

TRAINING GUIDE

ArcGIS Enterprise Administration

Part 3

┥╞╺┥╞╺┥╞╸┥╞

ArcGIS Enterprise Administration - Part 3

This session touches on key elements of Portal for ArcGIS setup, configuration and maintenance techniques.

Table of Contents

Portal for ArcGIS2
Portal for ArcGIS Design
Pre-Deployment Considerations
Portal for ArcGIS Installation3
Portal for ArcGIS Web Adaptor7
Federating Portal for ArcGIS
Add Data Store to ArcGIS Server 10
Federate Configuration Settings 14
Working with Portal
Publishing to Portal
Publish Features Services Using the Enterprise Geodatabase
Publish Map to Portal using ArcGIS Pro 20
Backup/Restore ArcGIS Enterprise Federated 29
Backup 29
Restore
Portal for ArcGIS Windows Authentication
Portal using ADFS 3.0

Portal for ArcGIS

Portal for ArcGIS Design

- ArcGIS Server 10.2.2 and higher are supported for Lucity; however some functionality won't be available prior to ArcGIS 10.4.1.
- Support Windows Server 2008 SP2 or higher
- For Virtualization, recommend Windows Server 2012 R2 or higher
- Machine name should not have an underscore
- Portal cannot be installed on a Domain Controller
- Server should have 4 cores minimum and 8GB of RAM. Depending on setup and the use of ArcGIS Data Store, IOPS could potentially be crucial in your design planning for Portal. Recommend go heavy on the IOPS for Portal (60% read, 40% write should be adequate). *Reference System Design and Tuning in Lucity Support for help with IOPS calculations for systems*.
- ArcGIS Enterprise Base Deployments should have more cores and RAM to compensate for the additional components.
- Ports 7080, 7443, 7005, 7099, 7199, and 7654 need to be open for communication with Portal on your firewall
- Domain needs to have the FQDN for the machine hosting Portal
- Signed SSL from a trusted certificate authority (CA) internal or commercial for Portal.
- It is recommended that all ArcGIS Enterprise web services use a signed SSL (Portal, ArcGIS Server, ArcGIS Web Adaptor).
- ArcGIS Web Adaptor is required for Portal
- For Federated Portal (ArcGIS Server connected to Portal as the security method), recommend using a second web adaptor for ArcGIS Server specifically.
- Space depends on use for Data Store. Portal and ArcGIS Event Server uses data store for content storage.
- Recommend not deploying Portal for ArcGIS on the same server as ArcGIS Server for more than 30 users.

Pre-Deployment Considerations

Portal for ArcGIS is an interface much like ArcGIS Online. Lucity needs Portal for ArcGIS if you are not using ArcGIS Online for Lucity WebMaps to function with all available WebMap tools. Portal for ArcGIS is generally used for internal use but can be used outside of your network as well.

- Signed SSL
- Federated versus Non-Federated
 - If federating, recommend creating web adaptors for both Portal and ArcGIS Server. In the installation process, we'll cover the registration of the web adaptor for Portal. This could reside in the DMZ (following the DMZ Web firewall rules and installing the web adaptor in the DMZ) or internally on a web server.
- Authentication Decision: ADFS integration, Standard Active Directory, Built-in Security, Gmail, Facebook, other SAML or OAuth Single Sign On Identity Providers. These are factors for authenticating your users. List of SSO Providers
- Internal Only or External (External will require network engineers to configure the firewall on your DMZ to the internal Portal server.)
- If using Portal for hosting content, relational data, tiled data, or spatiotemporal data, you will need to install ArcGIS Data Store.
- If active directory integration, portal needs e-mail addresses assigned to each user within Active Directory.

Portal for ArcGIS Installation

- 1. Click on the installation file of Portal for ArcGIS.
- 2. Once installation starts, click next, accept master agreement and continue.
- 3. Installation of portal should be in your installation directory. By default, it's on your C:\ drive.

🛃 Portal for ArcGIS 10.5.1 Setu	ιp	×
Destination Folder Select a folder where the app	lication will be installed.	
Install Portal for Arc C:\Program Files\Ar		Change
	< Back Next >	Cancel

4. Click next and change arcgisportal location of the directory storage for log, index and temporary files if necessary.

5. Click next and choose your user to run the portal windows service.

🔀 Portal for ArcGIS 10.5.1 Setu	p		×
Specify the Portal for ArcGI Specify the account that the Po		un as.	
Specify the account name an	d password:		
Portal for ArcGIS Account:	test\arcgis		-
Password:	•••••		7
Confirm Password:	•••••		
 I have a configuration file wit of this setup. 	h the account information ge	enerated by a previ	ous run
File name:			Browse
Help	< <u>B</u> ack	<u>N</u> ext >	Cancel

6. Click next and export your configuration file for use during upgrades and reinstallation if needed.

🙀 Portal for ArcGIS 10.5.1 Setup		\times
Export Portal for ArcGIS configue Export configuration file	uration file.	
	h installing multiple systems that use the same r account, and grant it the necessary privileges on the file.	
O Do not export configuration fi	ile.	
• Export configuration file. This	s file should be placed in a secure directory.	
File name: C:\Portal_co	onfig.xml Browse	
Help	< Back Next > Cancel	

- 7. Click next and install. At this point, the installation can take some time to finish.
- 8. After installation, you'll need to authorize your Portal for ArcGIS installation.

Software Authorization Wizard	×
Authorization Options You must authorize the software prior to use. Select from the options below.	
Authorization Options	
I have installed my software and need to authorize it.	
I have received an authorization file and am now ready to finish the authorization process.	
Browse	
< Back Next > Ca	ncel

- 9. Click Next, and go through the authorization process.
- 10. After authorization is finished, you will be routed to the URL of the self-signed certificate.

S ArcGIS Enterprise - Creater X
C A Not secure bttps://salestest.test.local:7443/arcgis/home/createadmin.html
Home Gallery Map Scene Groups
Create or Join a Portal
To get started, choose to either create a new portal or join this machine to an existing portal.



- 11. Click on Create New Portal
- 12. In the Create New Portal page, add your admin user account information. You must do this even if you are planning on creating an active directory connection or ADFS SSO. Click on Create.

ArcGIS Enterprise - Create ×
 A Not secure | bttps://salestest.test.local:7443/arcgis/home/createadmin.html

Home Gallery Map Scene Groups

Create a New Portal

Enter the username and password for the initial administrator account that will be created in your portal. Use this account to configure a Web Adaptor with your portal and then sign in to the portal for the first time.

First Name	Luke
Last Name	Savage
E-mail	Isavagelucity@gmail.com
Confirm E-mail	Isavagelucity@gmail.com
Username	Isavage_sales
Password	•••••
Confirm Password	•••••
Security Question	What city were you born in?
Answer	Saskatoon

Enter the content directory where your portal will store default and user-generated content. The content directory location must be accessible from each machine in your portal.

Content Directory



BACK CREATE

13. At this point, you will be directed to creating a web adaptor for Portal. Click on to continue. \times

Account Created

The initial administrator account has been created.

Your portal is currently being restarted and will require a couple of minutes to complete.

When you click OK, you will be directed to install the Web Adaptor and configure it with your portal using the initial administrator account.

After configuring the Web Adaptor, you can sign in to your portal using the initial administrator account.

WAITING...

Portal for ArcGIS Web Adaptor

ArcGIS Web Adaptor is a critical piece for Portal to function. In this example, we will be installing the Web Adaptor on the internal Portal for ArcGIS Server in IIS. There are several ways to deploy for external interfacing. For IWA, you can use <u>reverse proxy</u>, but for a more robust single sign on, you would use ADFS and WAP (Web Application Proxy) as your mechanism for authentication or any other SSO identity providers like BigIP or F5.

1. Copy the backend URL address from the installation of Portal. Usually, https://<FQDN of Server>:7443

ArcGIS Enterprise - Error ×		Θ	-		×
← → C ▲ Not secure https://salestest.test.local.7443 arcgis/home/error.html?c=WebAdaptorRequired				☆]:
Home Gallery Map Scene Groups 🚢 Sign Ir	١	Q,			
Web Adaptor Required	1				
In order to access your portal, you need to install the ArcGIS Web Adaptor and configure it for use with Portal for ArcGIS. To get started, see Ab	out the 4	ArcGIS Web	Adapto	r.	
Once you've installed the Web Adaptor and configured it for use, you'll access your portal using the Web Adaptor's URL. For example: https://sa	alestest.t	test.local/ar	rcgis/hor	ne.	

- 2. Start the ArcGIS Web Adaptor installation, click next and accept master agreement.
- 3. For Web Site (Port) dialog, make sure you select the web site using port 443. Again, a signed SSL is needed bound to IIS. Click next.

👷 ArcGIS Web Adaptor (IIS) 10.5.1 Setup	×
Select Web site for the Web Adaptor	
The Microsoft Internet Information Services (I) used as the location to install the selected feat	
Select a Web site (port) location where the f	features will be installed.
Web site (Port):	
Default Web Site (80) Default Web Site (443)	
Help	< Back Next > Cancel

4. Assign a web adaptor directory name. In this example, we'll use 'Portal'.

👹 ArcGIS Web Adaptor (IIS) 10.5.1 Setup	p		×
New Virtual Directory			
Specify the name of the ArcGIS Web Ac	daptor		
Name for the ArcGIS Web Adaptor			
portal			
This specifies the URL you will use to	access services. F	or example:	
https://salestest/arcgis/rest			
Help	< <u>B</u> ack	<u>N</u> ext >	Cancel

- 5. Click next and install
- 6. Once installed, you will see a browser with localhost in the URL. Change the localhost name to the FQDN URL of IIS. Choose Portal for ArcGIS and click next.

https://salestest.test.local 🗙		
$oldsymbol{\epsilon} ightarrow oldsymbol{C}$ $oldsymbol{\epsilon}$ Secure https://saleste	st.test.local portal/webadaptor	
Google Chrome isn't your default browser.	Set as default	
		Help About
	ArcGIS Web Adaptor	
	Which product do you want to configure with your Web Adaptor?	
	ArcGIS Server	
	Portal for ArcGIS	
	A server is not configured with your Web Adaptor. A portal is not configured with your Web Adaptor.	
		Next >

7. In the setup screen for the web adaptor, take the backend URL address you saved in step one and place it in Portal URL: input box. Add your Administrator Username and password and click Configure.

ArcGIS Web Adapto	r	
To configure the Web Adaptor,	specify the URL and an administrator acco	unt for your Portal.
Portal URL:	https://salestest.test.local:7443	2
	Example: https://machine.domain.com	:7443
Administrator Username:	lsavage_sales	2
Administrator Password:		2
• SALESTEST.TE Last updated on 8/2	9/2017 7:38:39 AM L to access your portal application:	Japtor:
Success		< Back Configure

8. You are ready to start configuring Portal for ArcGIS. Go to your web adaptor address for portal. Below is an example.



Federating Portal for ArcGIS

Federation means Portal for ArcGIS will control security and share content from ArcGIS Server sites. This is needed for SAML (Security Assertion Markup Language), hosting data like tiles and feature layers, or allowing users to perform Spatial Analysis within the ArcGIS Map viewer in Portal. In this example, we will be using simple built-in security for Portal. A non-federated portal site will require you to add Feature Services as layers within the content of portal manually for the services to be visible when adding layers from your organization. This process is much like what you would perform in ArcGIS Online with external facing feature services from an on-premise ArcGIS Server.

Add Data Store to ArcGIS Server

Used for Data Storage for hosting relational data, tile caching, and spatiotemporal big data. When calculating storage space, understand the uses will help determine the amount of data storage needed. You can split data stores between several servers for different purposes. Recommend spatiotemporal big data to be its own server. This is used for ArcGIS GeoEvent Server. This does not currently connect to any enterprise or file geodatabases. This product is its own container.

1. Start installation of ArcGIS Data Store, next and agree to the master agreement. In the next dialog, select features. By default, it selects everything. Click next.

🙀 ArcGIS Data Store 10.5.1 Setup					×
Select Features Please select which features you w	ould like to ins	tall.			
Click on an icon in the list below to ch	ange how a fe	ature is ins	talled.		
Data Store		ArcGIS D services available	Description ata Store supports and the configurat ArcGIS organizatio arcgis organizatio arcgis organizatio	ion of highly ons.	
Install to: C:\Program Files\ArcGIS\DataStore\				Change	
Help Space	<	Back	Next >	Cancel	

2. In the specify ArcGIS data store account, this is a windows service that will run the data store. Click next when complete.

🛃 ArcGIS	Data Store 10.5.1 Setup		×
Specify	ArcGIS Data Store Accoun	t	
Specif	y the account that the ArcGIS	Data Store processes will run as.	
۲	Specify the account name an	d password:	
	ArcGIS Data Store Account:	test\arcgis	
	Password:	•••••	
	Confirm password:	••••••	
0	I have a configuration file wit previous run of this setup. Filename:	h the account information generated by	a Browse
	<u>H</u> elp	< <u>B</u> ack <u>N</u> ext >	Cancel

3. In the export account configuration file dialog, export your configuration to a known location for upgrades and reinstalls.

👘 ArcGIS Data Store	10.5.1 Setup	Х
Export account co		
	configuration file helps you with installing multiple systems. The file is er account, and grant it the necessary privileges on the system.	
○ Do not export	configuration file.	
Export configu	ration file. This file should be placed in a properly secured directory.	
Filename:	C:\datastore_config.xml Browse	
Help	< <u>B</u> ack <u>N</u> ext > Cancel	

- 4. Click install when ready.
- 5. After installation, a browser will load with the ArcGIS Data Store configuration site. Point to the ArcGIS Server backend URL for port 6443. *Note: ArcGIS Server should be set to both http and https in the site configuration. This will enable https connections to ArcGIS Server.* Give the ArcGIS Server username and password credentials. Click next

ArcGIS Data Sto	ore		
	Data Store Cor	figuration Wizard	Help
		Store is not configured with an ArcGIS Server site. To conf tore, specify the URL and an administrator account for yo	
	GIS Server URL:	https://salestest.test.local:6443 Example: https://gisserver.domain.com:6443	
	Username:	AGS	
	Password:	••• 0	
			Next

6. In the specify content directory dialog, point to a location in which the data store will store its files. Note: this could be very large depending if you use tile caches as a hosted service. For big data, point to a file server with scalability for added file storage. Click next.

Specify Content Directory	Help
When you create an ArcGIS Data Store, a content direct logs, backup files and more.	ory is used to store data,
Content Directory: C:\arcgisdatastore	Back Next

7. In the ArcGIS Data Store Type dialog, choose the types of storage you would like to use. Since we're not configuring Spatiotemporal in this example, we'll only check the relational and tile cache. Click next.



8. In Configuration Summary, double check your input values and click finish when ready.

Configuration Summary		<u>Help</u>
Your ArcGIS Data Store configurati	on is ready to be completed.	
GIS Server URL:	https://salestest.test.local:6443	
Content Directory:	C:\arcgisdatastore	
High Availability Role (Relational):	Primary	
High Availability Role (Tile Cache):	Primary	
Click Finish to create the ArcGIS D Server site.	ata Store and configure it with your ArcGIS	
	Back	nish
	are just in case you need to troublesheet	Delau ia

9. Document the backend URL of data store just in case you need to troubleshoot. Below is an example.



10. After configuration is complete, you will need to complete the federation task within Portal.

Configuration Status	<u>Help</u>	
The following component(s) of ArcGIS Data Store are configured with ArcGIS Server site(s).		
 Relational Tile Cache		
To complete the configuration process, you must now federate the ArcGIS Se site with your Portal and set it as the hosting server.	rver	
Please sign in to your Portal as an administrator and navigate to My Organiza > Edit Settings > Servers. Use the Add Server option to federate the site. The set the site as the hosting server and click Save.		

Configure Additional Data Stores

Federate Configuration Settings

11. Sign into Portal URL and click on sign in. Add Credentials and click sign in in the next screen.

rpnse ×				10.0.13.10			
Secure https://salestest.	test.local/portal/home/						
1	Home Gallery Map	Scene Groups			-	🛓 Sign In	Q,
		ArcGI	6 Enterp	orise	2. Ch	State -	
sign In		things.	ate this home page w	in. You can easily change this page with th a collection of featured items such a			
3			C C			10	
	First time si	gning in :	5	ign in			
	CREATE AN A	CCOUNT		Sign in to ArcG		esr	·i
				Sign in to ArcG	5 Enterprise	631	
				Username			
				Isavage_sales			
				Password			
				🔲 Keep me signed in			
				SIGN IN			
				Forgot password?			

12. Go to Edit Settings

Home Gallery Map Scene Groups My Content My Organization

ArcGIS	6 Enterprise	
Hembers	ADD MEMBERS	🔇 VIEW STATUS
Viewing: Current Membe	rs 👻	
▲ Name		Username
Luke Savage		lsavage_sales

13. In the list of items, go to Servers and click on Add Server.

ArcGIS	S Enterprise
SAVE CANCEL	
General	Servers
Home Page	You can add ArcGIS Server sites to your portal to achieve a single-sign-on e
Gallery	a portal is called a federated server.
Мар	Federated Servers
Item Details	Add one or more servers to your portal.
Groups	VALIDATE SERVERS ADD SERVER
Utility Services	Servers
ArcGIS Online	
Servers	
Roles	
Collaborations	
Security	

14. Enter the ArcGIS Server Web Adaptor URL and the backend ArcGIS Server URL with the username and password for the ArcGIS Server Site. Click on Add, click OK on the notice and click on Add again. It's a failsafe process.

Add ArcGIS Server

Enter the URLs for accessing and administering your ArcGIS Server site. Also enter credentials for an administrator of the ArcGIS Server site.

Services URL:	https://salestest.test.local/map Example: https://webadaptorhost.domain.com/webadaptorname
Administration URL:	https://salestest.test.local:6443/arcgis Example: https://gisserver.domain.com:6443/arcgis
Username:	AGS
Password:	♦ ♦ ♦
	ADD CANCEL

15. Configure your hosting server. This setting within the server tab allows you to configure the hosting server to publish services directly to portal. We will be discussing later in workshop the difference between portal hosted services versus feature services that serve data from the enterprise geodatabase.

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.	
	No hosting server	
	No hosting server	
	salestest.test.local/map	

16. Click on save at the top of the browser window.

17. After completing these steps, your ArcGIS Enterprise environment is now federated. Here is an example result of ArcGIS Server security when federating. Notice that authentication stores are now funneled through Portal for ArcGIS.

ArcGIS Serv	er Manager	Services	Site	Security
Settings Users	Roles			
ArcGIS Server Securi	ty			
ArcGIS Server security de	etermines who can admir	nister the GIS server, who can publish	to the GIS server, an	d who can use the
		ayed below. To change the accounts re		Server and set their
Users and Roles links abo	ove. To set access rules f	for a service, use the Services > Mana	ige Services page.	
Configuration Setting	15	1		
User Store:		Portal for ArcGIS		
Role Store:		Portal for ArcGIS		
Authentication Tier:		Portal for ArcGIS		
Authentication Mode:		Portal for ArcGIS		
		Forcarior Arcors		
Portal URL:	https://sales	test.test.local/portal/home		
Portal URL:	https://sales			
Portal URL: Primary Site Administ				
Primary Site Administ		test.test.local/portal/home		
Primary Site Administ		test.test.local/portal/home		
Primary Site Administ Username:	trator Account	test.test.local/portal/home		

Working with Portal

Publishing to Portal

We will tackle both scenarios publishing to Portal. One of those scenarios will demonstrate how to publish feature services using the enterprise geodatabase. The second scenario will demonstrate how to publish hosted services to Portal.

Publish Features Services Using the Enterprise Geodatabase

1. In ArcCatalog, create a connection to your ArcGIS Server Web Adaptor using the portal user and password. Remember, Portal is now controlling authentication to ArcGIS Server. This example will spawn the traditional ArcSOC.exe pool (ArcObjects Server executable).

ArcGIS Server Admini	strator Connection Properties	×
General		
Server URL:	https://salestest.test.local/map/admin ArcGIS Server: http://gisserver.domain.com:6080/arcgis	
Server Type:	ArcGIS Server \sim	
Staging Folder:	C:\Users\LSAVAG~1.TES\AppData\Local\Temp\arc5	
	Use ArcGIS Desktop's staging folder	
Authentication		
User Name:	Isavage_sales	
Password:	•••••	
	Save Username/Password	
About ArcGIS Serve	r connections	
	OK Cancel App	oly

- 2. Go to your MXD document that points each layer to the enterprise geodatabase.
- 3. Publish service using the new connection you created for ArcGIS Server

Connection: map on sales	stest.test.local (admin) Service Name: SewerTest 📃 🖳 Import 🖌 Analyze 鐞 Preview 🚚 Publish 🔿
General Parameters	Capabilities Choose the capabilities you would like enabled for this service:
Capabilities	
Mapping	Mapping (always enabled) Schematics
Feature Access	
Pooling	Network Analysis
Processes	
Caching	Feature Access
Item Description	

4. Sign in to Portal and Edit data

	Sanitary Pipe Invent	ory	
	US Structure	0219005	
	DS Structure	0219004	
1 15	Line Type	Gravity Line	-
Dragen Creek III	Flow Type	Sanitary	-
÷	Dia/Height (in)	26	
The A	Material	VCP	•
E I	Length (ft)	403.1	
T ///	Record US Invert	854.53	
	Record DS Invert	853.44	
\mathbf{I} ($\mathbf{\Gamma}$)	Slope %		
	Pipe Shape		-
	Cleaning Area		

5. Your edits will now show up in the enterprise geodatabase.



Publish Map to Portal using ArcGIS Pro

- 1. Connect ArcGIS Pro to your new Portal site
- 2. Open ArcGIS Pro
- 3. Click on the lower left-hand corner dialog in ArcGIS Pro 'About ArcGIS Pro'

ArcGIS	Pro		
Create a new Select a template t	<mark>/ project</mark> to use to create a new	project	
Blank	Global_Scene.aptx	Local_Scene.aptx	Map.aptx
🧀 Select ano	ther project template		
🧁 Open an e	xisting project		
and was	and the second second		
() About Arco	GIS Pro		

4. On the left-hand TOC menu, click on Portals and click on the Add Portal button. Use the Web Adaptor name of your portal site. Click ok when done.

Note: You can change your licensing options for Pro in the same TOC menu

$\left(\leftarrow \right)$		ArcGIS Pro
New	Portals	
Open		
Save		
Save As		
Portals		
Licensing		Add Portal ×
Options		Enter the URL of your portal
Python		https://salestest.test.local/portal
Add-In Manager		Examples: Portal for ArcGIS - https://webadaptorhost.domain.com/webadaptorname ArcGIS Online - https://www.arcgis.com or https://yourorg.maps.arcgis.com
Help	Add Portal	OK Cancel
About	Learn re about managing portal connections	
Exit	1	

5. You should see a green checkbox next to your Portal site if successful.

$\overline{\mathbf{e}}$	
New	Portals
Open	https://salestest.test.local/portal/
Save	Available : Not signed in
Save As	
Portola	

6. Click on the back button when finished in the top left of the ArcGIS Pro window, and sign into your Portal at the top right corner.



7. Logging in information will change in case you decide to use ADFS or Active Directory for your Portal.



8. In this exercise, we'll create a Blank project and publish a hosted service to Portal.

ArcGIS Pro	
Create a new project Select a template to use to create a new project	
Blank Global_Scene.aptx Local_Scene.aptx Ma	Create a New Project ×
🧁 Select another project template	Name Publish to Portal
Open an existing project	C <users\isavage.test\documents\arcgis\projects ✓ Create a new folder for this project</users\isavage.test\documents\arcgis\projects
	OK Cancel

9. When ArcGIS Pro project starts, right click on the database to add database connection to your enterprise geodatabase.

				Arc	GIS Pro - Publish to Portal - Catalog
Project Home Insert	Analysis View	Imagery	Share	Lucity Tools	
문 New Layout * 🤷 Toolbo New 🖑 Import Map 🎿 Add Fo Map * 😁 Connections * 🗐 Task * Project		-			
Contents • I × Project Toolboxes Databases Styles Folders	Costalog × Coord Training Action Act	ooxes		Rigi	nt _' Click
 Locators Portal My Content Groups All Portal Living Atlas 	Data	bases s		ld <u>D</u> atabase w File Geodatabase w Database Connection	This item ca
★ Favorites	Fold			Select	New Database Connection Connect to a database such as an enterprise geodatabase. Add the connection to the project. A new database connection file is created in the project's home folder and is referenced by the project. Press F1 for more help.

10. Add a database connection, change the database connection to sql server, instance name, Authentication type, and database connection info. Click ok when finished.

Database Connection			Х
Database Platform: Change		SQL Server	*
Instance: SQL Instance		salestest	
Authentication Type:		Operating system authentication	*
User Name	:		
Password:			
Save Us	er/Password		
Database:		LucityGIS	*
Database		ОК	Cancel

11. You are now connected to the database. On the right side of ArcGIS Pro, go to the databases expandable item, expand and select the new database connection. '<instance>.sde.



12. Start a new Map by selecting the New Map at the top left corner of ArcGIS Pro



13. Once map loads, you will see a basemap in the map window. Go to the map menu at the top and select Add Data. Point to your database connection and click on the link to see the data layers.

Project Map Inser	t Analysis View Edit	Imagery Share Lucity	Tools
Paste Copy	Bookmarks Basemap Add	Select Select By Select By	Attributes Clear Infographics Measure Loc
Clipboard Navig	ite 🖬 Layer	Selection	G Inquiry
Contents 👻 🖣	X 🔂 Catalog 🔣 Map X	-	×
Y Search P			X
1 1 1	€ ⊖ ⑦ 🔣 « LucityGIS.DBO.Sa	nitarySewer 🔻 🖸 .	Search Project P
	 Project Databases 	LucityGIS.DBO.ssIPTFacility	
Drawing Order	Folders	LucityGIS.DBO.ssIPTMonitor	ingPoint
🔺 🔣 Map	🔺 🙆 Portal	LucityGIS.DBO.ssNode	
🖌 Topographic	A My Content	🗄 LucityGIS.DBO.ssPipe	
	Groups	😟 LucityGIS.DBO.ssPumpStatio	Hold Ctrl and
	All Portal	🖶 LucityGIS.DBO.ssService	left mouse
	Living Atlas	LucityGIS.DBO.ssServiceCon	nection click for
	🔺 🛄 Computer	😳 LucityGIS.DBO.ssStructure	multiple
	Desktop	LucityGIS.DBO.ssSystemValve	and the second s
	Name	ucityGIS.DBO.ssPipe	Default 🔹
			OK Cancel

14. Click on Web Layer and publish web layer if you want to create a feature service either hosted or federated with ArcGIS Server. In this example, we are creating a hosted feature service where the data resides in ArcGIS Data Store.

Note: Publishing hosted feature services into Portal using ArcGIS Data Store creates javaw.exe multi-threaded services. This has better performance and is more scalable than that ArcSOC.exe services for ArcGIS Server.



15. Change data connection to copy all data and select feature to add a feature service. You can use this after publishing to create WebMaps.

Share As Web Layer	?	*	џ	×
Sharing Map As A Web Layer				
General Configuration Content				
Name:				1
Мар				
Data 1			_	
Reference registered data				
 Copy all data 				
Layer Type 🕕				
✓ Feature				
Vector Tile				
Map Image				
Item Description				
Summary:				1
ACT 2017				
Tags:				
ACT 2017 ×				
ACTZON				
Sharing Options				1
My Content				
✓ ArcGIS Enterprise				
✓ Everyone				
Groups 🔻				
				÷
Finish Sharing				
✓Analyze				

16. Analyze and publish once errors are fixed.

Note: You need to remove the basemap to publish your data as a feature service.

17. Once Publishing is complete, go to your Portal, my content and click on your newly created feature layer. Notice that your feature layer is distinguished as a hosted feature layer rather than an ArcGIS Server feature service referencing data from the geodatabase.

+ Ad	d Item 👻 🖾 Create 👻 🐁 Share 🛛 X Delete 🖴	Move -	🕺 Change Owner		
	▲ Title		Туре	Modified	Shared
	🧕 Edit		Feature Layer	Aug 30, 2017	Not Shared
	🛐 Edit	-	Map Image Layer	Aug 30, 2017	Not Shared
	Electric	T	Map Image Layer	Aug 30, 2017	Not Shared
	😫 Facilities	T	Map Image Layer	Aug 30, 2017	Not Shared
	🦲 GeocodingTools		Geoprocessing Service	Aug 29, 2017	Organization
	🗂 GeoLocate	T	Locator	Aug 30, 2017	Not Shared
	🦲 Geometry	T	Geometry Service	Aug 29, 2017	Not Shared
	👰 GISTasksEdit	\forall	Feature Layer	Aug 30, 2017	Not Shared
	🙇 GISTasksEdit		Map Image Layer	Aug 30, 2017	Not Shared
	Imagery	T	Imagery Layer	Aug 30, 2017	Not Shared
	😫 LandBase		Map Image Layer	Aug 30, 2017	Not Shared
	🧕 Map		Feature Layer (hosted)	Sep 1, 2017	Everyone
_	D				

18. In the information window of the newly created feature layer, you can see the feature service URL at the bottom of the dialog.

Overview Data Visua	lization		
times.com/	ACT 2017	Open in M	ap Viewer 🗸 🗸 🗸
	by Isavage_sales Last Modified: September 1, 2017	Open i	n Scene Viewer
	🧟 Feature Layer	Open in	ArcGIS Desktop
Description		Ν	/letadata
	thorage is not available		n gernet maart b
Sanitary Structure Inve 한 Open In ▼ 한 Service U		URL	🖻 View
Sanitary Sewer Service		st/services/Hosted	/Map/FeatureServer

19. To create an Esri WebMap at the same time creating a feature service, go to the Web Map icon at the top of ArcGIS Pro and select it. On the right, you will have several choices for deployment under 'Select a Configuration'. Reference registered data exploratory will allow you to create it using a registered enterprise geodatabase or use copy all data to create a hosted service with hosted data in the ArcGIS Data Store.



Note: Using the Esri WebMap feature and to publish, make sure you have your layers set to WGS 1984 Web Mercator.

Backup/Restore ArcGIS Enterprise Federated

Backup

- 1. Go to c:\program files\arcgis\portal\tools\webgisdr or the directory in which you install portal and copy the webgisdr.properties in a folder you can run PowerShell or command line. In this example, I copied the file to c:\temp.
- 2. In this utility, you can create a full and incremental backup of the ArcGIS Enterprise system (ArcGIS Server, DataStore and Portal).
- 3. Modify the file and save. Full detail of the configuration is in the link below. In this example, we'll summarize the changes.

http://server.arcgis.com/en/portal/latest/administer/windows/create-web-gis-backup.htm

<pre># Specify a shared location to store the Web GIS backup file. This is where the backups for # individual components will be saved to before being moved to the storage that you specify # for the BACKUP_STORE_PROVIDER property # The following accounts must have read and write permissions on the shared location: # 1) The domain account used to run the web GIS software. # 2) The account to run this tool. SHARED_LOCATION=\\\\test-m\\dbbackup\\temp</pre>
Specify a storage provider: FileSystem, or AmazonS3. FileSystem = Using a File Server BACKUP_STORE_PROVIDER = FileSystem
<pre># Specify the Web GIS backup location if you've set the BACKUP_STORE_PROVIDER to FileSystem. BACKUP_LOCATION = \\\\test-m\\dbbackup\\portalsales Actual Backup Location Actual Backup Location</pre>
<pre># Specify Amazon S3 Storage properties if you've set the BACKUP_STORE_PROVIDER to AmazonS3. S3_ACCESSKEY = S3_BECRETKEY = S3_ENCRYPTED = S3_BUCKET = # IAMRole or accessKey S3_CREDENTIALTYPE = </pre>
<pre>S3_ERGION = # Specify a backup name used for the Web GIS restore only. # Example: # April-20-2017-5-04-14-PM-PDT-FULL # or</pre>
<pre># webgisdr-backup/10-5-1/full/&pril-20-2017-5-04-14-PM-PDT-FULL S3_BACKUP_NAME = # Specify the URL to your portal.</pre>
Example: # <u>https://webadaptor.domain.com/context</u> # or
<pre># https://portalmachine.domain.com:7443/arcgis PORTAL_ADMIN_URL = https://salestest.test.local:7443/arcgis URL</pre>
<pre># Provide credentials for the portal administrator. # Initially, leave PORTAL_ADMIN_PASSWORD_ENCRYPTED set to false. # When you run the tool the first time, the password will be # encrypted and PORTAL_ADMIN_PASSWORD_ENCRYPTED will change to true. PORTAL_ADMIN_USERNAME = lsavage_sales PORTAL_ADMIN_PASSWORD = LucityRocks1 PORTAL_ADMIN_PASSWORD = LucityRocks1 PORTAL_ADMIN_PASSWORD ENCRYPTED = false</pre>
Specify whether to include scene tile caches. INCLUDE_SCENE_TILE_CACHES = false # Specify the UK of backward full on insurance and set to true automatically.
Specify the Web GIS backup mode: full or incremental. BACKUP_RESTORE_MODE = full full or incremental
<pre># If your portal content directory is in Amazon S3, specify Amazon S3 Storage properties for portal backups. PORTAL BACKUP S3 BUCKET =</pre>

PORTAL_BACKUP_S3_REGION =

4. Example of the encryption that occurs after the first run.

```
# Provide credentials for the portal administrator.
# Initially, leave PORTAL_ADMIN_PASSWORD_ENCRYPTED set to false.
# When you run the tool the first time, the password will be
# encrypted and PORTAL_ADMIN_PASSWORD_ENCRYPTED will change to true.
PORTAL_ADMIN_USERNAME = lsavage_sales
PORTAL_ADMIN_PASSWORD = iEUMjOQ/mdOSTGunxRFCag==
PORTAL_ADMIN_PASSWORD ENCRYPTED = true
```

5. Go to PowerShell or command line and run the utility from the portal webgisdr location. If using PowerShell, make sure to preface .\ before webgisdir. Use the file you modified as the export file. Below is an example

6. Like the previous chapters, you can setup windows scheduled task to accomplish full and incremental backups on a regular basis. For incremental, copy the file you created and create a new one with the restore mode set to incremental.

Restore

- 1. Recommend you create a test system that you can test the restore process at least every release. In a VM Environment, backup VM before upgrade and backup VM after upgrade. Afterwards, test the backup and restore functionality.
- 2. Go to PowerShell or command line and run the utility from the portal webgisdr location. Below is an example.

r> .\webgisdr --import --file C:\temp\salesportal.properties_

3. More detailed restore information in the below link. We will not be covering the backup and restore functionality of data store but the link for this is below as well.

http://server.arcgis.com/en/portal/latest/administer/windows/restore-web-gis.htm Backup DataStore

Portal for ArcGIS Windows Authentication

- 1. Go to Portal Admin. Usually <u>https://<FQDN>/<WebAdaptorforPortal>/portaladmin</u>
- 2. Go to Security/Config
- 3. Click on Update Identity Store

Portal Administrator Directory

```
<u>Home</u> > <u>Security</u> > <u>Config</u> > <u>Update Identity Store</u>
```

Update Identity Store



4. There are many uses to create an identity store to enable windows authentication. The example above lists one way to add a single user account as the Portal admin. You can also use an Active Directory Group if you wish. More information about this is in the link below.

http://server.arcgis.com/en/portal/latest/administer/windows/use-integrated-windowsauthentication-with-your-portal.htm

- 5. Click on Update Configuration
- 6. Now click on test identity store configuration. Go to the test identity store link.
- 7. Click on Test Configuration. You should see connection successful.

Portal Administrator Directory

<u>Home</u> > <u>Security</u> > <u>Config</u> > <u>Test Identity Store</u>

Test Identity Store

User store configuration (in JSON format) *	<pre>{ "type": "WINDOWS", "properties": { "userPassword": "a6iDj40V2M77Guqd0ieJtQ==", "caseSensitive": "false", "userEmailAttribute": "mail", "user": "test\\administrator", "userFullnameAttribute": "cn", "isPasswordEncrypted": "true" } }</pre>
Group store configuration (in JSON format) *	{ "type": "BUILTIN", "properties": {"isPasswordEncrypted": "true"} }
Format Test Configuration	HTML T

- Connection successful!
- 8. You'll be able to login now using your '<domain>\<Active Directory User> account.

	Authentication Required
Google Chrome isn't your default browser.	https://portal.test.local requires a username and password.
	User Name: test\administrator
	Password: *******

9. Login and you should see your admin page.



Portal using ADFS 3.0

1. Go to Portal/Organization/Security tab and click on Get Service Provider.

Home Gallery Map So	cene Groups Conter	nt Organization	_		III Luke ⊽	Q
🖉 Lucity IN	ЛР					
SAVE CANCEL						
General	Security					
Home Page	Configure the security	settings for your organization.				
Gallery	Policies					
Мар		☑ Allow access to the organi	zation through HTTPS only.			
Item Details		Allow anonymous access t	o your organization's website. (lucityimp.m	iaps.arcgis.com)		
Groups		What does this mean?				
Utility Services		✓ Allow only standard SQL q	ueries.			
Roles		Allow members to edit bio	graphical information and who can see the	ir profile.		
Marketplace	Sharing and Searchin	g				
Credits		 Members can share conter 	t publicly.			
Security		 Members can search for co 	ntent outside the organization.			
en Data		 Show social media links or 	item and group pages.			
	Password Policy					
		passwords members may pro	icy for all members with ArcGIS accounts in vide. In addition, you may set the duration	of passwords as wel	establish rules I as set how m	that determine the format of any previously entered
•	1 2 2 1	passwords to retain to which	to compare for redundancy when a new p	assword is supplied.		
		UPDATE PASSWORD PO	ICY			
	Enterprise Logins					
		You can set up your organizat use with your existing on-pre	tion so that your users will be able to sign mises systems.	in to ArcGIS using the	same usernan	ne and password that they
			chnology known as identity federation the	at the section will help	you set up th	rough two actions.
		SET IDENTITY PROVIDER	GET SERVICE PROVIDER			

2. This will download a metadata file you will use in the ADFS Management Console. Copy the metadata.xml to your ADFS server.

3. Go to your ADFS server and configure your Claims for Portal by opening AD FS Management Console.



4. Right clicking on Relying Party Trust. Click on Add Relying Party Trust.



5. This will be a claims aware trust. Click on start at the bottom



6. In the Select Data Source, click on the radio button for 'Import data about the relying part from a file'. Browse to the metadata.xml file you copied to your ADFS server. Click next when complete.

Select Data Source		
Steps Welcome Select Data Source Choose Access Control Policy Ready to Add Trust Finish	Select an option that this wizard will use to obtain data about this relying party: Import data about the relying party published online or on a local network Use this option to import the necessary data and certificates from a relying party organization that publis its federation metadata online or on a local network. Federation metadata address (host name or URL): Example: fs.contoso.com or https://www.contoso.com/app 	hes
	 Import data about the relying party from a file Use this option to import the necessary data and certificates from a relying party organization that has exported its federation metadata to a file. Ensure that this file is from a trusted source. This wizard will r validate the source of the file. Federation metadata file location: C_\temp\metadata.xml Browse. Enter data about the relying party manually Use this option to manually input the necessary data about this relying party organization. 	
	< Previous Next > Cancel	

7. In the Choose Access Control Policy, Give the ADFS claims a name for Portal. Add notes if you have more than one connection to Portal internal and external. Click next when complete.

翰 Add Relying Party Trust Wizard

35

 \times



Specify Display Name

Steps	Enter the display name and any optional notes for this relying party.					
Welcome	Display name:					
Select Data Source	Portal ADFS					
🥥 Specify Display Name	Notes:					
 Choose Access Control Policy 	External Portal ADFS integration					
Ready to Add Trust						
 Finish 						
	< Previous Next > Cancel					

8. For Access Control, you can choose everyone or limit groups. In this example, we'll choose the defaults. Click next when complete.

🧌 Add Relying Party Trust Wizard

Choose Access Control Policy

Choose an access control policy:		
Name	Description	^
Permit evervone	Grant access to everyone.	
Permit everyone and require MFA	•	.r
Permit everyone and require MFA for specific group Permit everyone and require MFA from extranet access Permit everyone and require MFA from unauthenticated devices Permit everyone and require MFA, allow automatic device registr Permit everyone for intranet access Permit specific group	Grant access to the intranet users an Grant access to everyone and requi Grant access to everyone and requi Grant access to the intranet users.	r ir
	Name Permit everyone Permit everyone and require MFA Permit everyone and require MFA for specific group Permit everyone and require MFA from extranet access Permit everyone and require MFA from unauthenticated devices Permit everyone and require MFA, allow automatic device registr Permit everyone for intranet access	Name Description Permit everyone Grant access to everyone. Permit everyone and require MFA Grant access to everyone and require MFA for specific group Permit everyone and require MFA for specific group Grant access to everyone and require MFA for specific group Permit everyone and require MFA for specific group Grant access to everyone and require MFA form extranet access Permit everyone and require MFA form unauthenticated devices Grant access to everyone and require devices Permit everyone and require MFA, allow automatic device registr Grant access to everyone and require devices Permit everyone for intranet access Grant access to users on and require devices Permit everyone for intranet access Grant access to users of one or more Permit specific group Grant access to users of one or more Permit specific group Brant access to users of one or more

9. Click Next on the Ready to Add Trust.

翰 Add Relying Party Trust Wizard

Ready to Add Trust



10. Click Next, accept defaults and Close when finished. This will prompt another dialog to appear.



11. In the 'Edit Claim Issuance Policy for Portal ADFS, click on the 'Add Rule' button.

Edi	Edit Claim Issuance Policy for Portal ADFS X				
lss	uance T	Transform Rules			
	The follo	owing transform rules specify the claims that will be sent to the relying party.			
	Order	Rule Name Issued Claims			
0		and the second			
i ha					
		•			
	Add R	Rule Edit Rule Remove Rule			
		OK Cancel A	.pply		

12. In this example, we'll accept the defaults for 'Send LDAP Attributes as Claims'

翰 Add Transform Claim Rule Wizard \times Select Rule Template Steps Select the template for the claim rule that you want to create from the following list. The description provides details about each claim rule template. 🥥 Choose Rule Type Configure Claim Rule Claim rule template: \sim Send LDAP Attributes as Claims Claim rule template description: Using the Send LDAP Attribute as Claims rule template you can select attributes from an LDAP attribute store such as Active Directory to send as claims to the relying party. Multiple attributes may be sent as multiple claims from a single rule using this rule type. For example, you can use this rule template to create a rule that will extract attribute values for authenticated users from the displayName and telephoneNumber Active Directory attributes and then send those values as two different outgoing claims. This rule may also be used to send all of the user's group memberships. If you want to only send individual group memberships, use the Send Group Membership as a Claim rule template. and the second < Previous Next> Cancel

13. In the 'Configure Role' dialog, change the Attribute store to Active Directory in the drop down and give the Claim rule name a name. Also, go to the Mapping of LDAP attributes to outgoing claim types and add items like 'User-Principle-Name' connected to Name ID and Display-Name connected to Given Name. Below is an example. You could add more if needed. After all information has been entered, click on finish and ok.

Configure Rule					
Steps	You can configure this rule to send the values of LDAP attributes as claims. Select an attribute store from which				
Choose Rule Type	to extract LDAP attributes. Specify how the attributes will map to the outgoing claim types that will be issued from the rule.				
Configure Claim Rule	Claim rule name:				
	PortalIMP				
	Rule template: Send LDAP Attributes as Claims				
	Active Directory				
	Mapping of LDAP attributes to outgoing claim types:				
	LDAP Attribute (Select or type to add more) Outgoing Claim Type (Select or type to add more)				
	User-Principal-Name V Name ID V				
1	🕨 Display-Name 🗸 Given Name 🗸				
These are the	•				
authentication					
attributes for					
single sign on					
	< Previous Finish Cancel				
	< Flevious Finish Cancel				

14. You should now see the new relying party trusts entered.



15. Go to the ADFS metadata URL and download your ADFS metadata. Take the FederationMetdata.xml and copy it to a known location.

https://FQDN or the ADFS Server>/FederationMetadata/2007-06/FederationMetadata.xml Example: <u>https://adfs.test.local/FederationMetadata/2007-06/FederationMetadata.xml</u>

翰 Add Transform Claim Rule Wizard

 \times

16. Login to your Portal. Go to Organization/edit settings/Security tab and click on Set Identity Provider.

🖉 Lucity IN	MP
SAVE CANCEL	
General	Security
Home Page	
Gallery	Configure the security settings for your organization.
Мар	Policies
Item Details	Allow access to the organization through HTTPS only.
	Allow anonymous access to your organization's website. (lucityimp.maps.arcgis.com) What does this mean?
Groups	✓ Allow only standard SQL queries.
Utility Services	Allow members to edit biographical information and who can see their profile.
Roles	Allow members to edic biographical mornadon and who can see their prome.
Marketplace	Sharing and Searching
Credits	Members can share content publicly.
Security	Members can search for content outside the organization.
pen Data	Show social media links on item and group pages.
	Password Policy
	You can set the password policy for all members with ArcGIS accounts in your organization to establish rules that determine the format of passwords members may provide. In addition, you may set the duration of passwords as well as set how many previously entered
	passwords interface in a politice, in adulation, you may see the duration of passwords as were as see now many providely encered passwords to retain to which to compare for redundancy when a new password is supplied.
	UPDATE PASSWORD POLICY
	Enterprise Logins
	You can set up your organization so that your users will be able to sign in to ArcGIS using the same username and password that they
	use with your existing on-pre-uses systems. The key to this is through two actions as identity federation that this section will help you set up through two actions.
	SET IDENTITY PROVIDER GET SERVICE PROVIDER

17. In the Set Identity Provider dialog, you can change the behavior of signing up users. In this example, we'll automatically join users to a Level 2 license with the role user. Also, click on the 'A File' radio button and choose file 'FederationMetadata.xml' you downloaded from the URL above. Afterwards, click on set identity provider.

Set Identity Provider

Specify the properties to establish your organization's Enterprise Identity Provider.

	SET IDENTITY PROVIDER CANCEL			
	Show advanced settings			
File: Choose File FederationMetadata.xml				
	Metadata for the Enterprise Identity Provider will be supplied using:			
	SPECIFY GROUPS			
	You have not specified any groups to which to assign users.			
	Role they will be assigned: User 👻			
	Default License Level:			
1	Your users will be able to join: Automatically O Upon invitation from an administrator			
	Name: Lucity Imp Team			

Click on the 'save' button at the top of the Portal page to save changes.
 Home Gallery Map Scene Groups Content Organization



19. At the top of the portal dialog, click on invite members.



21. Type in the e-mail and click next. Click next.

Note: need to have e-mail attached to your Active Directory user accounts for this to work.

CANCEL

Step 2 of 4

Invite members to join using their enterprise logins

You will be providing an email address for each member. You will also assign each member a level type and a role that does not have administrative privileges. Members will have to respond to an email invitation sent to them by ArcGIS Online to join the organization by creating a new account using their enterprise credentials.

One at a time	From a file	
Email: Level:		lsavagelucity@gmail.com *
Role:		User 👻
Message Member Will Receive:		Luke Savage has invited you to join an ArcGIS Online Organization, Lucity IMP. Use your Lucity Imp Team username and password when you sign in.
		BACK INVITE ANOTHER NEXT

22. You can send invitation without specifying group but this dialog allows you to do this within one operation. Click on send invitation.

CANCEL			
Step 3 of 4			
Verify that these are the members you want to invite. If you want to specify one or more groups to which to add the otherwise, click Send Invitations.	se member logins, c	lick Specify Gro	oups below;
▲ Email	Level	Role	Edit
lsavagelucity@gmail.com	2	User	<u>Edit</u> <u>Remove</u>
	BACK SPECIF	Y GROUPS	SEND INVITATIONS
	BACK SPECIF	Y GROUPS	SENDINVITATIONS

23. User can go to their e-mail account and accept the invite. Once invite is accepted, you can go to Portal and use your Windows Account information.

🚳 ArcGIS - Sign In 🛛 🗙 🔪		et al	10.0.13.7	- 8 ×
← → C 🔒 Secure https://lucityimp.ma	ps.arcgis.com/home/signin.html			
	Home Gallery Map Scene Groups			
	Sign In	67. (A		
			Sign in to Lucity IMP	esri
		-	USING YOUR LUCITY IMP TEAD	M ACCOUNT
			USING YOUR ARCGIS AC	COUNT

24. This will reroute you to your ADFS SSO. You can set your browser to autosign with your AD account info.

IMP AI	DFS			
.				
Sign in with <u>y</u>	your organiz	ational acc	ount	
Sign in with y test\lsavage		ational acc	count	

25. Once signed in, it will reroute you to the Portal organization. If you don't clear browser cache, it will remember your login information.

Home Gallery Map Scene Groups Content Organization	📃 Luke 🔻 🔍
lucity	V

Sign in