ArcGIS Enterprise: Cloud Operations using Amazon Web Services

Cherry Lin
Quick Survey

- Your role in your organization
- Already a cloud user
- Running Esri deployment on AWS
- Consider yourself knowledgeable of AWS
Agenda

- About ArcGIS Enterprise on AWS

- ArcGIS Enterprise Offerings on AWS
  - AMIs & Deployment Tools
  - Support for Native Cloud Storage
  - Upgrade Your Deployments

- Case Study
About ArcGIS Enterprise on AWS
Deployment
How you setup the software

ArcGIS Enterprise

Workflow
GIS tasks & System actions

Setups
ArcGIS Enterprise Builder
Amazon Web Services
Microsoft Azure
Chef
Powershell DSC

GIS workflows
System Operations
ArcGIS Enterprise

- Portal
- Hosting Server
- Image Server
- Image Hosting Server
- GeoEvent Server
- GeoAnalytics Server
- Spatialtemporal Big Data Store
- ArcGIS Web Adaptor
- Portal for ArcGIS
- ArcGIS Server
- ArcGIS Data Store
- GIS Server
- Image Server
- Image Hosting Server
- GeoEvent Server
- GeoAnalytics Server
- ArcGIS Web Adaptor
- Hosting Server
- ArcGIS Data Store (relational + tile cache)
Deployment Tools

On-premises & All Cloud Providers

Setups
ArcGIS Enterprise Builder
Chef
Powershell DSC
ArcGIS Enterprise Support for Cloud Providers
ArcGIS Enterprise Special Tooling

Cloud deployments

Amazon Web Services

Microsoft Azure
ArcGIS Enterprise on AWS Offerings: Getting Started
Before Starting

**On-premise**
- Esri authorization files
- Domain_name for your application
- SSL Certificate for your domain
- Esri software setups

**Infrastructure**
- Machines/VMs/Networks
- Web Servers and/or Load Balancer
- File Server
- Data storage/Database
- ……

**AWS**
- Esri authorization files
- Domain_name for your application
- SSL Certificate for your domain
- AWS Account
Start Deployment

On-premise
- Some knowledge about your infrastructure
- Esri Setups
- Manually Configuration
  - On all machines
- Deployment Automations

AWS
- Some knowledge about AWS
- AMIs
- Esri ArcGIS Cloud Builder CLI for AWS
- Esri CloudFormation template
  - One deployment for different patterns
  - Scripting tools, python or powershell
AMIs

- Windows with SQL Server Express
- Ubuntu with Postgresql
- Available in GovCloud Region
Esri CloudFormation Templates

CloudFormation templates to deploy ArcGIS Enterprise on Amazon Web Services

- Before using a template, read the Readme file for the sample template you want to use. Make sure you follow the directions to set up the required components first.
- Click "Launch Stack" to use a template. You will be taken to the AWS Console. Sign in to your Amazon Web Services account, and enter the required parameters for the template.
- For more information, see the ArcGIS Enterprise on Amazon Help and ArcGIS Enterprise on Windows or ArcGIS Enterprise on Linux.

ArcGIS Enterprise needs to run in a VPC environment. Most Amazon Web Services accounts have a default AWS VPC created. If you use this default VPC, create another VPC manually, or use the template described in the next section to create a VPC. However, you create the VPC, it needs to have the following properties set:

- DNS resolution: Set to yes.
- DNS hostname: Set to yes.
- VPC options set: You must have both domain-name and domain-name-servers set, for example:

```
example-domain-name.example.com; example-domain-name2.example.com
```

Template for Deploying AWS Resources

ArcGIS Web Adaptor

ArcGIS Data Store (relational + tile cache)

Portal for ArcGIS

Hosting Server

GIS Server

Image Server

GeoEvent Server

GeoAnalytics Server
Native to AWS Tools

Automate CloudFormation Stack creation using Python

CloudFormation stack creation can be run from command line. You can check Amazon CloudFormation documentation for more details.

Below is a sample Python script to create cloudformation stacks. To run it:

- Make sure you have Python installed. Python is also installed with ArcGIS Desktop and ArcGIS Server.
- `ArcGIS Server Installation Directory\Arcgis\server\Tools\python` on Linux.
- Download and install AWS SDK for Python (boto). The easiest way to install via Pip:
  - If you don’t have Pip, install Pip following the directions at https://pypip installer.org/installing.html.
  - Install Boto by running: `pip install boto`.
- Download the sample Python script and run it with the parameters required by your cloudformation templates.

For example, ArcGIS for Server WebGIS parameter file `Arc parameters.xml` defines the parameters required to create a cloudformation_stack_creation.py. Your AWS Access keys (Your AWS Secret Access Keys and AWS Region) should be defined in the script.

Automate CloudFormation Stack creation using Powershell

CloudFormation stack creation can also be automated using Powershell. Two sample powershell scripts are provided:

- `arcgis-getgis-for-windows.ps1` to create highly available WebGIS stack on Windows.
- `arcgis-server-ubuntu-ha-configurer.ps1` to create Server GIS site using DynamicOS and S3 as config-store.

Esri-provided sample scripts
Deployment Tools - Cloud Builder Command Line Interface for AWS

- New at 10.6

- One Run to Deploy ArcGIS Enterprise
  - Base + Federated Servers
  - Define in a json file

- Prepare your deployment
Cloud Formation Templates VS. Cloud Builder CLI

- **Power**
- **Simplicity**
- **One Run Deployment**
- **Highly Customizable**
Demo

Deploy using ArcGIS Enterprise Command Line Interface for AWS
ArcGIS Enterprise on AWS Offerings: Workflows
Workflows

GIS workflows

Cloud Specific Features
Supported Cloud Storage

Amazon Web Services

Microsoft Azure

Alibaba Cloud Computing

HUAWEI
Cloud Storage Support

• S3
  • Portal content store
  • Cloud Storage in Server Manager
    • Caching
    • GeoAnalytics Data Input
    • Raster Analytics
  • ArcGIS Spatial Temporal DataStore backups
  • Webgisdr backups
• DynamoDB & S3
  • ArcGIS Server config-store
• User-defined S3 compatible storage
  • Caching
System Tasks

- Hosting Server
- Image Server
- GeoEvent Server
- GeoAnalytics Server
- Image Hosting Server
- Spatialtemporal Big Data Store
- Data Store
- Portal

10.6.1
Stop/Start the whole stack (Lambda Function)

<table>
<thead>
<tr>
<th>Function name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ogccertification-BaseEnterpriseS-StopStackFunction-1THY6SCW9NUCH</td>
<td>Stops all EC2 instances of the CloudFormation stack</td>
</tr>
<tr>
<td>ogccertification-BaseEnterprise-StartStackFunction-1MJ90NP9MR32</td>
<td>Starts all EC2 instances of the CloudFormation stack</td>
</tr>
<tr>
<td>ogccertification-BaseEnte-ServerConfigStoreFunction-</td>
<td></td>
</tr>
</tbody>
</table>
“Run command” tool

• Remotely Run Commands
  - Update License
  - Applying Esri patches
  - Any other commands!

- Windows
- Ubuntu starting at 10.6
Upgrade to 10.6.1

- Make a backup
  - Webgisdr
- Practice
Upgrade to 10.6.1

- Base Enterprise
  - Standalone
  - High Availability

- ArcGIS GIS Server Stack
  - Autoscaling group

- Spatialtemporal Big Data Store
  - Autoscaling group
Case Study
Requirements

• Deploy an ArcGIS Enterprise in AWS
  - Base ArcGIS Enterprise
  - + the following server roles:
    - General purpose GIS Server site
    - GeoEvent
    - GeoAnalytics Server site
    - RasterAnalytics Server site
• Use ArcGIS Monitor to monitor platform
• Develop a plan for license updates
• Develop a plan for future upgrades
Checklist

- Architecture
- Deployment
- Environment Availability
- Monitor
- Update Licenses
- Disaster Recovery
- Upgrade
Architecture

ArcGIS Base Enterprise

ArcGIS Server Site

GeoEvent1

GeoAnalytics

Image Server Site

AWS

VPC

SG

Server Site

SG - GE

SG - GA Site

SG - Image Site

Subnet1

Subnet2

M1

M2

M3

M4

M5

M6

M7

M8

M9

M10

M11

M12

M13

M14

Fileserver

Cloud

arn:aws:acm:us-east-2:******:certificate/******
### Architecture

#### Table 1: Region: US West (Oregon) - Current Generation

<table>
<thead>
<tr>
<th>Instance Type</th>
<th>vCPU</th>
<th>ECU</th>
<th>Memory (GiB)</th>
<th>Instance Storage (GiB)</th>
<th>Windows Usage</th>
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</tr>
</thead>
<tbody>
<tr>
<td>m5.large</td>
<td>2</td>
<td>10</td>
<td>8</td>
<td>EBS Only</td>
<td>$0.188 per Hour</td>
<td>$0.096 per Hour</td>
</tr>
<tr>
<td>m5.xlarge</td>
<td>4</td>
<td>15</td>
<td>16</td>
<td>EBS Only</td>
<td>$0.37 per Hour</td>
<td>$0.192 per Hour</td>
</tr>
<tr>
<td>m5.2xlarge</td>
<td>8</td>
<td>31</td>
<td>32</td>
<td>EBS Only</td>
<td>$0.752 per Hour</td>
<td>$0.384 per Hour</td>
</tr>
<tr>
<td>m5.4xlarge</td>
<td>16</td>
<td>61</td>
<td>64</td>
<td>EBS Only</td>
<td>$1.504 per Hour</td>
<td>$0.768 per Hour</td>
</tr>
<tr>
<td>m5.12xlarge</td>
<td>48</td>
<td>173</td>
<td>192</td>
<td>EBS Only</td>
<td>$4.512 per Hour</td>
<td>$2.204 per Hour</td>
</tr>
<tr>
<td>m5.24xlarge</td>
<td>96</td>
<td>345</td>
<td>384</td>
<td>EBS Only</td>
<td>$9.024 per Hour</td>
<td>$4.608 per Hour</td>
</tr>
<tr>
<td>m4.large</td>
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<td>$1.536 per Hour</td>
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<tr>
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<td>$2 per Hour</td>
</tr>
<tr>
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<td>$6.144 per Hour</td>
<td>$5.2 per Hour</td>
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</table>

#### Table 2: Region: US West (Oregon) - Current Generation

<table>
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<th>Instance Type</th>
<th>vCPU</th>
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</table>
### Architecture Costs

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<th>vCPU</th>
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</tbody>
</table>
Architecture
Checklist

- Architecture
- Deployment
- Environment Availability
- Monitor
- Update Licenses
- Disaster Recovery Deployment
- Upgrade
Deployments

Esri CloudFormation Templates

CloudFormation templates to deploy ArcGIS Enterprise on Amazon Web Services

The following templates use CloudFormation to create ArcGIS Enterprise deployment or ArcGIS Server roles on Amazon Web Services (AWS).

Looking for a different Esri template version?

| 10.5.1 | 10.5 | 10.4.1 | 10.4 | 10.3.1 |

- Before using a template, read the Readme file for the sample template you want to use. Make sure you follow the instructions to set up the required components first.
- Click LAUNCH STACK to use a template. You will be taken to the AWS Console. Sign in to your Amazon Web Services account and provide the required parameters for the template.
- For more information, see the ArcGIS Enterprise on AWS help and ArcGIS Enterprise on Windows help or ArcGIS Enterprise on Linux help.
- ArcGIS Enterprise needs to run in a VPC environment. Most Amazon Web Services accounts have a default AWS VPC created. Either use this default VPC, create another VPC manually, or use the template described in the next section to create a VPC. However, you create the VPC, it needs to have the following properties set:
  - DNS resolution: Set to yes.
  - DNS hostname: Set to yes.
  - VPC cidr set: VPC cidr should be set in the range that is allocated from AWS for your region.
Deployments

• ArcGIS Enterprise Cloud Builder CLI for AWS

Download the utility

You can obtain the ArcGIS Enterprise Cloud Builder CLI for AWS utility from My Esri. Download the file and extract it to your local drive. The default location is C:\Program Files\ArcGIS\CloudBuilder\AWS\CLI, but you can specify a different location for the extracted files if you are a Windows administrator.

Note:
After extracting cloudbuilder.exe inside any folder on local disk, make sure the user running the ArcGIS Enterprise Cloud Builder CLI for AWS utility has recursive write access to the Logs and Output folders.
Deployments

✓ Obtain the following files and upload to AWS S3 bucket and/or AWS CM
  - Esri AWS CLI PREP
  - Portal license file
  - Server license file
  - SSL Certificate file

✓ Allocate Elastic IP address for ArcGIS Base Enterprise
  - Update DNS Entries with Cname

✓ Create Load-Balancer for Server Deployments
  - CloudFormation Template
  - Import the SSL Certificate
  - Update DNS Entries with Cname

✓ Create VPC
  - AWS CLI PREP
  - CloudFormation Template
Deployments

Amazon S3 > arcgis10-6-
Deployments
## Deployments

### Certificate Details

**Status**
- **Status**: Issued
- **Detailed status**: The cert was imported at 2017-08-16T20:13:28UTC

### Details

<table>
<thead>
<tr>
<th>Type</th>
<th>Imported</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Yes</td>
</tr>
<tr>
<td><strong>Domain name</strong></td>
<td>* bd.esri.com</td>
</tr>
<tr>
<td>Number of additional names</td>
<td>1</td>
</tr>
<tr>
<td><strong>Additional names</strong></td>
<td>bd.esri.com</td>
</tr>
<tr>
<td><strong>Identifier</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Serial number</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Associated resources</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Imported at</strong></td>
<td>2017-08-16T20:13:28UTC</td>
</tr>
<tr>
<td><strong>Not after</strong></td>
<td>2018-10-10T12:00:00UTC</td>
</tr>
<tr>
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<td><strong>Public key info</strong></td>
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<td><strong>Signature algorithm</strong></td>
<td>RSA 2048-bt</td>
</tr>
<tr>
<td><strong>ARN</strong></td>
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</tr>
</tbody>
</table>

[Image of certificate details]
Deployments

VPC Dashboard

Virtual Private Cloud

Security

VPN Connections

Virtual Private Gateways

VPC Connections

Customer Gateways

Network ACLs

Security Groups

Endpoints

Peering Connections

Egress Only Internet Gateways

DHCP Options Sets

Elastic IPs

Endpoints

NAT Gateways

SOG Gateway

VPC Dashboard

Create VPC

Actions

Virtual Private Cloud

Your VPCs

Subnets

Route Tables

Internet Gateways

Egress Only Internet Gateways

DHCP Options Sets

Elastic IPs

Endpoints

NAT Gateways

Peering Connections

Security

Network ACLs

Security Groups

VPN Connections

Customer Gateways

Virtual Private Gateways

VPC Connections

Create Route Table

Delete Route Table

Set As Main Table

Create Subnet

Create Internet Gateway

Delete

Attach to VPC

Detach from VPC

Search Internet Gateways and

Summary

Tags

ID: igw-437b4c69

Attached VPC ID: vpc-9bc70989

Utilities-dev-gw

Attached

Available
Deployments

```json

```

```

```
```
Deployments

```json

"DeploymentDetails":{
  "DeploymentName": "MyDeployment",
  "ArcGISVersion": "10.6",
  "OperatingSystem": "Ubuntu"
},

"AWSCredentials":{
  "AWSProfileName": "myprofile",
  "AWSRegion": "us-west-2"
},

"CloudFormationParameters":{
  "Default": {
    "VPCId": "vpc-11cl11111",
    "Subnet1": "subnet-123456",
    "Subnet2": "subnet-98760",
    "DriveSizeRoot": "100",
    "DriveSizeData": "200",
    "KeyName": "MyAWSKeyName",
    "FSInstanceType": "m4.large",
    "ASInstanceType": "m4.2xlarge",
    "SecondaryInstances": "0",
    "BDSInstanceType": "r4.xlarge",
    "BDSInstances": "0",
    "DBEngine": "none",
    "DBInstanceClass": "db.m4.large",
    "DBAllocatedStorage": "200",
    "DeploymentBucket": "myS3bucket",
    "ServerLicenseFile": "Server.ecp",
    "PortalLicenseFile": "Portal.prvc",
    "StoreType": "Filesystem",
    "SiteAdmin": "admin",
    "SiteAdminPassword": "Password!",
    "RunAsPassword": "Run_As_Password",
    "SSLCertificateFile": "mySSLcertificate.pfx",
    "SSLCertificatePassword": "SSLCertPassword",
    "SSLCertificateARN": "arn:aws:iam:us-west-2:***:certificate/**",
    "PostInstallationScript": "none"
  }
}

"BaseEnterprise":{
  "SiteEIPAllocationID": "eipalloc-e11111d1",
  "SiteDomain": "mysitename.bd.esri.com",
  "InstanceType": "m4.xlarge",
  "Type": "AllInOne"
},

"Server":{
  "ELBName": "elbname-ELB-1A1B1CD1E1F1",
  "SiteDomain": "myarcgisserver site.bd.esri.com",
  "ServerLicenseFile": "Server.ecp",
  "SecondaryInstances": "1",
  "Federate":true
},

"GeoEvent":{
  "SiteEIPAllocationID": "eipalloc-e22222d2",
  "SiteDomain": "geoevent.bd.esri.com",
  "ServerLicenseFile": "Server_GeoEvent.prvc",
  "Federate":true
},

"GeoAnalytics":{
  "ELBName": "elbname-ELB-2A2B2CD2E2F2",
  "SiteDomain": "geoanalytics.bd.esri.com",
  "ServerLicenseFile": "Server_GeoAnalytics.prvc",
  "SecondaryInstances": "1",
  "Federate":true
},

"RasterAnalytics":{
  "ELBName": "elbname-ELB-3A3B3CD3E3F3",
  "SiteDomain": "raster.bd.esri.com",
  "CloudStore33BucketPath": "yourbucket/yourfolder",
  "ServerLicenseFile": "Server_Image.prvc",
  "SecondaryInstances": "1",
  "Federate":true
},

"DNSParameters":{
  "AWSR53ZoneId": ""
}
```
Deployments

```
"DeploymentDetails": {
  "DeploymentName": "MyDeployment",
  "ArcGISVersion": "10.6",
  "OperatingSystem": "Ubuntu"
},

"AWSCredentials": {
  "AWSProfileName": "myprofile",
  "AWSRegion": "us-west-2"
},

"CloudFormationParameters": {
  "Default": {
    "VPCId": "vpc-1lc111111",
    "Subnet1": "subnet-123456",
    "Subnet2": "subnet-98760",
    "DriveSizeRoot": "100",
    "DriveSizeData": "200",
    "KeyName": "MyAWSKeyเกษ์",
    "FSInstanceType": "m4.large",
    "ASInstanceType": "m4.2xlarge",
    "SecondaryInstances": "0",
    "BD8Instances": "0",
    "DBEngine": "none",
    "DBInstanceClass": "db.m4.large",
    "DBAllocatedStorage": "200",
    "DeploymentBucket": "myS3bucket",
    "ServerLicenseFile": "Server.pec",
    "PortalLicenseFile": "Portal.prvc",
    "StoreType": "FileSystem",
    "SiteAdmin": "admin",
    "SiteAdminPassword": "Password!",
    "RunAsUserPassword": "Run_As_Pa$$Word",
    "SSLCertificateFile": "mySSLcertificate.pfx",
    "SSLCertPassword": "SSLcertPassword",
    "SSLCertificateARN": "arn:aws:iam:us-west-2:***:certificate/**",
    "PostInstallationScript": "none"
  }
},

"BaseEnterprise": {
  "SiteEIPAllocationID": "eipalloc-e11111d1",
  "SiteDomain": "mysite.name.bd.esri.com",
  "InstanceType": "m4.xlarge",
  "Type": "AllInOne"
},

"Server": {
  "EIPName": "eipname-ELB-1AlB1DE1E1IP1",
  "SiteDomain": "myarcgiserversite.bd.esri.com",
  "ServerLicenseFile": "Server.pec",
  "SecondaryInstances": "1",
  "Federate": "true"
},

"GeoEvent": {
  "SiteEIPAllocationID": "eipalloc-e22222d2",
  "SiteDomain": "genevent.bd.esri.com",
  "ServerLicenseFile": "Server_GeoEvent.prvc",
  "Federate": "true"
},

"GeoAnalytics": {
  "EIPName": "eipname-ELB-2A2B2CD2E2FP2",
  "SiteDomain": "geoanalytics.bd.esri.com",
  "ServerLicenseFile": "Server_GeoAnalytics.prvc",
  "SecondaryInstances": "1",
  "Federate": "true"
},

"MasterAnalytics": {
  "EIPName": "eipname-ELB-3A3B3C3DE3FP3",
  "SiteDomain": "raster.bd.esri.com",
  "CloudStore3BucketPath": "yourbucket/yourfolder",
  "ServerLicenseFile": "Server_Image.prvc",
  "SecondaryInstances": "0",
  "Federate": "true"
},

"DNSParameters": {
  "AWSRoute53Identity": ""
}
```
Deployments

```json

"BaseEnterprise": {
  "SiteEIPAllocationID": "eipalloc-e11111d1",
  "SiteDomain": "myesri.com",
  "InstanceType": "m4.xlarge",
  "Type": "AllInOne"
},

"Server": {
  "ELBName": "elbname-ELB-1A1B1C1D1E1F1",
  "SiteDomain": "myarcgisserver.com",
  "ServerLicenseFile": "Server_ecl",
  "SecondaryInstances": "1",
  "Federate": true
},

"GeoEvent": {
  "SiteEIPAllocationID": "eipalloc-e22222d2",
  "SiteDomain": "geoevent.data.com",
  "ServerLicenseFile": "Server_GeoEvent.prvc",
  "Federate": true
},

"GeoAnalytics": {
  "ELBName": "elbname-ELB-2A2B2C2D2E2F2",
  "SiteDomain": "geoanalytics.data.com",
  "ServerLicenseFile": "Server_GeoAnalytics.prvc",
  "SecondaryInstances": "1",
  "Federate": true
},

"RasterAnalytics": {
  "ELBName": "elbname-ELB-3A3B3C3D3E3F3",
  "SiteDomain": "raster.data.com",
  "CloudStore3DBucketPath": "yourbucket/yourfolder",
  "ServerLicenseFile": "Server_Image.prvc",
  "SecondaryInstances": "1",
  "Federate": true
},

"DNSParameters": {
  "AWS53ZoneId": ""
}

```


<table>
<thead>
<tr>
<th>Stack Name</th>
<th>Created Time</th>
<th>Status</th>
<th>Description</th>
</tr>
</thead>
</table>
Deployments

**Servers**

You can add ArcGIS Server sites to your portal to achieve a single-sign-on experience, share items, and optionally host services. A server that has been added to a portal is called a federated server.

**Federated Servers**

Add one or more servers to your portal.

- **VALIDATE SERVERS**
- **ADD SERVER**

**Servers**

- https://mysitename.bd.esri.com/server
- https://myarcgiserversite.bd.esri.com/arcgis
- https://geoanalytics.bd.esri.com/arcgis
- https://raster.bd.esri.com/arcgis

**Hosting Server**

Optionally choose one of your servers to act as your portal’s hosting server. Your portal members will be able to publish services to this server. ArcGIS Server’s Managed Database must be configured on the site before it can be designated as the portal’s hosting server.

- mysitename.bd.esri.com
## Deployments

**Launch Instance**

- **Name**: cliUtilitiesDevEnt-BaseEnterpriseStack
  - **ArcGIS Version**: 10.6.0
  - **Instance ID**: i-03

- **Name**: cliUtilitiesDevEnt-BaseEnterpriseStack-bds
  - **ArcGIS Version**: 10.6.0
  - **Instance ID**: i-03

- **Name**: cliUtilitiesDevEnt-GeoAnalyticsStack-fileserver
  - **ArcGIS Version**: 10.6.0
  - **Instance ID**: i-03

- **Name**: cliUtilitiesDevEnt-GeoAnalyticsStack-primary
  - **ArcGIS Version**: 10.6.0
  - **Instance ID**: i-03

- **Name**: cliUtilitiesDevEnt-GeoEventStack
  - **ArcGIS Version**: 10.6.0
  - **Instance ID**: i-03

- **Name**: cliUtilitiesDevEnt-ServerStack-fileserver
  - **ArcGIS Version**: 10.6.0
  - **Instance ID**: i-03

- **Name**: cliUtilitiesDevEnt-ServerStack-primary
  - **ArcGIS Version**: 10.6.0
  - **Instance ID**: i-03

- **Name**: cliUtilitiesDevEnt-ServerStack-secondary
  - **ArcGIS Version**: 10.6.0
  - **Instance ID**: i-03

- **Name**: cliUtilitiesDevEntUN-ServerStack-fileserver
  - **ArcGIS Version**: 10.6.0
  - **Instance ID**: i-03

**Instance State**: Running

- **Status Checks**: 2/2 checks...
- **IPv4 Public IP**: 54.24.
• Architecture
• Deployment
• Environment Availability
• Monitor
• Update Licenses
• Disaster Recovery Deployment
• Upgrade
Environment Availability

AWS Lambda

Amazon CloudWatch

- cliUtilitiesDevEnt-ServerStack-StartStackFunction-VPVQC6UT8MBF
- cliUtilitiesDevEnt-ServerStack-StopStackFunction-JFX1KNI43L39

Rules > EC2-START-6am-EST

Summary

- ARN: arn:aws:events:us-east-1:30005113627:rule/EC2-START-6am-EST
- Schedule: Cron expression
- Next 10 Triggers: Date(s)
- Status: Disabled
- Description: EC2-START-7am-EST
- Monitoring: Show metrics for the rule

Targets

- Filter: Lambda function
- Resource name: EC2-START
- Input: Matched event
- Architecture
- Deployment
- Environment Availability
  - Monitor
  - Update Licenses
  - Disaster Recovery Deployment
  - Upgrade
What is ArcGIS Monitor Server?

ArcGIS Monitor Server is a web-based dashboard that allows you to view alerts and visualize historical data for various time periods. Reports with statistics can be used to visualize resource usage and enhance communications among GIS, IT, business owners, and senior management.

Statistics in ArcGIS Monitor

ArcGIS Monitor makes full use of statistics; therefore, administrators should be familiar with the following basic statistics: min, max, average, and percentile. For deployments with many counters and large amounts of historical data, analyzing tabular statistics is more effective than analyzing charts. When the time span of a report is less than 12 hours, charts display real-time data values at the collection interval. When the time span of a report is greater than 12 hours, the chart displays hourly averages. As a result, the chart is flattened and does not show maximum value. Table statistics always display true values for min, max, percentile, and so on, regardless of the time span.
Monitoring

Not just system monitoring but Service performance!
Monitoring

ArcGIS Monitor Administrator

- Extension
  - Counter: If alert selections are empty, click the Test button
    - Throughput (Tr/sec) (LEIPC-PhillyCalls)
  - Alert Type: Equal To
  - Validation Value: 0

- Configured Alerts
  - Name | Category | Alert Type | Value | Note | Delete
  - Throughput (Tr/sec) (LEIPC-PhillyCalls) | | Equal To | 0 | Alert - PhillyCalls Tr/Sec = 0 | Delete

Feature ArcGIS Monitor expires on 2-27-2018
- Architecture
- Deployment
- Environment Availability
- Monitor
  - Update Licenses
  - Disaster Recovery Deployment
  - Upgrade
License Updates / Apply Patches
- Architecture
- Deployment
- Manage Costs
  - Environment Availability
- Monitor
- Update Licenses
  - Disaster Recovery Deployment
  - Upgrade
Disaster Recovery
Disaster Recovery

Ohio us-east-2

AZ

Subnet1

10.18.0.0/16
10.18.1.0/24
10.18.2.0/24

AZ

Subnet2

10.18.3.0/24
10.18.4.0/24
10.18.5.0/24

AWS

VPC
Disaster Recovery

Instances need to retain Private IP addresses
Disaster Recovery

Update Host file
Domain = New ElasticIP
Disaster Recovery

Update DNS to new site
• Architecture
• Deployment
• Manage Costs
  - Environment Availability
• Monitor
• Update Licenses
• Disaster Recovery Deployment
• Upgrade
Disaster Recovery

Ohio us-east-2

Oregon us-west-2
Upgrade

Ohio us-east-2

webgisdr

New Releases

Upgrading
Upgrade

Ohio us-east-2

New Releases

Upgrading

webgisdr
• Architecture
• Deployment
• Manage Costs
  - Environment Availability
• Monitor
• Update Licenses
• Disaster Recovery Deployment
• Upgrade
Success Stories

• Let us know if you have a success story to share
Please Take Our Survey on the App

Download the Esri Events app and find your event

Select the session you attended

Scroll down to find the feedback section

Complete answers and select “Submit”