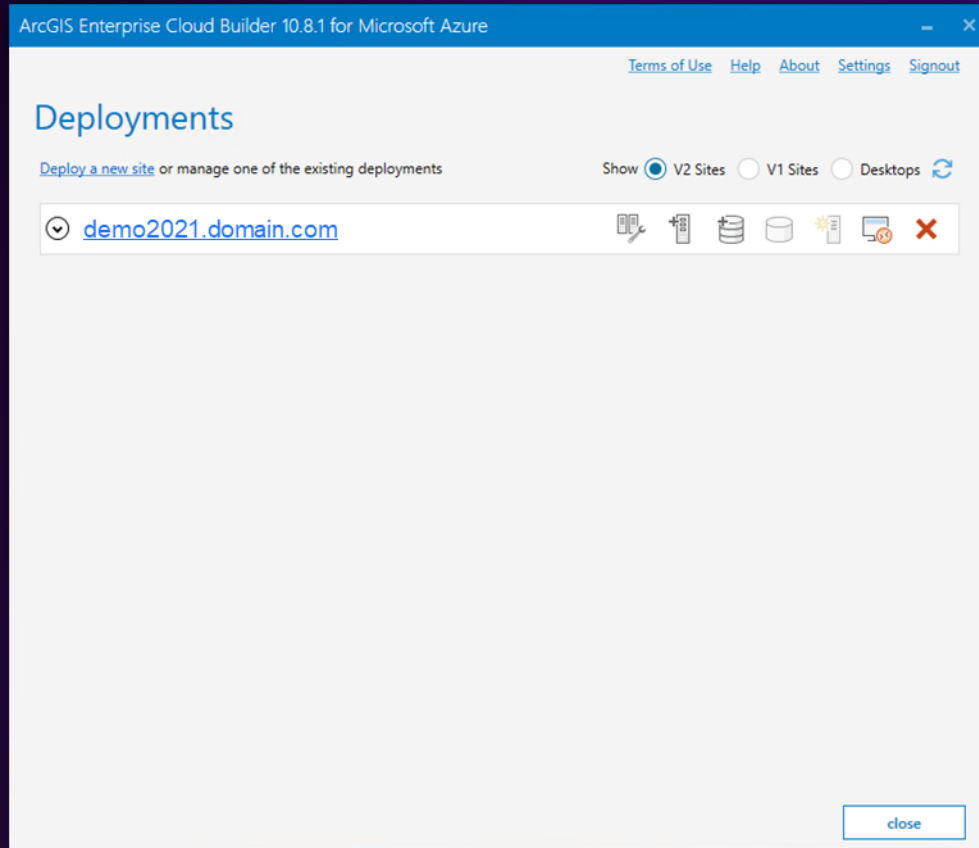


ArcGIS Enterprise Cloud Builder for Azure Demo

ArcGIS Enterprise Cloud Builder for Azure



ArcGIS Enterprise Cloud Builder for Azure



ArcGIS Enterprise Cloud Builder for Azure

ArcGIS Enterprise Cloud Builder 10.8.1 for Microsoft Azure

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Server Role

Select the role for your site based on its purpose

- ☒ **ArcGIS Enterprise**
A base ArcGIS Enterprise deployment consists of a combination of three primary components - Portal for ArcGIS, ArcGIS Server and ArcGIS Data Store - that together make up a Web GIS. This provides foundational mapping and analysis capabilities along with secure sharing, app infrastructure, and information management functionality.
- ☐ **GeoEvent Server**
Used for enabling real-time event-based data streams to be integrated as data sources in your GIS. Event data can be filtered, processed, and sent to multiple destinations, allowing you to connect with virtually any type of streaming data, all in real-time. A GeoEvent Server is federated with an ArcGIS Enterprise portal.
- ☐ **GeoAnalytics Server**
Used for performing distributed analytics on tabular and feature data. These distributed computing tools can analyze patterns and aggregate data in the context of both space and time. A GeoAnalytics Server must be federated with an ArcGIS Enterprise portal.
- ☐ **Image Server**
Used for publishing image services for on-the-fly visualization and performing distributed analytics on raster data. An Image Server is federated with an ArcGIS Enterprise portal.
- ☐ **Notebook Server**
Used to host and run ArcGIS Notebooks, which offer a full Python data science platform in your ArcGIS Enterprise portal. ArcGIS Notebook Server uses Docker containers to provide each notebook author with an isolated workspace.
- ☐ **GIS Server**
General purpose deployment used for serving GIS resources such as map services, feature services, and geoprocessing services to your users.

back next cancel

Advanced Automation



PowerShell DSC

```
"ConfigData": {  
  "Version": "28.9",  
  "ServerContext": "server",  
  "PortalContext": "portal",  
  "ServerRole": "GeneralPurposeServer",  
  "Credentials": {  
    "ServiceAccount": {  
      "Username": "angis",  
      "Password": "Angis_P@ssw0rd",  
      "IsDomainAccount": false,  
      "IsSAMAccount": false  
    }  
  }  
},  
"Server": {  
  "LicenseFilePath": "C:\\Windows\\10.0\\Authorization_Files\\Server.lic",  
  "Installer": {  
    "Path": "C:\\Windows\\10.0\\Installers\\Server.exe",  
    "InstallDir": "C:\\Program Files\\Windows\\Server",  
    "InstallDirPython": "C:\\Python27",  
    "PatchesDir": "C:\\Windows\\10.0\\Patches\\Server"  
  },  
  "ServerDirectoryLocation": "C:\\Windows\\directories",  
  "ConfigStoreLocation": "C:\\Windows\\config-store",  
  "LocalRepositoryPath": "C:\\Windows\\local",  
  "ServerLogLocation": "C:\\Windows\\logs",  
  "PrimarySiteAdmin": {  
    "Username": "siteadmin",  
    "Password": "changeit"  
  }  
},  
"Portal": {  
  "LicenseFilePath": "C:\\Windows\\10.0\\Authorization_Files\\Portal.lic",  
  "PortalLicenseServerType": "creator01",  
  "Installer": {  
    "Path": "C:\\Windows\\10.0\\Installers\\Portal.exe",  
    "WebstylesPath": "C:\\Windows\\10.0\\Installers\\Portal_web_styles.exe",  
    "InstallDir": "C:\\Program Files\\Windows\\Portal",  
    "ContentDir": "C:\\Windows\\portal",  
    "PatchesDir": "C:\\Windows\\10.0\\Patches\\Portal"  
  },  
  "ContentDirectoryLocation": "C:\\Windows\\portal\\content",  
  "EnableAutomaticAccountCreation": false,  
  "DefaultRoleForUser": "account_viewer",  
  "DefaultUserRoleLicenseTypeForUser": "viewer01",  
  "PortalAdministrator": {  
    "Username": "portaladmin",  
    "Email": "portaladmin@esri.com",  
    "Password": "changeit",  
    "SecurityQuestionIndex": 1,  
    "SecurityAnswer": "esri1a"
```

****The PowerShell DSC only supports deployments in Windows Operating Systems****



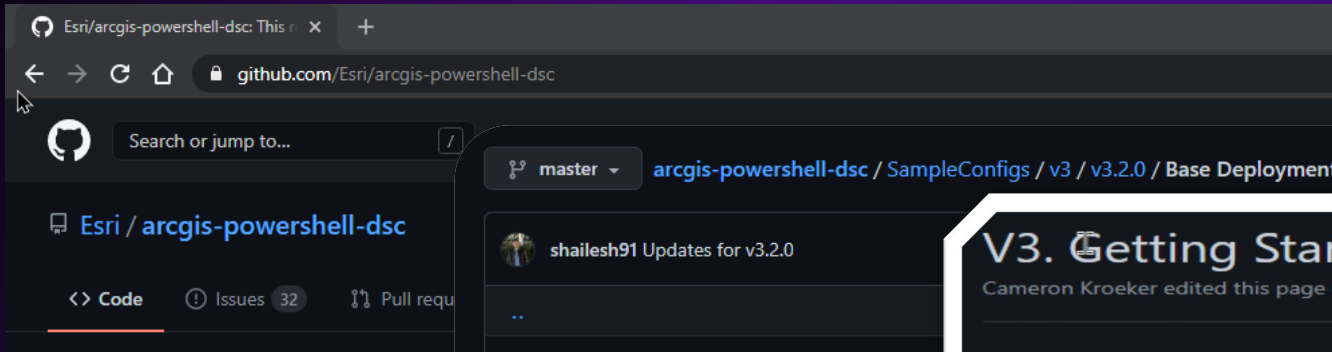
ArcGIS Enterprise Base Deployment using PowerShell DSC

- **Prerequisites**

- Windows Management Framework (WMF) 5
 - PowerShell Version 5
- ArcGIS PowerShell DSC
 - Release V. 3.2.0
 - Support for 10.9
- Setups for Esri Software
- Esri authorization files
 - Portal License File
 - Server License File
 - Server License Files for additional server roles
 - i.e. GeoAnalytics, GeoEvent, Image
 - SSL Certificate (pfx)



ArcGIS Enterprise Base Deployment using the PowerShell DSC



V3. Getting Started

Cameron Kroeker edited this page on Aug 4, 2020 · 3 revisions

Supported ArcGIS Enterprise versions

- 10.5
- 10.5.1
- 10.6
- 10.6.1
- 10.7
- 10.7.1
- 10.8
- 10.8.1

Supported ArcGIS Desktop versions

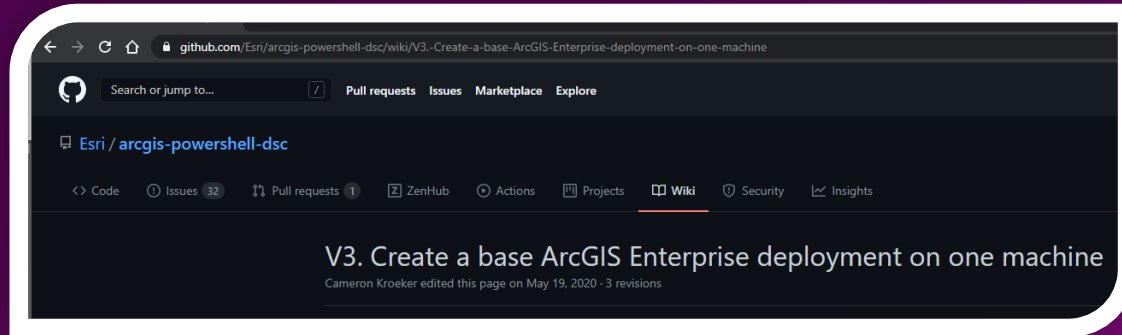
- 10.4
- 10.4.1
- 10.5
- 10.5.1
- 10.6
- 10.6.1
- 10.7
- 10.7.1
- 10.8
- 10.8.1

V3. Variables reference page for JSON configuration files

Cameron Kroeker edited this page on Dec 8, 2020 · 25 revisions

When you edit the appropriate JSON file from our SampleConfigs folder for use in your PowerShell DSC for ArcGIS module, you replace the placeholder variables with information and parameters of your own. Refer to this list for a full guide to each variable found.

- **AllNodes** - This contains all the nodes on which the components of ArcGIS Enterprise will be installed.
 - **nodeName** - Each node is represented by a node name, which can be a machine name or an IP address.
 - **Role** - The software component role of the node; this can accept one or multiple values as a comma-separated list. Enter in the order you want to execute the roles on the node. Accepted values are 'Server', 'Portal', 'DataStore', 'ServerWebAdaptor', 'PortalWebAdaptor', 'RasterDataStoreItem', 'Desktop', 'Pro', 'LicenseManager', 'SQLServerClient', 'SQLServer', and 'FileShare'.
 - **DataStoreTypes** - This is a valid parameter when the node role is 'DataStore'. Valid values are 'Relational | SpatioTemporal | TileCache'.
 - **SslCertificates** - (Optional) SSL Certificates specific to the node. This block is an array where each SSL Certificate in the array can target multiple components or each of them individually.
 - **Path** - The file path of your SSL Certificate. A local or network share address.
 - **Password** - The password of the SSL certificate to be installed.
 - **PasswordFilePath** - Encrypted password file path of the SSL certificate to be installed.
 - **CNameFQDN** - Refers to a fully qualified domain name (CN/SAN) associated with the certificate.
 - **Target** - Target Components (array) on Node on which the Certificate will be installed on [Server | Portal | WebAdaptor].
 - **PortalLicenseFilePath** - (Optional) License File Path to be used with the given Portal installed on the Node. Overrides



ArcGIS Enterprise PowerShell DSC Demo



What's New at 10.9

ArcGIS Enterprise Deployment Options

Enterprise Deployment Automation



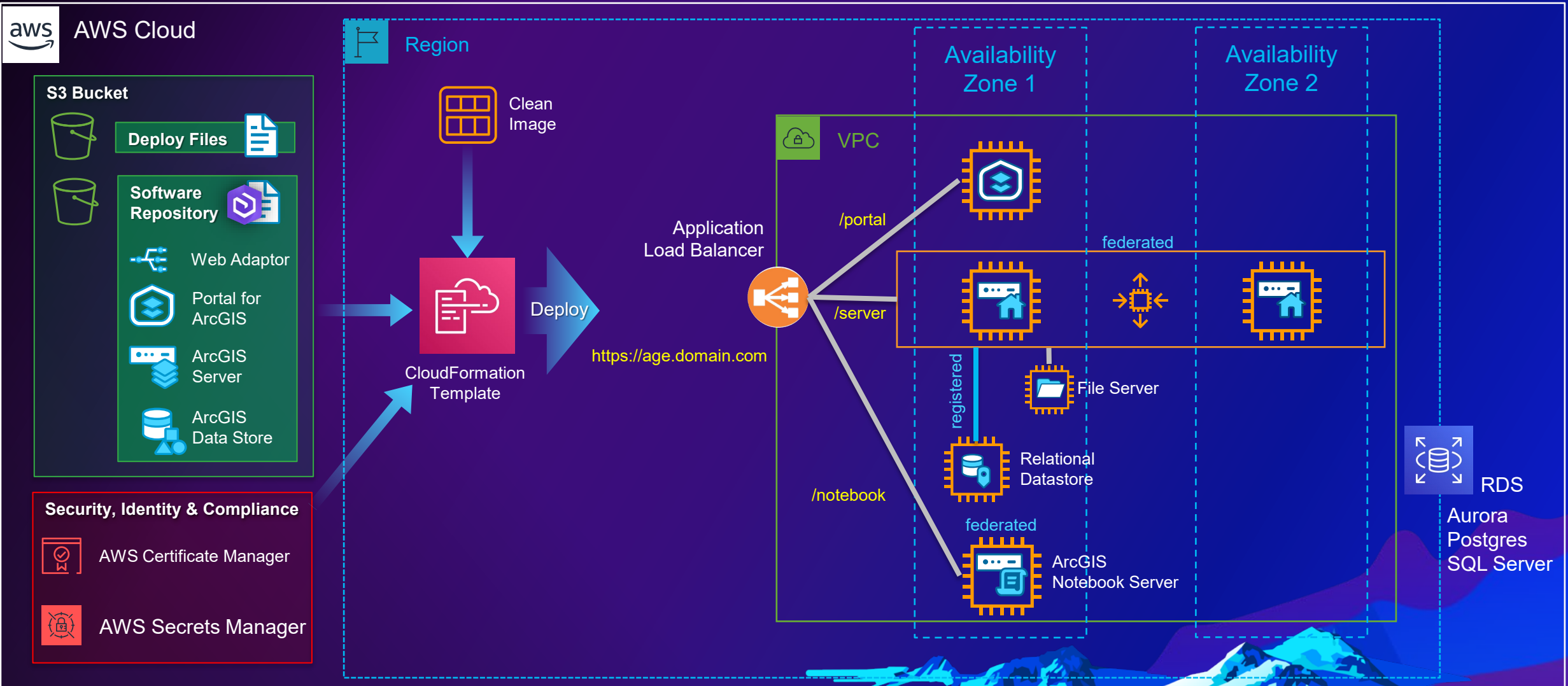
• New for 10.9 ArcGIS Enterprise on AWS

- ArcGIS Enterprise CloudFormation templates
 - Load Balancer
 - ALB + Classic ELB
 - Data Store Templates
 - Database Templates using RDS
 - Aurora / Postgres / SQL Server
 - ArcGIS Server
 - GIS Server, GeoAnalytics, Notebook Server, GeoEvent, Mission Server



ArcGIS Enterprise 10.9

Example Deployment



Enterprise Deployment Automation



- **New for 10.8.1 ArcGIS Enterprise on MS Azure**

- Support for upgrades of v2 and v1 deployment architectures
- TileCache datastore
 - Cluster and primary/standby mode
- Support for auto shutdown



- **New for 10.9 ArcGIS Enterprise on MS Azure**

- .NET Framework 4.8
 - Pre-requisite for Cloud Builder
- Mission Server Deployments
- GeoEvent is restricted to a single machine deployment



Enterprise Deployment Automation



• New for 10.9 ArcGIS Enterprise Chef Deployments

- Chef Templates
 - New templates now available for deploying:
 - arcgis-enterprise-base
 - arcgis-portal
 - arcgis-server
 - arcgis-datastore
 - arcgis-egdb
 - arcgis-geoevent
 - arcgis-mission-server
 - arcgis-notebook-server



Enterprise Deployment Automation

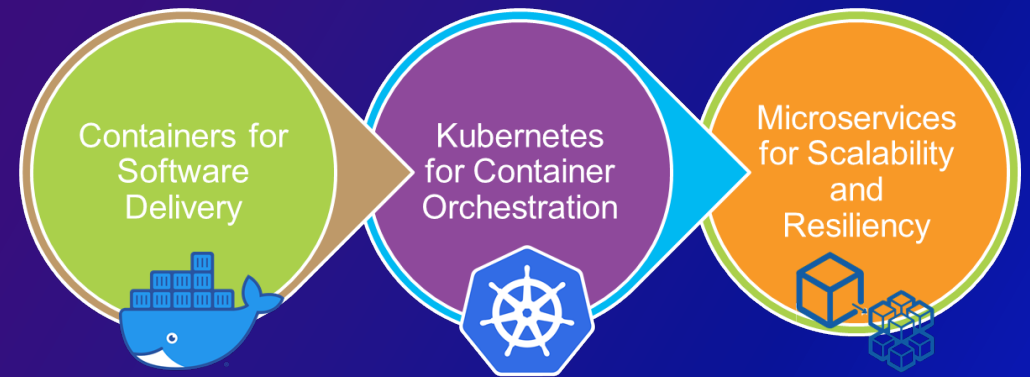
- **New for 10.9 ArcGIS Enterprise**

- ArcGIS Enterprise on Kubernetes

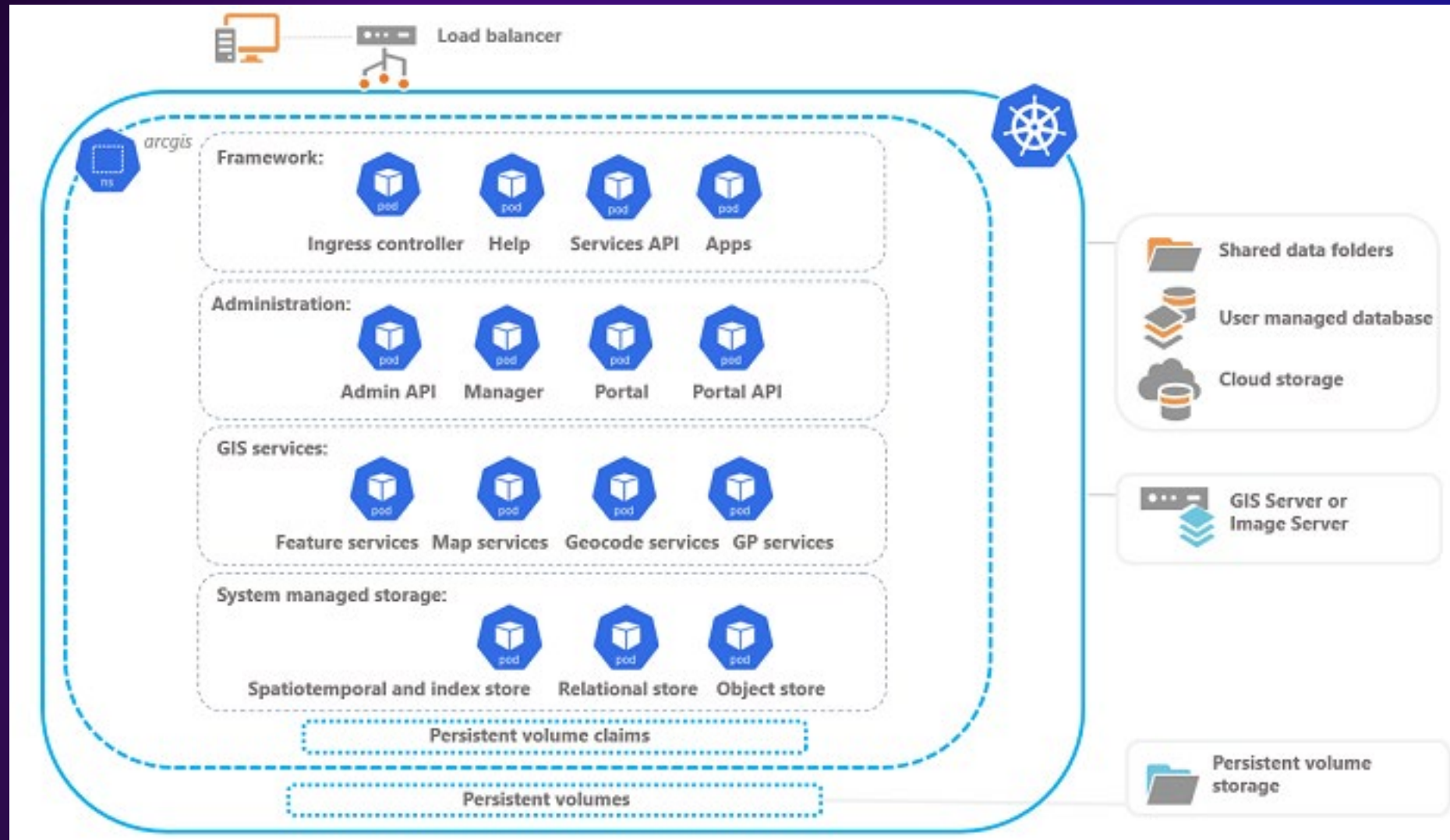
-  - Amazon Elastic Kubernetes Service (EKS)

-  - Azure Kubernetes Service (AKS)

-  - Red Hat OpenShift (On-premise data center)



ArcGIS Enterprise on Kubernetes | Architecture



ArcGIS Enterprise on Kubernetes | Deployment

```
[linux@Dev0014152 setup]$ ls
deploy.properties  deploy.sh  tools  undeploy.sh
[linux@Dev0014152 setup]$ !2
./deploy.sh -f deploy.properties -t 1027
```

./deploy.sh

- *Deployment Platform*
- *Load Balancer*
- *Namespace*
- *Registry Host*
- *Image Path*
- *Registry Username / Pwd*
- *FQDN*
- *Context Path*
- *Node Port*
- *TLS Certificate*



ArcGIS Enterprise on Kubernetes | Configure

- **Configure ArcGIS Enterprise on Kubernetes**

- **Select deployment profile**
- **Provide licenses**
 - Portal for ArcGIS
 - ArcGIS Server
- **Create administrator account**
- **Set storage information**
- **Configuration summary**

Create ArcGIS Enterprise organization

1. Select deployment profile

2. Provide licenses

3. Create administrator account

4. Set storage information

5. Configuration summary

Select deployment profile

Please select a deployment profile for ArcGIS Enterprise on Kubernetes. Deployment profiles are predefined architectural patterns that deploy varying levels of redundancy across pods.

High availability

Designed for standard availability (default)☒

Standard availability is the default profile and is appropriate for most production environments. It is designed to minimize unplanned downtime and includes redundancy for many pods.

Designed for continuous availability☐

Continuous availability is the highest level of availability and includes all of the redundancy in the standard availability profile plus redundancy for additional pods. It is designed for business or mission critical availability requirements.

Additional profile

Development☐

Development is designed for non-production use, including environments used for testing and evaluation. This profile does not provide redundancy beyond the publishing tools pod and is not considered a highly available profile option.

[Learn more about deployments](#) 



ArcGIS Enterprise on Kubernetes | Configure

- Configure ArcGIS Enterprise on Kubernetes



To watch the deployment of the pods, open another shell window and execute the following command:

\$ watch kubectl get pods --ns arcgis

- *ArcGIS Enterprise on Kubernetes: Introduction for Administrators*
- *ArcGIS Enterprise on Kubernetes: Operations and Management*
- *ArcGIS Enterprise on Kubernetes: Publishing and Tuning*

 Configuring ArcGIS Enterprise organization Completed : 1 / 14

Configuration status

License validation		Completed
Configuration store		Not started
Relational store		Not started
Queue store		Not started
In-memory store		Not started
Object store		Not started
Spatiotemporal and index store		Not started
Portal rest api		Not started
Services rest api		Not started
Service lifecycle manager		Not started
Monitoring		Not started
System and utility services		Not started
Pod replicas		Not started
Finalizing configuration		Not started

Summary and Resources

The background is a vibrant, abstract composition. It features a gradient of deep purple, magenta, and pink. On the right side, there are stylized, layered mountain ranges in shades of orange, pink, and white. A thin, bright yellow arc curves across the middle right section. The overall aesthetic is modern and artistic.

Summary

- ArcGIS Enterprise Deployment Design Considerations
- Simple Automation Tools
 - ArcGIS Enterprise Builder, ArcGIS Enterprise Builder for Azure and AWS, Cloud Formation Templates
- Advanced Automation with PowerShell and Chef
- What's new in 10.9 with ArcGIS Enterprise
 - Automation Enhancements (CF Templates, Chef)
 - ArcGIS Enterprise on Kubernetes



Resources

- ArcGIS System Best Practice Guide
 - <https://www.esri.com/content/dam/esrisites/en-us/media/technical-papers/architecting-the-arcgis-system.pdf>
- ArcGIS Enterprise Documentation
 - <https://enterprise.arcgis.com/en/get-started/latest/windows/what-is-arcgis-enterprise-.htm>
- ArcGIS Enterprise Functionality Matrix
 - <https://www.esri.com/content/dam/esrisites/en-us/media/brochures/arcgis-enterprise-functionality-matrix.pdf>





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