



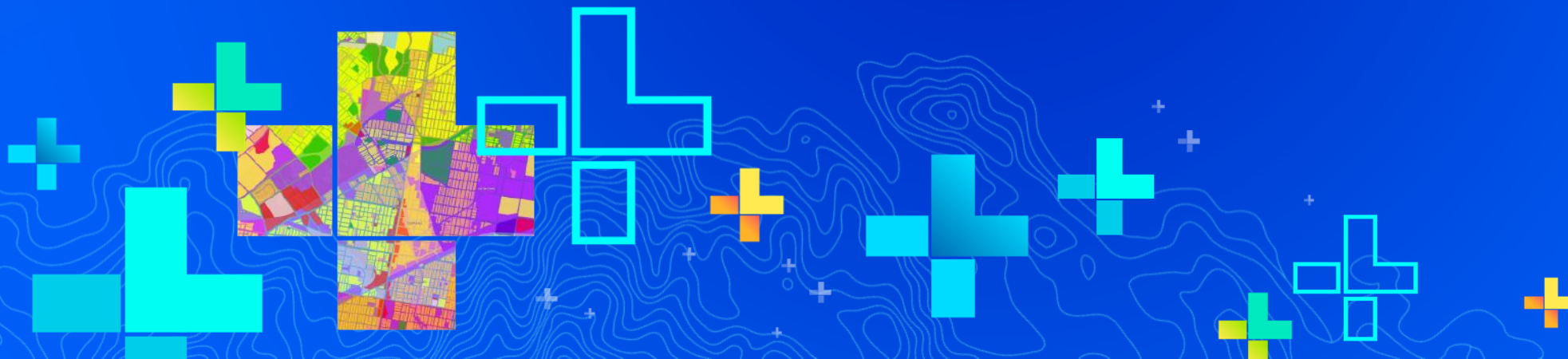
Automating Your Deployment

Cameron Kroeker

Nik Shampur

Cherry Lin

SEE
WHAT
OTHERS
CAN'T

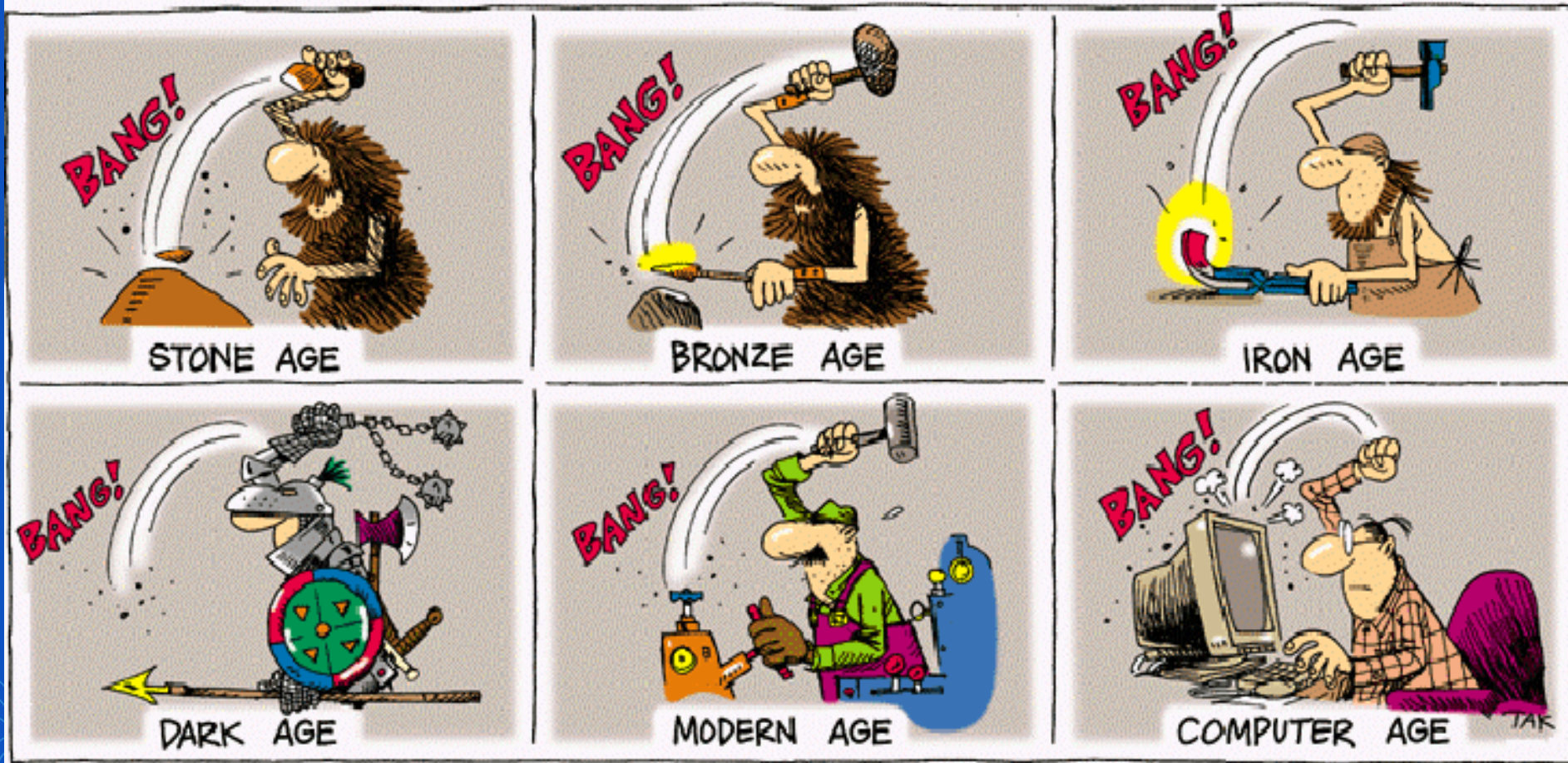


Quick Survey

- Your role in your organization?
- Already using Esri provided automation?
- Which one?
- Are you using it on the cloud?

Age of Automation

Nothing can stop automation



Automation Tools

Deployment Automation

How you setup the software



ArcGIS Enterprise
Builder



Amazon Web
Services



Microsoft
Azure



Chef



Powershell
DSC



ArcGIS API
for Python



webgisdr
Utility

...

and more

Deployment automation tools styles/experiences

Wizard



ArcGIS Enterprise
Builder

Machine Images + Tooling



Amazon Web
Services



Microsoft
Azure

Script-based



Chef



Powershell
DSC

Best fit environments for deployment automation tools



ArcGIS Enterprise
Builder



Amazon Web
Services



Microsoft
Azure



Chef



Powershell
DSC

Best fit environments for deployment automation tools



On-premises deployments

All-in-one, single
machine
deployments **only**



ArcGIS Enterprise
Builder

aws

Amazon Web
Services



Microsoft
Azure

Any
deployment
scenario



Chef



Powershell
DSC

Tools that have deep dive sessions

Tools that have a deep dive session we will overview **quickly**



ArcGIS Enterprise
Builder



Amazon Web
Services



Microsoft
Azure



Chef



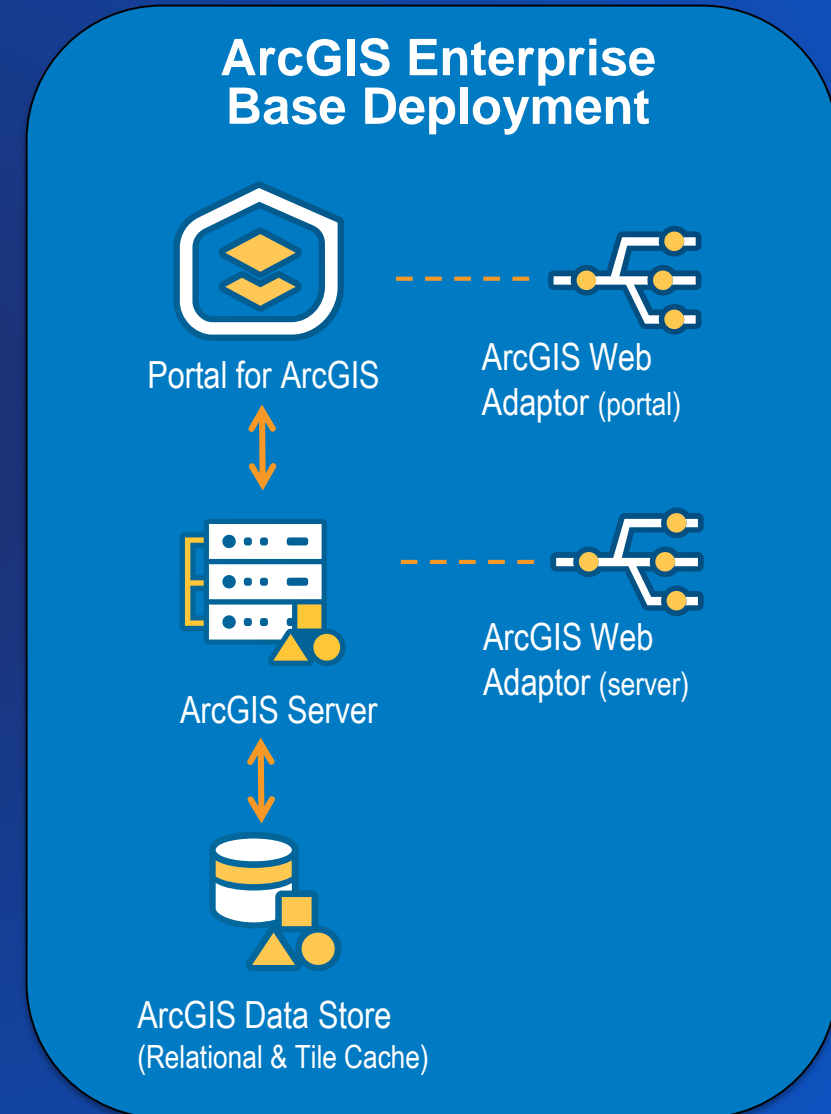
PowerShell
DSC

ArcGIS Enterprise Builder

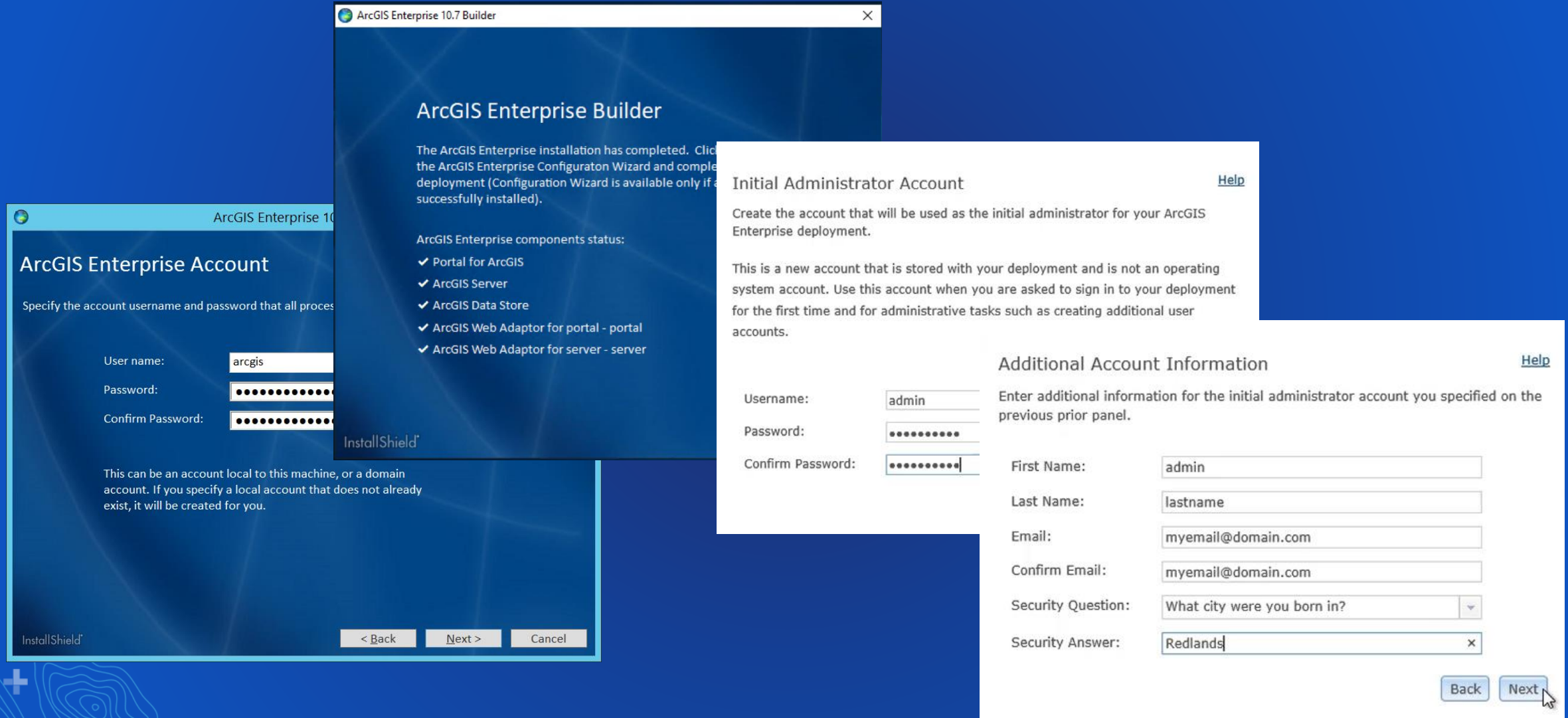


ArcGIS Enterprise Builder – Single Machine Base Deployment

- **Minimum options**
 - Install directory
 - RunAs account username/password
(Windows only)



ArcGIS Enterprise Builder | UI for Installation and Configuration



The image displays the ArcGIS Enterprise Builder UI, which is used for installing and configuring ArcGIS Enterprise. The interface is divided into several sections:

- ArcGIS Enterprise Builder**: The main window, titled "ArcGIS Enterprise 10.7 Builder". It contains a message stating: "The ArcGIS Enterprise installation has completed. Click the ArcGIS Enterprise Configuration Wizard and complete the deployment (Configuration Wizard is available only if ArcGIS Enterprise is successfully installed)." Below this, it lists the "ArcGIS Enterprise components status":
 - ✓ Portal for ArcGIS
 - ✓ ArcGIS Server
 - ✓ ArcGIS Data Store
 - ✓ ArcGIS Web Adaptor for portal - portal
 - ✓ ArcGIS Web Adaptor for server - server
- ArcGIS Enterprise Account**: A sub-window titled "ArcGIS Enterprise 10.7 Builder" with the subtitle "ArcGIS Enterprise Account". It prompts the user to "Specify the account username and password that all processes will use." It includes fields for "User name:" (containing "arcgis"), "Password:" (masked with dots), and "Confirm Password:" (masked with dots). Below these fields, a note states: "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." At the bottom, there are buttons for "< Back", "Next >", and "Cancel".
- Initial Administrator Account**: A sub-window titled "Initial Administrator Account" with a "Help" link. It contains the text: "Create the account that will be used as the initial administrator for your ArcGIS Enterprise deployment." and "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." It includes fields for "Username:" (containing "admin"), "Password:" (masked with dots), and "Confirm Password:" (masked with dots).
- Additional Account Information**: A sub-window titled "Additional Account Information" with a "Help" link. It prompts the user to "Enter additional information for the initial administrator account you specified on the previous prior panel." It includes fields for "First Name:" (containing "admin"), "Last Name:" (containing "lastname"), "Email:" (containing "myemail@domain.com"), "Confirm Email:" (containing "myemail@domain.com"), "Security Question:" (a dropdown menu showing "What city were you born in?"), and "Security Answer:" (containing "Redlands"). At the bottom, there are buttons for "Back" and "Next".

Upgrading an Enterprise Deployment

- One click experience that upgrades all components
- Upgrade only deployments previously deployed by Enterprise Builder

License and Upgrade ArcGIS Enterprise

[Help](#)

The components installed on this machine are ready to be upgraded.

Select a license file (*.json) to authorize your ArcGIS Enterprise portal's users and apps. Click Upgrade to continue.

License file:

Command Line Utilities – Install, Configure and Upgrade Silently

- Install

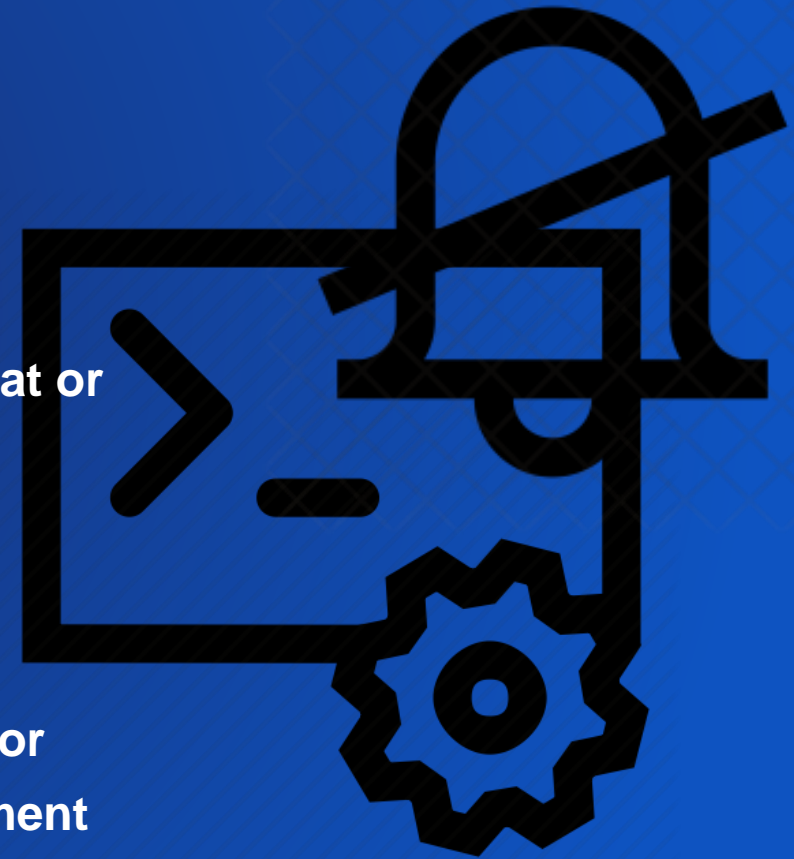
- <location of setup>/Builder.exe or
- ./Setup

- Configure

- <ArcGIS Server Install
Dir>/tools/configurebasedeployment/configurebasedeployment.bat or
- <location of utility>\configurebasedeployment

- Upgrade

- <ArcGIS Server Install
Dir>/tools/upgradebasedeployment/upgradebasedeployment.bat or
- <ArcGIS Server installation directory>\tools\upgradebasedeployment



ArcGIS Enterprise Builder for Automation - Takeaways

- **Silent Option**
 - Schedule to execute install/Configure/Upgrade
 - Repeat on different machines
- **Limitations**
 - Single machine only
 - Standardizes the installation directories for all software components
 - Very limited options
- **More customizing:**
 - Powershell DSC or Chef




Deep Dive Session

Title: Introduction to ArcGIS Enterprise and Building Your First Deployment

Date: 03/05/2019

Time: 2:30pm - 3:30pm

Presenter: Jonathan Quinn



The Builder deep dive session has already passed
– watch the video later and/or **please bring questions to the Expo.**



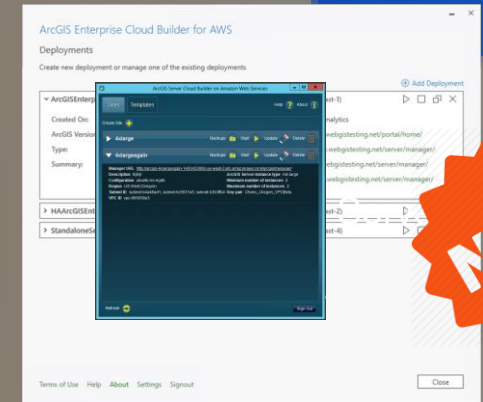
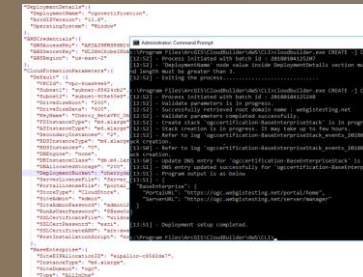
ArcGIS Enterprise Automation on AWS



Getting Started

On-premise	AWS
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	Esri authorization files Domain_name for your application SSL Certificate for your domain AWS Account

Deployment Tools for AWS



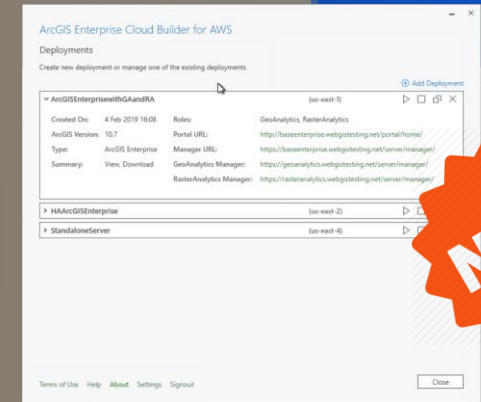
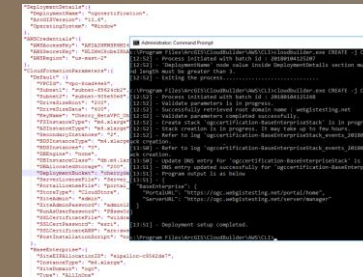
Power



Simplicity

Deployment Tools for AWS

AWS Private Image: User's AMI + Esri ArcGIS Enterprise package



Power



Simplicity

Deep Dive Session

Title: ArcGIS Enterprise: Cloud Operations using Amazon Web Services

Date: 03/07/2019

Time: 4:00pm - 5:00pm

Location: Catalina/Madera



ArcGIS Enterprise on Azure



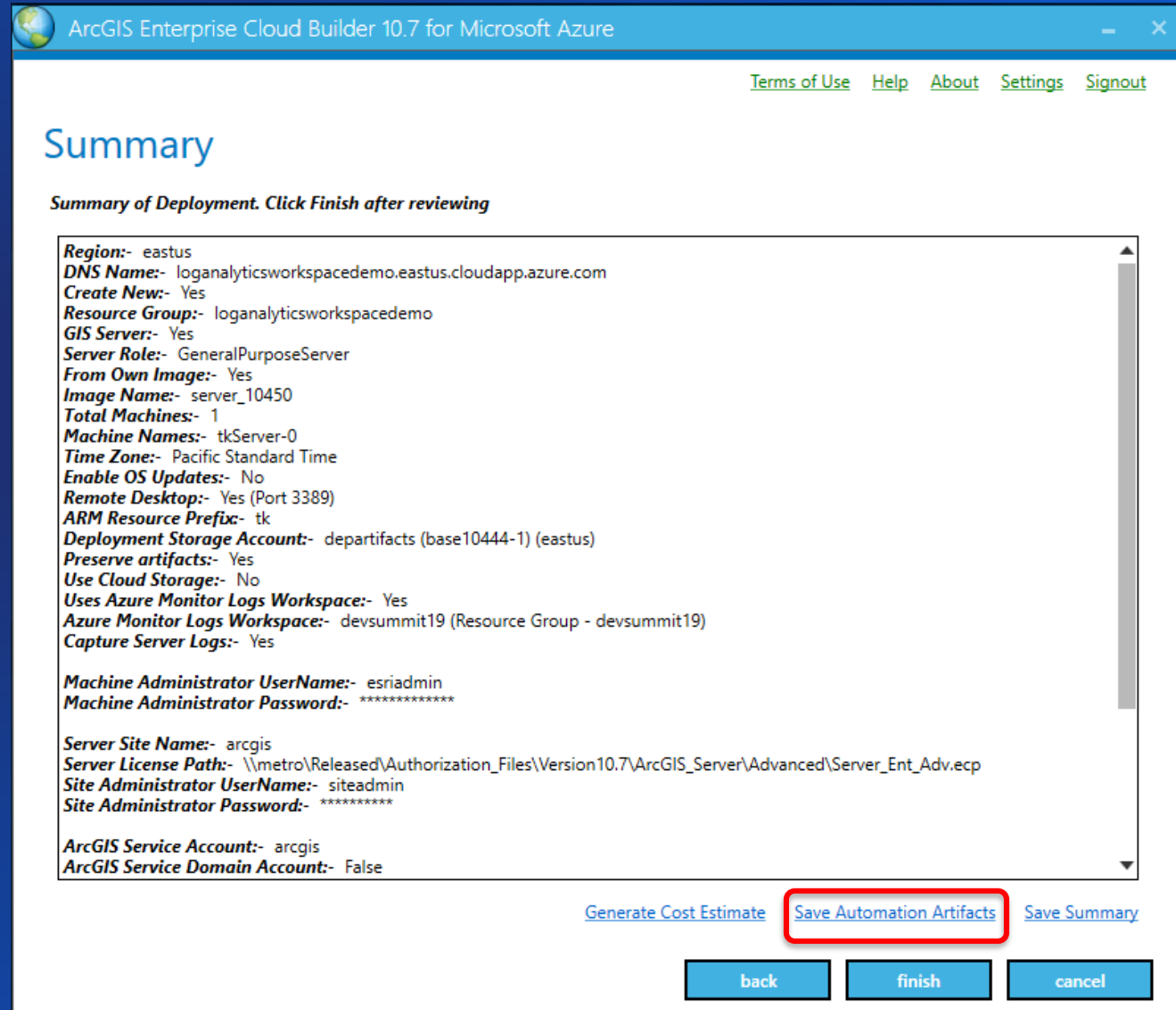
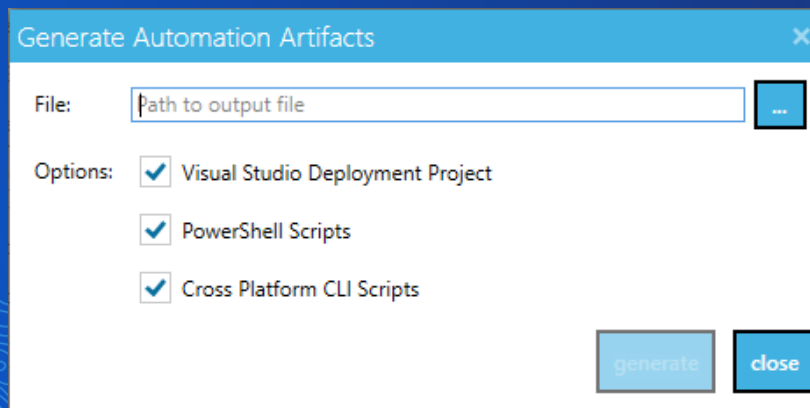
Deploying on Azure

- Ready to use Virtual Machine Images
 - Public Azure (54 Regions)
 - U.S. Government Cloud (Fairfax)
- Easy to deploy and manage
 - Deployment Tools
 - Cloud Builder
 - Automation

The screenshot displays the Microsoft Azure Marketplace page for ArcGIS Enterprise. The top navigation bar includes links for Why Azure, Solutions, Products, Documentation, Pricing, Partners, Blog, Resources, and Support, along with a 'FREE ACCOUNT' button. The main content area is titled 'ArcGIS Enterprise' and features the Esri logo, a 'GET IT NOW' button, and links to Categories, Compute, Legal, License Agreement, and Privacy Policy. The 'Overview' section describes ArcGIS Enterprise as the world's most versatile GIS server, providing complete control over geospatial assets and data. It lists two main components: ArcGIS for Server (for creating, managing, and deploying GIS services) and Portal for ArcGIS (for sharing maps, applications, and other geographic data). The 'Get Started!' section includes a 'sign in to azure' button and a checkbox for 'U.S. Government Cloud'. The 'Server Role' section, titled 'Select the role for your site based on its purpose', offers four options: ArcGIS Enterprise (selected), GeoEvent Server, GeoAnalytics Server, and Image Server. Each role is accompanied by a brief description of its capabilities and how it integrates with the ArcGIS ecosystem. At the bottom, there are 'back', 'next', and 'cancel' buttons.

Cloud Builder Overview

- Wizard driven deployment experience
- Base deployment + Distributed GIS
 - Single Machine/Tier
 - Multi Machine/Tiers
- Designer to generate automation artifacts



Deployment Options



Cloud Builder



Visual
Studio



PowerShell



BASH
THE BOURNE-AGAIN SHELL

Command Line



Windows



Mac



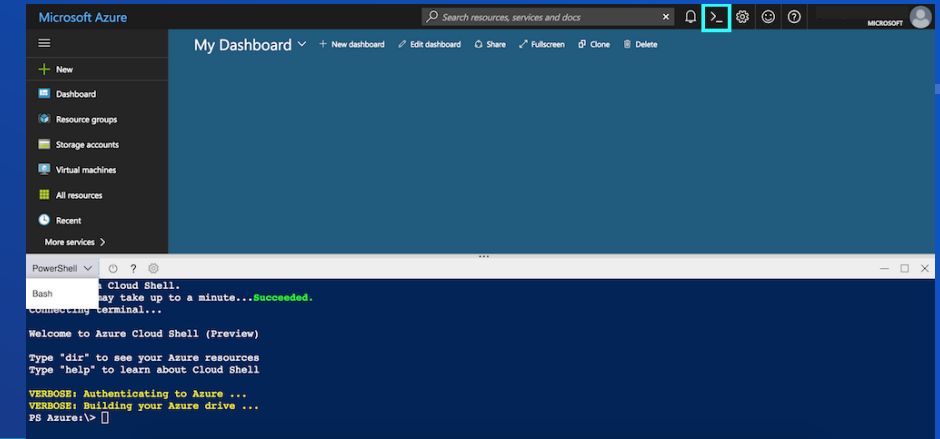
Linux

Integrate with ...

 Launch Cloud Shell



Azure Cloud Shell



PowerShell DSC



Travis CI

Cloud Builder VS. Automation



Visual
Studio



BASH
THE BOURNE-AGAIN SHELL



PowerShell

Customize or Extend

Wizard Driven

The screenshot shows the 'ArcGIS Enterprise Cloud Builder 10.5 for Microsoft Azure' application window. It features a 'Get Started!' section with links to 'Terms of Use', 'Help', 'About', and 'Signout'. Below this is a 'Machine Options' section with a sub-header 'Specify Virtual Machine Credentials and Machine Options such as TimeZone and OS Updates'. The 'MACHINE ADMINISTRATOR' section includes fields for 'User name' (machineadmin), 'Password' (masked with dots), and 'Re-Enter password' (masked with dots). The 'MACHINE OPTIONS' section includes a 'Size' dropdown (D4_v2 (8 Cores 28 GB Memory)), a 'Time zone' dropdown ((UTC-08:00) Pacific Time (US & Canada)), a 'Name' text box (arcgismv), and checkboxes for 'Enable Automatic Operating System Updates' (checked) and 'Enable Remote Desktop Access using Port' (unchecked, with port 3389). The 'VIRTUAL NETWORK OPTIONS' section includes a 'Virtual Network' dropdown (myVNET - eastus) and a 'Subnet' dropdown (Subnet-1 - 10.0.0.0/24). At the bottom right are 'back', 'next', and 'cancel' buttons.

Power

Simplicity

Deep Dive Session

ArcGIS Enterprise: Cloud Operations Using Microsoft Azure

Date: 03/07/2019

Time: 4:00pm - 5:00pm

Location: Pasadena/Sierra/Ventura



Microsoft Azure



Automation with PowerShell DSC



Use PowerShell DSC when ...

- Microsoft Shop
 - Bias towards Microsoft Windows Tools
 - PowerShell DSC is built into Windows
- Windows Administrators love PowerShell
 - DSC is a natural fit
- Low Tech solution for push automation across multiple machines
 - No centralized server needed



PowerShell
DSC

PowerShell over the years



PowerShell Releases

What is PowerShell DSC (Desired State Configuration)

“Declarative platform used for configuration, deployment, and management of systems.”

Automation Concepts

- Idempotent
- Declarative

```
New-SmbShare -Path '\\foo\share'
```

Not Idempotent

```
Import-Module ServerManager
#Check and install ASP.NET 4.5 feature
If (-not (Get-WindowsFeature "Web-Asp-Net45").Installed) {
    try {
        Add-WindowsFeature Web-Asp-Net45 -ErrorAction Stop
    }
    catch {
        Write-Error $_
    }
}
#Check and install Web Server Feature
If (-not (Get-WindowsFeature "Web-Server").Installed) {
    try {
        Add-WindowsFeature Web-Server -ErrorAction Stop
    }
    catch {
        Write-Error $_
    }
}
#Create a new website
Import-Module WebAdministration
New-WebSite -Name MyWebSite -Port 80 -HostHeader MyWebSite `
    -PhysicalPath "$env:systemdrive\inetpub\wwwroot\MyWebSite"

#Start the website
Start-WebSite -Name MyWebSite
```

Imperative

```
if(-not(Get-SmbShare -Name '\\foo\share'))
{
    New-SmbShare -Path '\\foo\share'
}
```

Add Checks to ensure idempotent

```
Configuration WebsiteConfig
{
    Node MyWebServer
    {
        WindowsFeature IIS
        {
            Ensure = "Present"
            Name = "Web-Server"
        }
        WindowsFeature ASP
        {
            Ensure = "Present"
            Name = "Web-Asp-Net45"
        }
        Website MyWebSite
        {
            Ensure = "Present"
            Name = "MyWebSite"
            PhysicalPath = "C:\inetpub"
            State = "Started"
            Protocol = @"http"
            BindingInfo = @("*:80:")
        }
    }
}
```

Declarative

PowerShell DSC

```
Configuration IISWebsite
{
    Node Server1, Server2
    {
        WindowsFeature IIS
        {
            Ensure      = "Present"
            Name         = "Web-Server"
        }

        WindowsFeature ASP
        {
            Ensure      = "Present"
            Name         = "Web-Asp-Net45"
        }
    }
}
```

```
Start-DscConfiguration 'server' -Verbose -Wait
```

Archive	Unpack .zip files
Environment	Manage env variables
File	Manage files, folders
Group	Manage local groups
Log	Write message to log
Package	Install/Uninstall .msi and setups
Registry	Manage registry keys & values
Script	Run PowerShell script blocks
Service	Manage Services
User	Manage local users
Windows Feature	Add/Remove Windows Features
Windows Process	Manage Processes

Built in DSC Resources

Wealth of DSC Resources

xHyper-V
xSafeHarbor xSmbShare xChrome
xDismFeature xDefender
xFailoverCluster xSQLServer
xComputerManagement xPython
x7Zip xPHP xWinEventLog
xWindowsUpdate xRobocopy xWindowsRestore
xWindowsContainer xSharePoint xBitLocker
xWebDeploy xWordPress
xDatabase
xMySQL xFirewall
xDisk

[PowerShell Gallery](#)

[DSC Resource Kit](#)

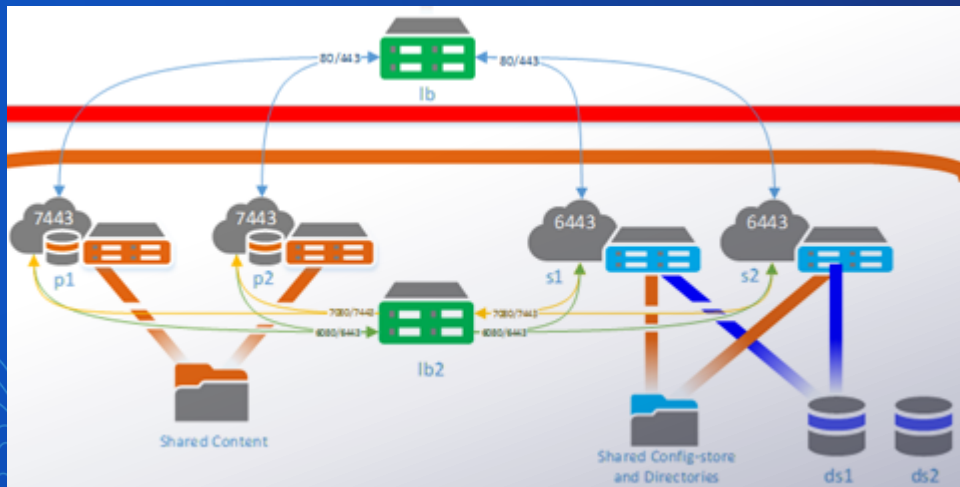
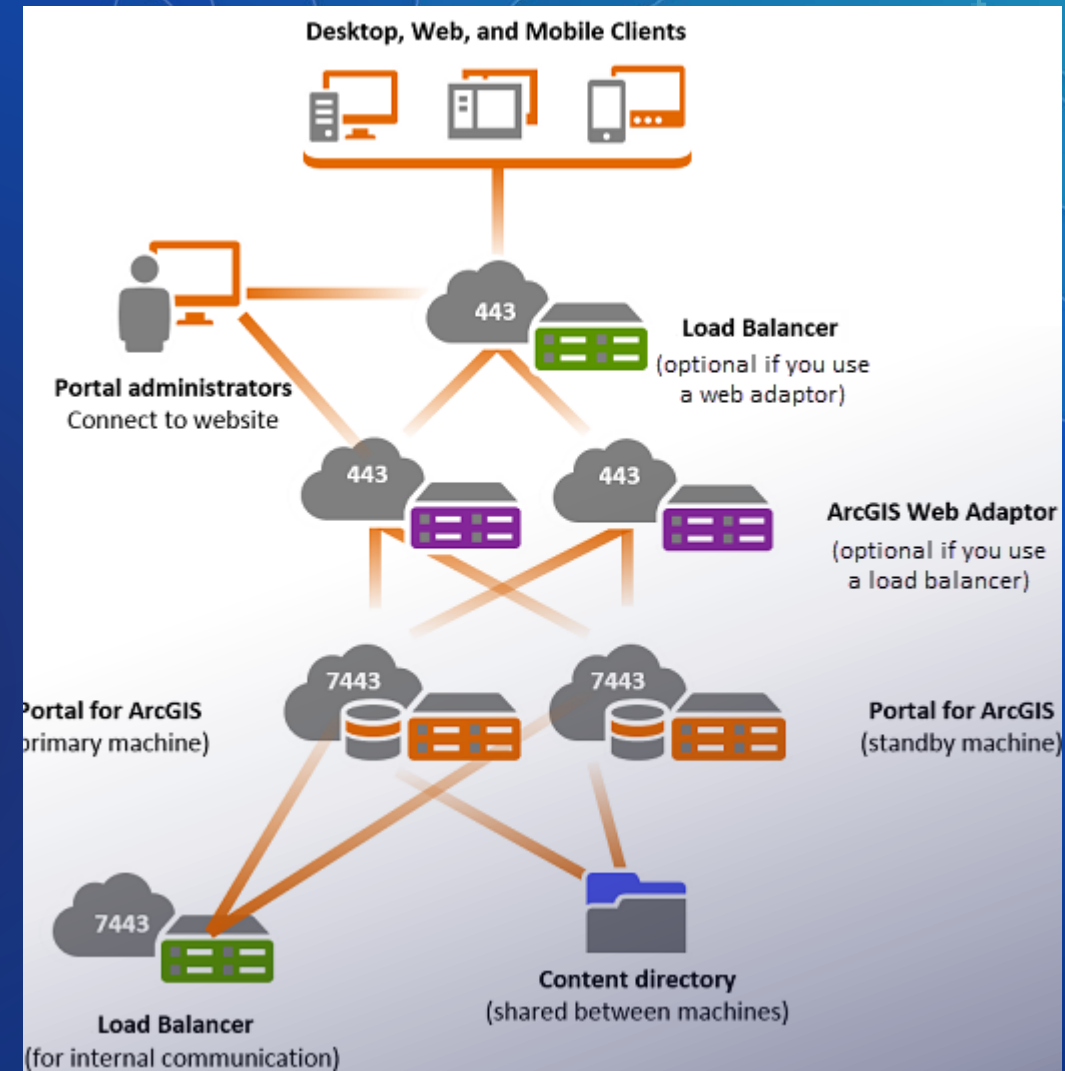
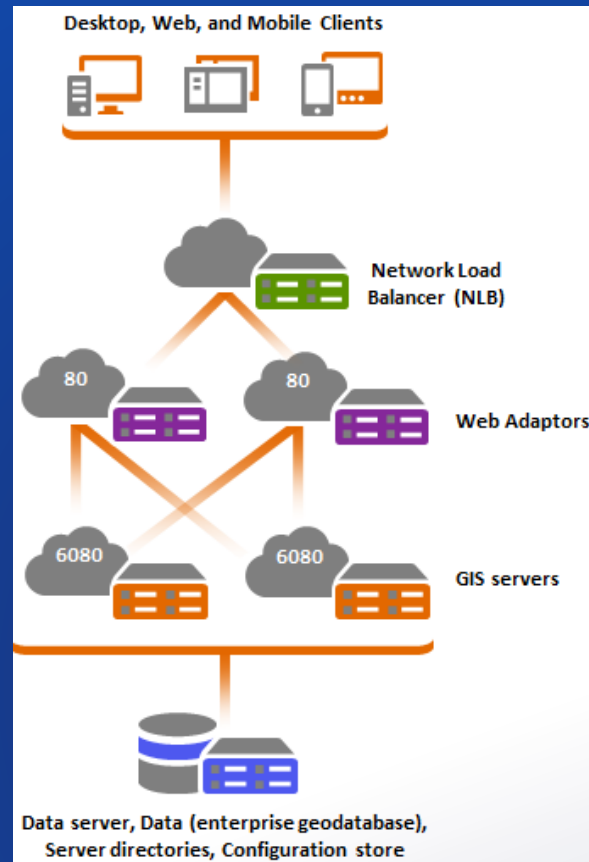
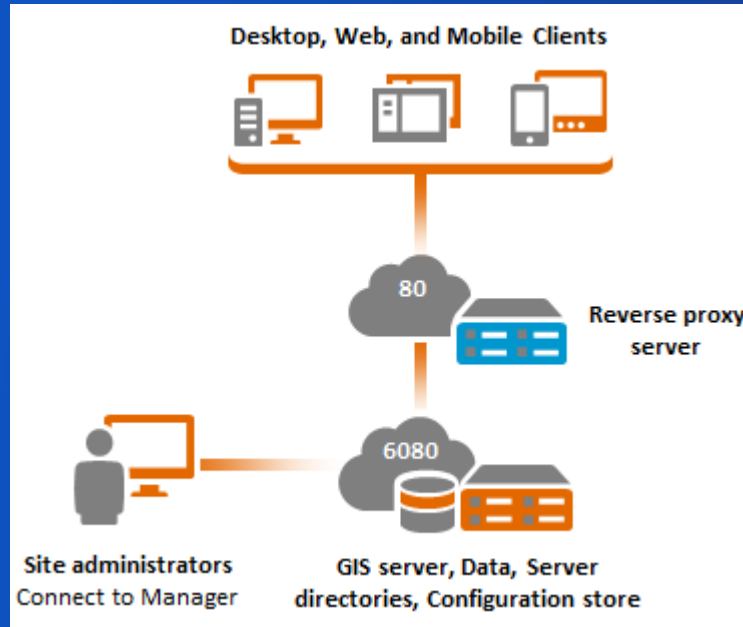
What about ArcGIS?

```
Configuration ArcGISServer
{
  Import-Module ArcGIS
  Node MyArcGISServer
  {
    ArcGIS MyArcGISSite
    {
      Ensure = "Present"
      ConfigStorePath = "C:\arcgis\server"
      SiteAdministrator = "..."
      State = "..."
    }
  }
}
```

Wouldn't this be great?

Not so Fast!

GIS Infrastructure



GIS Infrastructure needs vary

Discrete States

- Install Software
- License Software
- Configure Service Account
 - Create Windows Local/Domain User Account
 - Assign File System Privileges
 - Assign Windows Service to User
- Create Site
- Import SSL Certificates
- Register/Configure Databases or Data Stores
- Federate Site
- Stop/Start Server Services
- Publish Services

ArcGIS DSC Resources

ArcGIS_Install	Manages the (un)installation of ArcGIS (Server) Software
ArcGIS_License	Licenses ArcGIS (Server) Software
ArcGIS_ServiceAccount	Configures the 'Run As' Service with appropriate (file system) privileges
ArcGIS_Server	Configures the ArcGIS Server Site
ArcGIS_Portal	Configures the Portal for ArcGIS
ArcGIS_DataStore	Configures the ArcGIS DataStore
ArcGIS_Server_TLS	Configures SSL on a Server Site
ArcGIS_Portal_TLS	Configures SSL on a Portal Site
ArcGIS_WebAdaptor	Configures Web Adaptor on IIS for Portal/Server
ArcGIS_EGDB	Enables/Registers an SQL Server flavor EGDB with Server
ArcGIS_GeoEvent	Configures GeoEvent Extension for Server
ArcGIS_Federation	Configures Federation between Server and Portal
ArcGIS_IIS_TLS	Configures SSL on IIS
...	...

Do I need to learn all these DSC Resources to use it?

No!

We want the getting started experience to be simple

You only get one first impression

Getting Started



Getting Started

- Install ArcGIS PowerShell Module

```
PS C:\> Install-Module arcgis
```

- Edit (JSON) configuration file
 - Sample Configurations are
 - documented for common site topologies

- Start Configuration

```
"ConfigData": {  
  "Version": "10.5.1",  
  "ServerContext": "server",  
  "PortalContext": "portal",  
  "ServerRole": "GeneralPurposeServer",  
  "Credentials": {  
    "PrimarySiteAdmin": {  
      "UserName": "admin",  
      "Email": "shgoel@esri.com",  
      "Password": "changeit"  
    },  
    "ServiceAccount": {  
      "Password": "Arc_123456_Gis",  
      "UserName": "arcgis"  
    }  
  },  
  "Server": {  
    "LicenseFilePath": "\\\\metro\\ArcGIS_Automation\\Authorization_Files\\Version10.5\\Server_Ent_Adv_AllExt.prvc",  
    "Installer": {  
      "Path": "\\\\esri.com\\software\\Esri\\Released\\1051_Final\\ArcGIS_Server_Windows_1051_156124.exe",  
      "InstallDir": "C:\\\\ArcGIS\\Server",  
      "InstallDirPython": "C:\\\\Python27"  
    },  
    "ServerDirectoriesRootLocation": "C:\\\\arcgisserver\\directories",  
    "ConfigStoreLocation": "C:\\\\arcgisserver\\config-store"  
  },  
  "Portal": {  
    "LicenseFilePath": "\\\\metro\\ArcGIS_Automation\\Authorization_Files\\Version10.5\\portal_2000_1000.prvc",  
  }  
}
```

```
PS C:\> Configure-ArcGIS pathToConfigFile
```

Automation using PowerShell DSC | System Requirements

- PowerShell 5.0 or Higher
 - Windows Management Framework 5.0 or Higher
 - Windows Server 2012 and higher
- Automation delivered via
 - [PowerShell Gallery](#) (best experience)
 - [GitHub](#) (Manual Install)
- Download Installers and Licenses from my ESRI (regular means)

Demo

PowerShell DSC



Automation using PowerShell DSC | Key Takeaways

- New Automation Option at 10.6
 - Analogous to Chef Automation
 - Targets an audience with a bias towards Microsoft Windows tooling
 - Windows Admins love PowerShell
 - DSC - Natural Fit
 - Easy Low Tech Solution for Push Model
- Delivered via
 - PowerShell Gallery <https://www.powershellgallery.com/packages/ArcGIS/>
 - Github <https://github.com/Esri/arcgis-powershell-dsc>
- Supports Single and Multi machine sites
 - Install, Uninstall and Upgrade workflows

ArcGIS PowerShell DSC releases vs. ArcGIS Enterprise releases

10.6

10.6.1

10.7



PowerShell-dsc-1.0

PowerShell-dsc-1.1.x

PowerShell-dsc-2.0



Resources for ArcGIS PowerShell DSC

esri.github.io/arcgis-powershell-dsc



The screenshot shows the landing page for the ArcGIS PowerShell DSC repository. At the top is the Esri logo. Below it is a large purple banner with the text "Welcome to Windows PowerShell DSC for ArcGIS Enterprise!" and a subtext "Here, you'll find all you need to automate your Web GIS installation and administration from PowerShell." A button labeled "See what's new in 10.6.1" is positioned below the banner. The main content area is titled "Get started" and features a section for "What is ArcGIS Enterprise?" which includes a description of the platform and a button labeled "Get acquainted with Enterprise".

esri

Welcome to Windows PowerShell DSC for ArcGIS Enterprise!

Here, you'll find all you need to automate your Web GIS installation and administration from PowerShell.

ArcGIS Enterprise 10.6.1 is available now!

[See what's new in 10.6.1](#)

Get started



What is ArcGIS Enterprise?

ArcGIS Enterprise delivers industry-leading mapping and data analysis to your physical or cloud infrastructure. The software platform can be deployed in a variety of configurations – whatever best suits your organization.

[Get acquainted with Enterprise](#)

Automation with Chef



What is Chef and what do we offer for it

- One of the most popular IT automation toolkit
- Install ready-to-use resources
- Define the configuration
- Deploy exact the way you want.
- No required programming skills
- ArcGIS Automation team offers a range of resources for you to use:



Cookbooks

A full set of files to install a software product, such as:

- ArcGIS Enterprise
- ArcGIS Desktop
- Insights for ArcGIS

Recipes

An individual JSON file in a cookbook for a specific task:

- Install ArcGIS Server
- Federate a server
- Apply an authorization file


Roles

Our custom sets of recipes pulled to set up a machine:

- Base deployment
- ArcGIS Image Server
- ArcGIS (Big) Data Store

Getting Started

<http://esri.github.io/arcgis-cookbook/>




Welcome to Chef on ArcGIS Enterprise!

Here, you'll find all you need to automate your Web GIS installation and administration.

ArcGIS Enterprise 10.6 is available now!
[See what's new in 10.6](#)


Get Started



What is ArcGIS Enterprise?

ArcGIS Enterprise delivers industry-leading mapping and data analysis to your physical or cloud infrastructure. The software platform can be deployed in a variety of configurations – whatever best suits your organization.

[Get acquainted with Enterprise](#)






What is Chef?

Chef is a software framework to automate installation and configuration of IT components. It uses a Chef server, which can be deployed open-source, as SaaS, or with a subscription to Chef Automate.

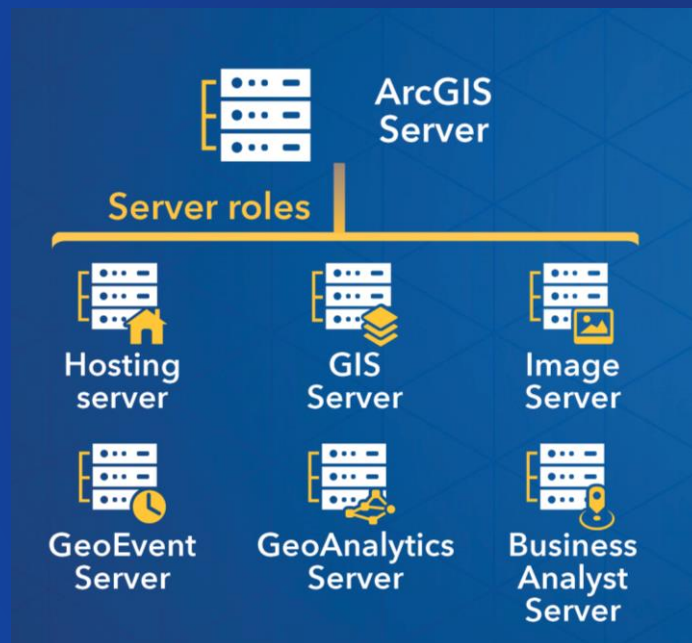
[Learn more about Chef](#)

Cookbooks for ArcGIS Enterprise deployments

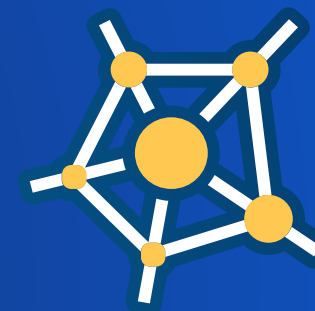


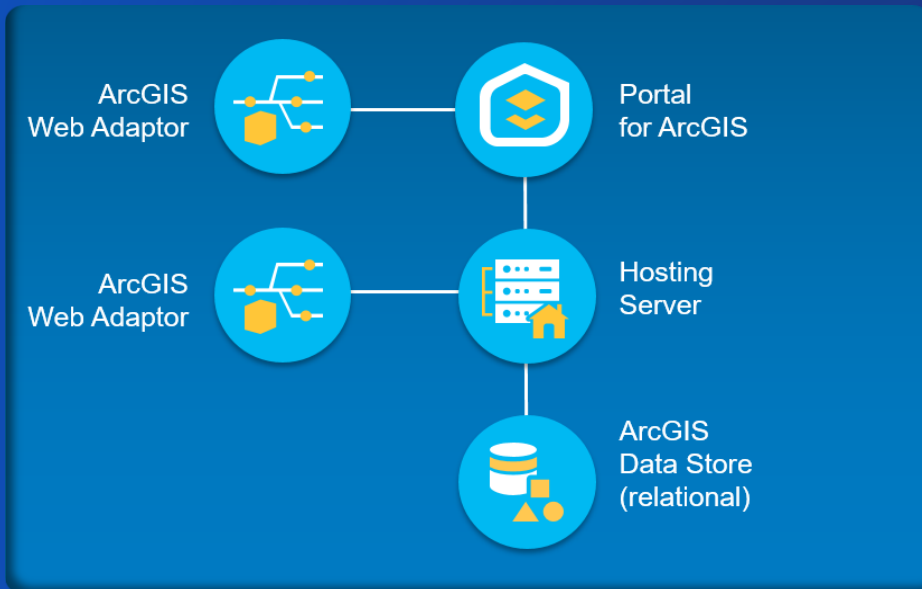
Plan your deployment

Base deployment, or extend with server roles?



One or many machines?





A Fresh ArcGIS Enterprise Install

Easy to Start

Install Chef Client and Download Cookbook

Edit Property json file

"chef-solo -j <properties>.json"

```
"archives":"\\\\esri.com\\Software\\Esri\\Released",
},
"web_adaptor":{
  "admin_access":true
},
"server":{
  "admin_username":"admin",
  "admin_password":"admin",
  "authorization_file":"\\\\metro\\ArcGIS_Automation\\",
},
"portal":{
  "admin_username":"admin",
  "admin_password":"esri.agp",
  "admin_email":"admin@mydomain.com",
  "security_question":"Your favorite ice cream flavor",
  "security_question_answer":"vanilla",
  "authorization_file":"\\\\metro\\ArcGIS_Automation\\",
},
},
"run_list":[
  "recipe[arcgis-enterprise::system]",
  "recipe[esri-iis]",
  "recipe[arcgis-enterprise::portal]",
  "recipe[arcgis-enterprise::portal_wa]",
  "recipe[arcgis-enterprise::server]",
  "recipe[arcgis-enterprise::server_wa]",
  "recipe[arcgis-enterprise::datastore]",

```

Idempotent

Demo

Chef – Single Machine Deployment



Upgrading an Existing Deployment

Upgrade

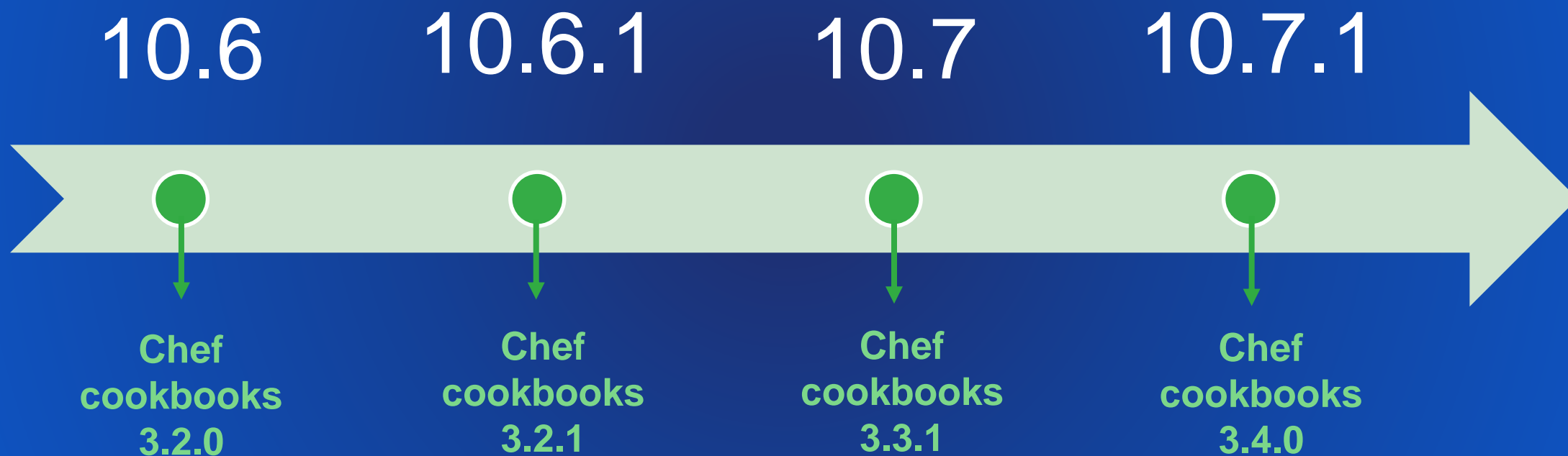
Download New Version of Cookbook

New Version #; New Setups; New License Files

"chef-solo -j <properties>.json"

```
    "run_as_user": "arcgis",
    "version": "10.6",
    "repository": {
      "archives": "\\\\esri.com\\Software\\Esri\\Release
    },
    "web_adaptor": {
      "admin_access": true
    },
    "server": {
      "admin_username": "admin",
      "admin_password": "admin",
      "authorization_file": "\\\\metro\\ArcGIS_Automation
    },
    "portal": {
      "admin_username": "admin",
      "admin_password": "esri.agp",
      "admin_email": "admin@mydomain.com",
      "security_question": "Your favorite ice cream flavor",
      "security_question_answer": "vanilla",
      "authorization_file": "\\\\metro\\ArcGIS_Automation
    }
  }
```


Using Chef Puts You on an “Upgrade Track”



Demo

Chef – Upgrade



Expanding Chef for Multi-machine deployments



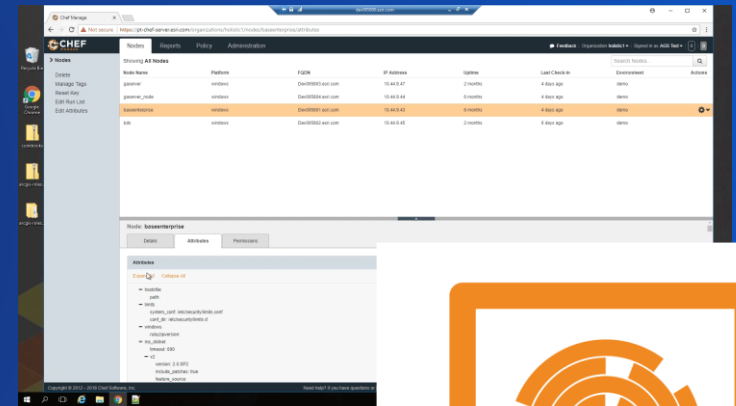
Expanding Chef for Multi-machine Deployment

- **Chef-Server**

- Central repository of all your files
- Three options for Chef Server
 - Open source on your own infrastructure
 - Subscribe to Hosted Chef Server (SaaS)
 - Subscribe to Chef Automate (full-stack software)

- **Chef Client**

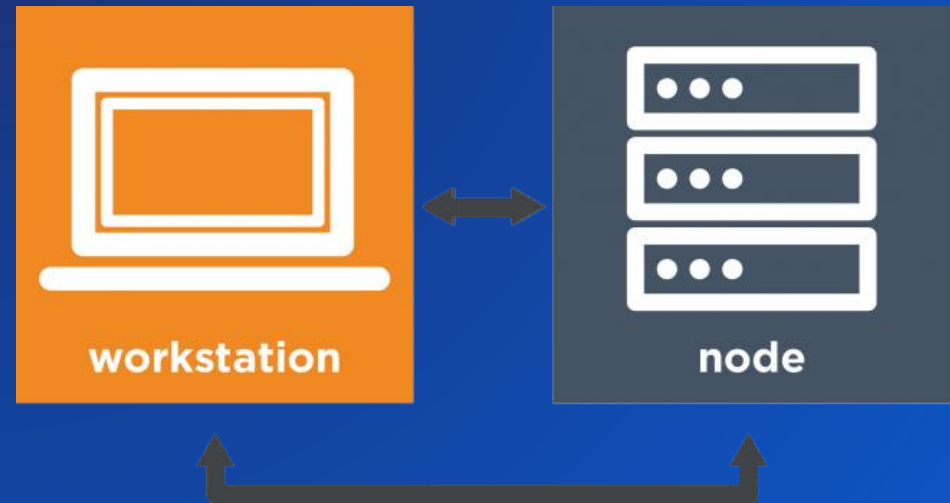
- Performs the work
- Receives necessary files from Chef Server



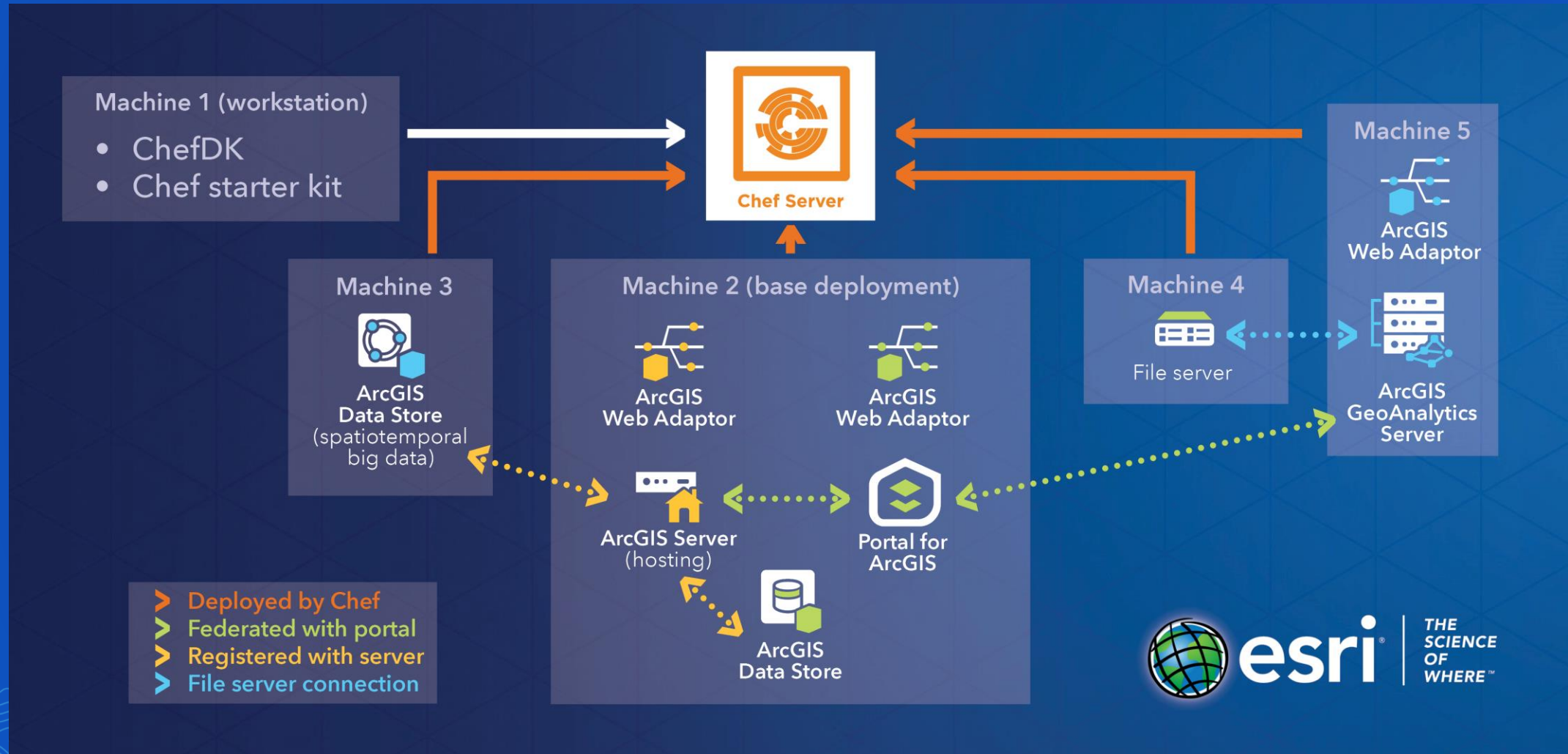
Chef Server

Expanding Chef for Multi-machine Deployment

- Chef-Run: Remote administration
 - SSH
 - WinRM
- OS Remote running Chef-solo
 - SSH
 - WinRM



Using Chef – A Typical Multi-machine Deployment



Tips, Tricks & Key Points



Plan Ahead

- **Need to plan**
 - Design
 - Configuration
 - Testing
- **Repeatable**
 - Success in production environment
 - Less downtime in production
 - Faster recovery



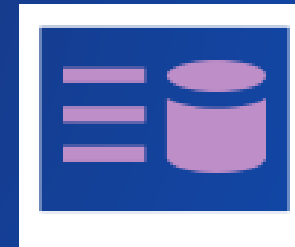
Production



Recovery



Dev



QA



Consider Baking a Base Image



Install Chef; Cookbook

Have Some Processes Done.
e.g, Setups, System Requirements

Have some components baked in,
e.g. base map, security updates, etc

Work With



ArcGIS API
for Python



webgisdr
Utility

- Other software deployment automation tools
- GIS workflow automation tools
 - Python API for ArcGIS
 - WebGISDR tool
- Whole system infrastructure automation

ArcGIS Software Repository

- A central location where all ArcGIS Software setups are stored
 - File share: local software repository
 - AWS S3 bucket
- At 10.7 and 10.7.1 all ArcGIS Cookbooks use this variable

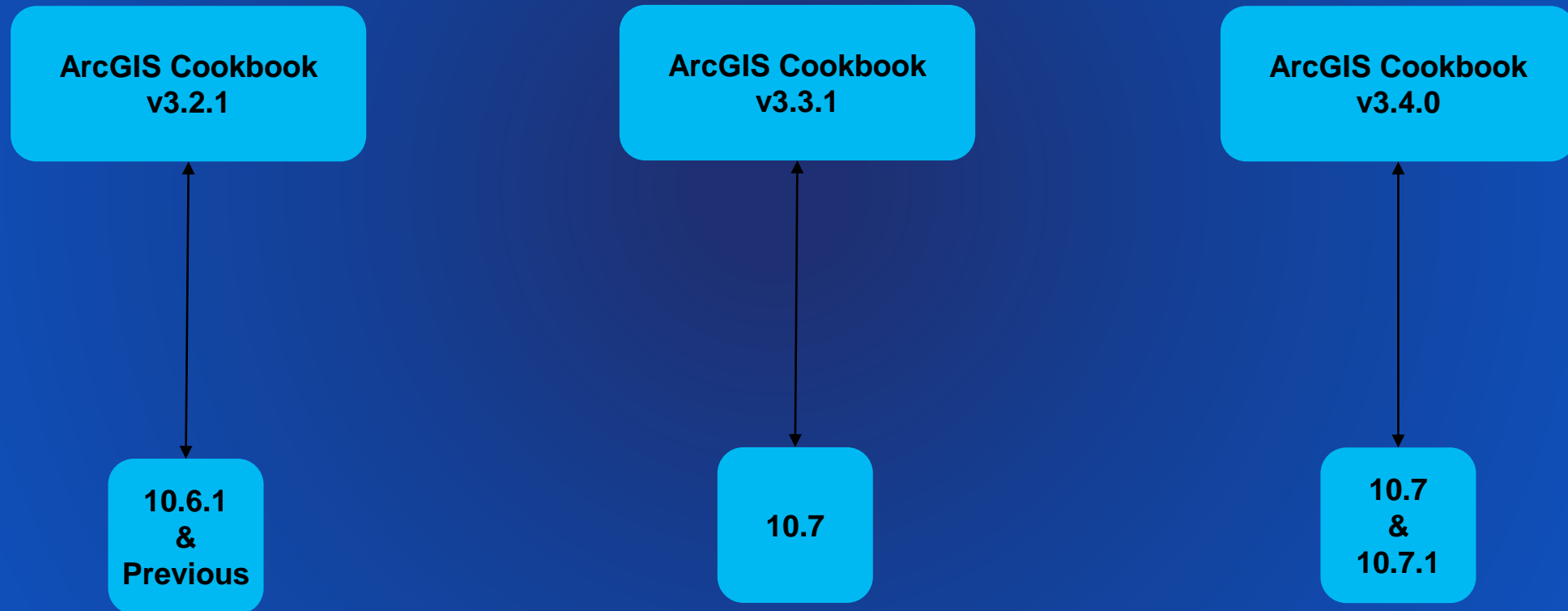
```
"version": "10.7",  
"repository": {  
  "archives": "\\\\esri.com\\Software\\Esri\\Released\\",  
},  
"server": {  
  "admin_username": "admin",  
  "admin_password": "admin",  
  "authorization_file": "\\\\metro\\ArcGIS_Automation\\",  
  "is_hosting": false
```

ArcGIS Software

- ArcGIS Enterprise
 - Portal for ArcGIS
 - ArcGIS Server
 - Enabled Roles: Hosting, Image Server, GeoAnalytics, GeoEvent Server
 - ArcGIS Data Store
 - Relational, Tile Cache, Spatiotemporal
 - ArcGIS Web Adaptor
- And other Esri Software:
 - ArcGIS Pro
 - ArcGIS Insight
 - ArcGIS Desktop
 - ArcGIS License Manager



ArcGIS Cookbook releases vs. ArcGIS Enterprise releases



Other Tricks & Tips

- **Disconnected Environment Considerations**
 - Make sure you have proper Esri license files staged for use
 - Software setups in a common location for access
 - Having Chef Client installation staged for installation
- Set password in an environment variable
- “-l debug” for debug
- Attributes value of True or False, no “”. e.g. “configure_autostart”: true
- Support security configuration for ArcGIS Server.




Why use Chef?

- Easy
- Flexible
- Customizable
- Repeatable
- Forward-thinking



Resources for Chef + ArcGIS Enterprise

esri.github.io/arccgis-cookbook




Welcome to Chef on ArcGIS Enterprise!

Here, you'll find all you need to automate your Web GIS installation and administration.

ArcGIS Enterprise 10.6.1 is available now!
[See what's new in 10.6.1](#)


Get started



What is ArcGIS Enterprise?

ArcGIS Enterprise delivers industry-leading mapping and data analysis to your physical or cloud infrastructure. The software platform can be deployed in a variety of configurations – whatever best suits your organization.

[Get acquainted with Enterprise](#)



What is Chef?

Chef is a software framework to automate installation and configuration of IT components. It uses a Chef server, which can be deployed open-source, as SaaS, or with a subscription to Chef Automate.

[Learn more about Chef](#)

Summary

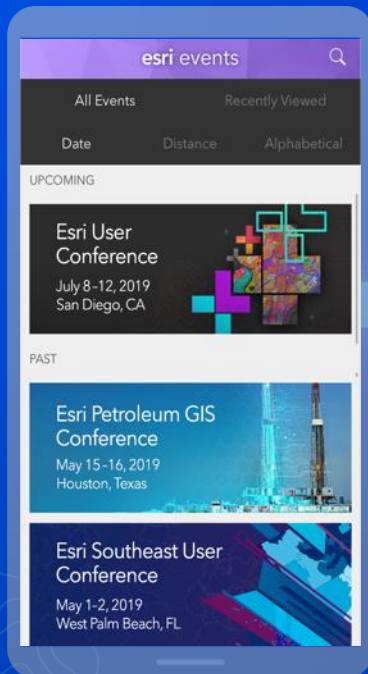


Best fit use case:

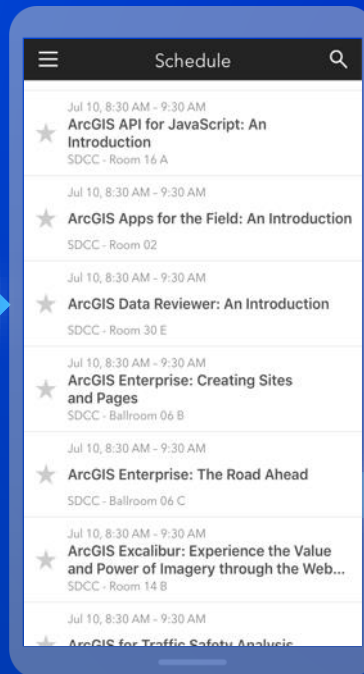
- **ArcGIS Enterprise Builder = Single machine deployment all-in-one, very limited options**
 - Base deployment only
- **AWS = Deploying in Amazon cloud**
 - Base deployment, server roles
- **Azure = Deploying in Azure cloud**
 - Base deployment, server roles
- **Powershell DSC = All deployments, on premises or cloud, Windows, repeat deployments**
 - -Base deployment, server roles, HA, DR
- **Chef = All deployments, on-premises or cloud, Windows or Linux, repeat deployments**
 - Base deployment, server roles, HA, DR

Please Share Your Feedback in the App

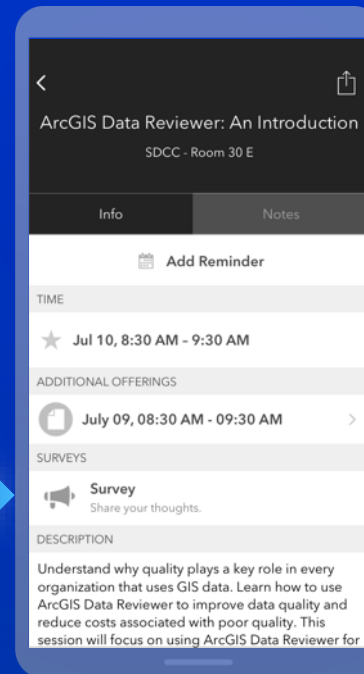
Download the Esri Events app and find your event



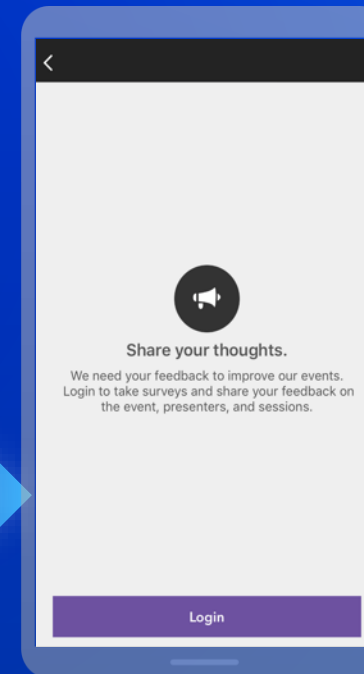
Select the session you attended



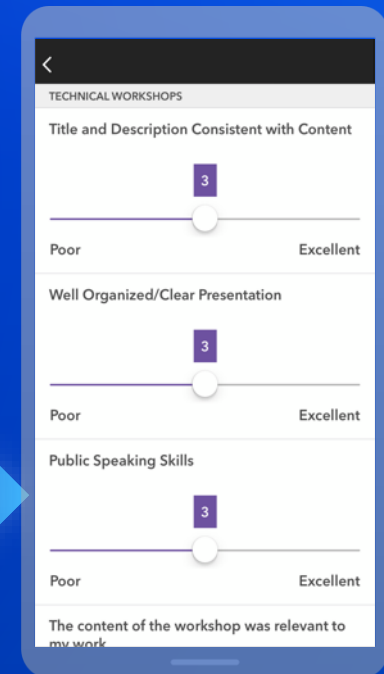
Scroll down to "Survey"



Log in to access the survey



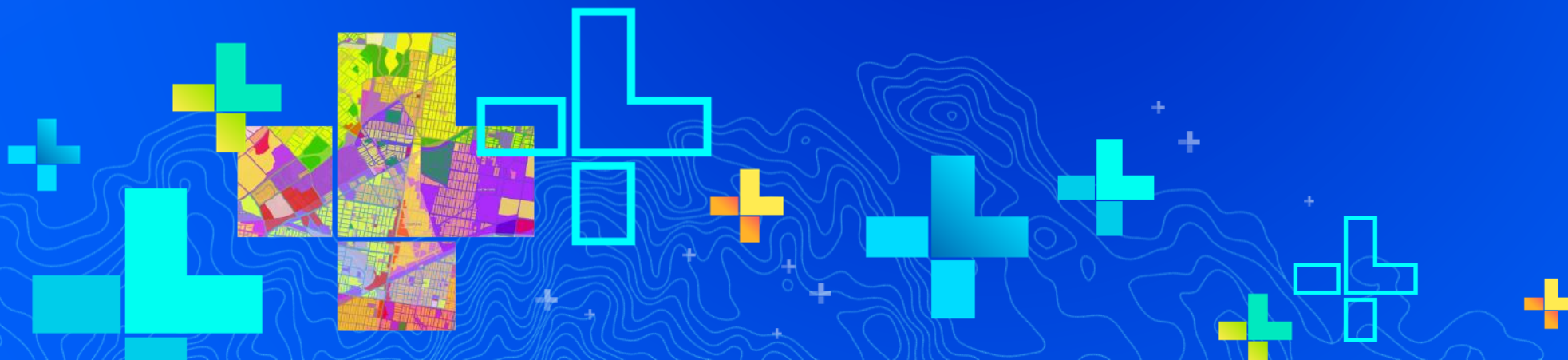
Complete the survey and select "Submit"





Presentation Title

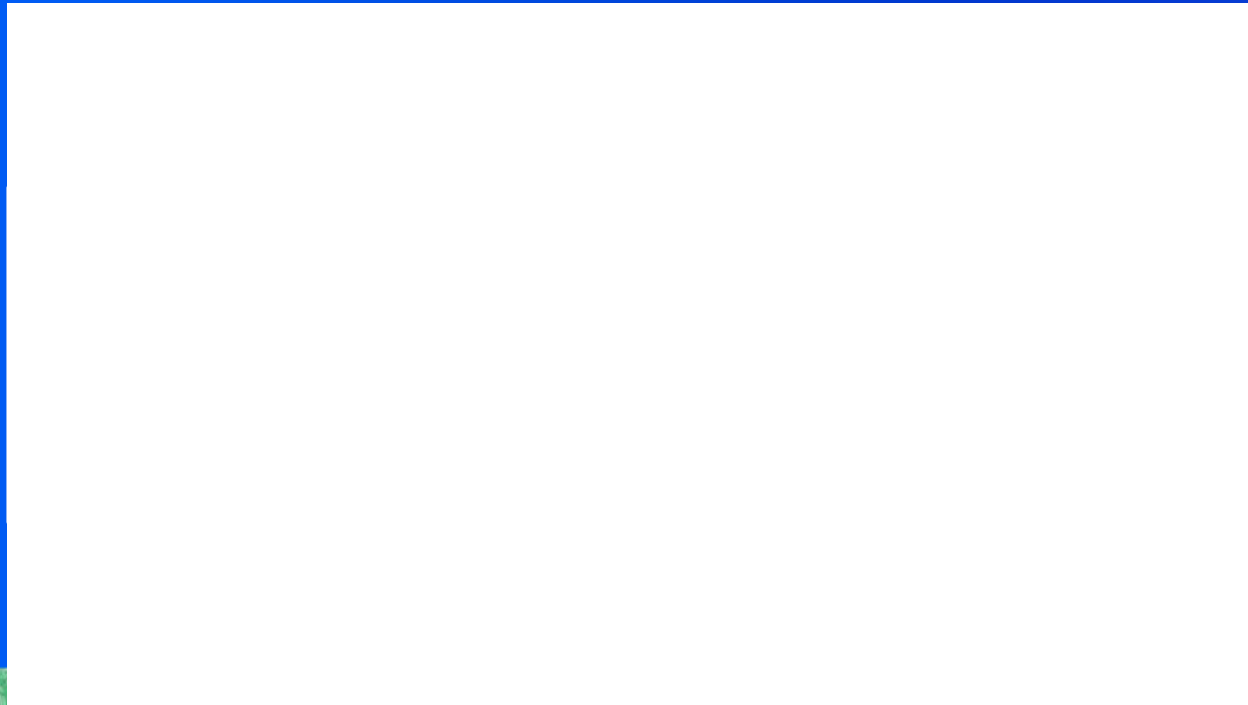
Presenter Names



SEE
WHAT
OTHERS
CAN'T

Section Header

Section Subhead



Demo Title

Presenter(s)

