Agenda

• Welcome & Introduction to ArcGIS Enterprise

• Portal for ArcGIS
  - Basic Configuration
  - Advanced Configuration
  - Deploying Apps
  - SSL Certificates & Trusts
  - Distributed Collaborations
  - Web Tier (IWA & PKI) Authentication
  - What’s New at 10.5/10.5.1
Web GIS Deployment Patterns

Begin with ArcGIS Online & SaaS

ArcGIS Enterprise
Customer Managed Infrastructure
- On-premises
- Private Cloud
- Public Cloud (AWS, Azure, others)
- Managed Services

Basemaps & Content Services

ArcGIS Online

Begin with ArcGIS Enterprise & Software
Basic Configuration of Portal for ArcGIS
Getting your Portal ready for use

- General – logo, name, description
- Home Page – banner, featured content
- Gallery
- Map – basemaps, default extent, web app templates
- Utility Services
- Servers
- Security
Disconnected Environments
Not everyone has internet access

• How many of you run disconnected today?

• Many customers run ArcGIS with no access to internet resources
  - No access to ArcGIS Online Basemaps
  - No access to World Geocoding Service
  - No access to other resources such as core utility services (printing, geometry), GeoEnrichment Services or ArcGIS API for JavaScript
  - Disconnected environments create unique challenges that need to be addressed in order to take full advantage of an on-premises ArcGIS Enterprise deployment
Basemaps in Portal for ArcGIS
Where will your basemaps come from?

- ArcGIS Online
- Data Appliance for ArcGIS offers ArcGIS Online basemap capabilities
- Custom basemaps

Enable Custom basemaps
1. Add a cached map service to Portal map viewer
2. Save Web Map as a new item and share with custom group and Everyone
3. Specify custom group for basemap gallery, and select a default basemap
Enabling On-Premises Utility Services in Portal

- **Printing** – enable the Print Service of an ArcGIS Server and use the Export Web Map Task.
- **Geometry** – utilize the Geometry Services of an on-premises ArcGIS Server
- **Geocoding**
  - World Geocoding Service On-Premises
  - Esri Streetmap Premium Geocode Services published on-premises
  - Custom Geocoding Service
- **Routing**
  - Utilize Esri Streetmap Premium Routing Services published on-premises
  - Custom Routing Service
- **Analysis Utility Services**, e.g. Hydrology, Elevation, and Network
Configuring Portal for ArcGIS 10.5.x

New Considerations

- ArcGIS Online Configuration

ArcGIS Online

Configure your portal to use utility services and content from ArcGIS Online.

Configure Utility Services

To configure your portal to use utility services from ArcGIS Online:
1. Check the box corresponding to the ArcGIS Online utility services you wish to configure with your portal.
2. Enter the credentials for an ArcGIS Online organizational account that your portal will use to access those services.
3. Click Configure.

Note: Clicking configure will update your portal utility service settings and save the configuration changes. Items corresponding to the selected ArcGIS Online utility services will be created in your My Content page and shared with all users in your organization. Using these services in the portal will consume credits from the specified ArcGIS Online account.

To remove an existing utility service and its corresponding items, uncheck the utility service checkbox and click Configure.

- Elevation
- Geocode
- GeoEnrichment
- Hydrology
- Network

CONFIGURE
Configuring Portal for ArcGIS 10.5.x

New Considerations

- ArcGIS Online Configuration
- Living Atlas
Configuring Portal for ArcGIS 10.5.x

New Considerations

- ArcGIS Online Configuration
- Living Atlas
- Distributed Collaborations

Collaborations

Collaborations are used to share content between organizations. When you create a collaboration, your organization becomes the host of the collaboration. You may also be invited as a guest to a collaboration hosted by another organization.

Collaborations are trusted relationships between organizations where terms and conditions may apply in addition to the Access and Use Constraints on shared items.

Collaborations

CREATE COLLABORATION  ACCEPT INVITATION

<table>
<thead>
<tr>
<th>Collaboration Name</th>
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No collaborations found.
Configuring Portal for ArcGIS 10.5.x

New Considerations

- ArcGIS Online Configuration
- Living Atlas
- Distributed Collaborations
- Raster Analytics
- GeoAnalytics
Configuring Portal for ArcGIS
Demonstration
Advanced Configuration
config.js
What is this?

• Located at `<Portal Install Directory>\customizations\10.5.1\webapps\arcgis\#home\js\arcgisonline`

• Detailed in the Portal Administrator Help

• Provides additional configuration of the Portal for ArcGIS UI

• You may want to do this if you're configuring a disconnected deployment or modifying the portal's behavior to match the requirements of your organization

• Warnings:
  - Use extreme caution when editing; always make a backup!
  - Not maintained during upgrade!
config.js
Additional Settings for Consideration

- Set the extentService
- Add Security Classification Banners
- Add Footer Links
- Restrict My Organization page to Portal Admins only
- Enable/Disable the ability for new users to “Create Account”
- Enable/Disable Show Social Media Links
- Enable/Disable Searching ArcGIS Online
Portal Admin Settings
Additional Settings for Consideration - continued

- Accessed via https://[FQDN]/[web adaptor]/portaladmin

- Additional configuration options:
  - Languages
  - Automatic Account Creation
  - Disable Signup

- Other administrative elements controlled here:
  - SSL Certificates
  - WebContextURL
  - Logs
  - Licenses
  - Backup and Recovery
Advanced Configuration Demonstration

```java
openDataConfigEnabled: false,
manageLicensesEnabled: true,
findFeaturesWebAppEnabled: true,
webAppBuilderEnabled: true,
webAppBuilderDownload: true,
sceneViewerEnabled: false,
restrictOrganizationPageToAdmin: false,
geoCodeAutoComplete: true, // enable suggest [true|false]
showCalculate: true, // show Calculate Field option for Feature layers in Table
multiFactorEnabled: false,
metadataEnabled: false, // hide/show any metadata related UI in the app
passwordPolicyEnabled: false, // hide/show password policy UI

// *** parameters for new account creation via ECAE REST API
// *** to turn on: comment out account_registration and uncomment accountApi, accountApiKey, and
accountApi: "https://metadata.cars-edi.com/api/accounts",
accountApikey: ",
accountAppkey: ",

*******************************************************************************
* Links
*******************************************************************************
bitlyUrl: null
bitlyUrlList: m
geochartmapServ
extentService: //explorerOnline
account_register
https://webapp
account_edit:
```

**Site Root - /**

**Version:** 10.5

**Resources:** System, Security, Federation, Logs, Machines

**Supported Operations:** Export Site, Import Site

**Supported Interfaces:** REST
Insights for ArcGIS
Analytic Projects – Workbook, Pages, and Cards

- App for exploratory analysis
- Combine Analysis and Visualization on cards
- Record, share and collaborate
Insights for ArcGIS Deployment

- Requires ArcGIS Enterprise 10.5
- Deployed on Portal and hosting server
- Configure Insights for ArcGIS license (.json) via Portal Admin
- Provision licenses to users via Portal for ArcGIS
ArcGIS Maps for Office

• Make dynamic maps of your spreadsheet data in Excel.

• Create color-coded, point, clustered point, or heat maps.

• Share your maps with Portal, or insert them into your PowerPoint
ArcGIS Maps for Office
Portal Resources for ArcGIS Maps for Office

• Install Portal Resources for ArcGIS Maps for Office
  - Host the JavaScript files required by ArcGIS Maps for Office on your network.

• Set your ArcGIS Maps for Office ArcGIS connection to point to your Portal for ArcGIS instance.
Operations Dashboard for ArcGIS

- App for monitoring, tracking, and reporting real-time data feeds and assets
- 2 platforms to work with the app:
  1. Windows Desktop app
  2. Web-browser based app (built on JavaScript)
     - Included with Portal for ArcGIS
Operations Dashboard for ArcGIS
Deployment Utility

- **Step 1 - Preparations**
  - Download and extract deployment utility from “My Esri”
  - Have security certificate ready
  - Know your Portal URL
  - Have write access to Portal’s `\apps\dashboard-win` folder

- **Step 2 – Run deployment utility**

- **Step 3 – Deploy to Portal**
  - Copy output folder from step 2 to Portal’s `\apps\dashboard-win` folder
  - Create an application item of Operations Dashboard
Authorizing ArcGIS Pro with Portal for ArcGIS
Similar to ArcGIS Online, but different…

• Similar end user and provisioning process to ArcGIS Online

• Different back end to enable that experience
Authorizing ArcGIS Pro with Portal for ArcGIS

Required Components

1. ArcGIS License Server Administrator
2. Named Users License File (.lic)
3. Portal Configuration File (.json)
4. Portal for ArcGIS
Deploying Insights for ArcGIS Demonstration
SSL Certificates & Trusts
Most organizations have strict Secure Socket Layer (SSL) requirements.

Portal for ArcGIS installs self-signed certificate for HTTPS port 7443.
  - Consuming services directly from self-signed certificates is highly discouraged.

To overcome this, install separate Web Adaptors for Portal and ArcGIS Server and SSL-enable your web server; users only communicate with Web Server over 443.

Web Server should be configured with a properly signed certificate, e.g. Verisign.
Setting up SSL Certificates and Trusts

Updating Server Certificates

- Some organizations mandate no HTTP(S) ports without using a properly signed server certificate.
- Users must update the self-signed certificates with CA signed certificates.
- Portal Administrator Directory provides tools to facilitate this process
  - Generate a new Certificate Signing Request, have CA sign, and import response
  - Import an existing server certificate and private key (e.g. PFX file)
    - Will need to import Trust chain if not part of the PFX
But, there is a whole lot more to this story…

Example SSL Touch Points in on-premises WebGIS

- **Client browser must trust CA chain**
- **Web Server must trust CA chain**
  - If :7443 is using CA signed
- **Portal must trust CA chain of ArcGIS Server**
- **Portal must trust CA chain of ArcGIS Server**
- **Portal must trust CA chain**
- **Print Task**
  - ArcGIS Server and OS must trust CA chain to Portal, Web Server, and External ArcGIS Servers
Setting up SSL Certificates and Trusts

Establishing Trust with other Servers

- For external trust, import Root and Intermediate certificates using Portal Administrator API
- Portal will automatically restart after this process
- Help topic: Configuring the portal to trust certificates from a certifying authority

Portals Administrator Directory

Home > Security > SSL Certificates

SSL Certificates

- digicert_intermediate
- portal
- samicert
- digicert_root
- idt_signed_digicert

Web Server SSL Certificate: portal
Web Server SSL Protocols: TLSv1.2, TLSv1.1, TLSv1

TLS_RSA_WITH_AES_128_CBC_SHA256,
TLS_RSA_WITH_AES_128_CBC_SHA

Supported Operations: Update, Generate, Import Root or Intermediate, Import Existing Server Certificate

Supported Interfaces: REST
Importing Certificates & Establishing Trust

Demonstration
Distributed Collaboration
Connect and integrate your GIS across a network of participants
About Distributed Collaboration
Capabilities

• Initially implemented within ArcGIS Enterprise 10.5 to support Enterprise to Enterprise collaborations
• 10.5.1 extended the capability to support ArcGIS Enterprise to ArcGIS Online
• Collaboration extends the group-based sharing model to allow for sharing of web maps, web scenes, feature layers, services and data items between trusted Enterprise organizations
• Web maps and web scenes are replicated (physical copy)
• At 10.5 layers (service URLs) are shared as references
• At 10.5.1 feature layers can be shared as copies between ArcGIS Enterprise and ArcGIS Online
• Replication can happen immediately or at a scheduled interval
Setting up a collaboration

Collaboration participants

• A collaboration consists of 2 or more organizations
• Host
  - Where you are going to initiate the collaboration
  - Only admins can create a collaboration
• Guest
  - One or more organizations can be invited to join the collaboration
  - Only admins can accept invitations to join a collaboration
• Invitations
  - Requests to join a collaboration
  - Physical files exchanged between Portal admins outside of portal UX
  - Used to exchange PKI-based collaboration keys
Establishing trust

- Organizations participating in collaboration must trust each other
- An admin on the Host creates a collaboration and invites Guests to participate
- Trust is established during the invitation acceptance process
- Once trust has been established content can be shared
Establishing trust – conceptual diagram

1. Host admin creates a collaboration and invites a Guest
2. An invitation is downloaded and sent to the Guest admin
3. Guest admin accepts the invitation, downloads and sends a response to the Host admin
4. Host admin accepts the response and trust is established between both organizations
Collaboration Workspaces

- Each collaboration will contain one or more collaboration workspaces
- A conceptual space where collaborated content is collected and shared with participating organizations
- Associated with an event, project or theme
- Each participating organization must link a group to the collaboration workspace in order to access collaborated content
Defining Access
Replication Direction

• Content is shared to or from a group linked to a collaboration workspace

• The Host admin defines how Guests can access each collaboration workspace
  - Send - content sent to the collaboration
  - Receive - content received from the collaboration
  - Send and receive – content sent to and received from the collaboration
Defining when content is synchronized

- Each Guest admin can configure when content is synchronized with the collaboration workspace
- Immediately
  - Default setting
  - When item is first shared with the group
  - When the shared item is updated
- At a scheduled interval
  - Every 24 hours by default
  - Minimum scheduled interval is hourly
Deployment Patterns

Host shares content to collaboration participants

Host

Guest

Guest

Guest

Group

Group

Group

Send

Receive

Collaboration
Deployment Patterns

Host receives content to collaboration participants
Collaborations

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No collaborations found.
Web Tier Authentication

IWA & PKI
1. Present Credentials

2. Authenticate against Identity Store

3. Pass user identity through to Portal

4. Get additional user information; Enterprise Groups
What’s New at 10.5/10.5.1?
Define Default Level & Role for New Named User Accounts

- New security option
Option to unfederate ArcGIS Server site using the portal app removed
Limiting unintended consequences

- Unfederating a site will break connections between items in the Portal and the ArcGIS Server site, and Portal members will no longer be able to use that content.
Enable Portal members to use new apps
Import entitlements and disseminate licenses

- AppStudio for ArcGIS
- Drone2Map for ArcGIS
- Esri Business Analyst web app
- Roadway Reporter for Esri Roads and Highways
- GeoPlanner for ArcGIS
- Insights for ArcGIS
Enable Portal members to use new apps
Apps exposed to user on Portal home page
Living Atlas of the World

Esri curated set of ready-to-use content
It includes both Esri published and user published content
Living Atlas
Content in Portal for ArcGIS

• Only Esri published content is delivered at 10.5

• Customers are able to easily populate their portal with ready-to-use maps and layers from Esri that support visualization and analysis.
Living Atlas
Types of Content

• Live Content: Hosted in ArcGIS Online
  - Items are installed in Portal but item URLs reference Online
  - Internet connection is required for access
  - Read-only content
  - Data types (web maps, apps, scenes and layers)

• Local Content: Hosted in Portal for ArcGIS
  - Boundary layers service definition files (by country)
    - Download from MyEsri or request DVD
    - Publish to Portal as hosted feature services
    - Run analysis in Insights for ArcGIS or Portal
Living Atlas
Live content that is hosted in ArcGIS Online

- Levels of content
  - Default content
    - No configuration is needed
    - All Portal users can access the content out of box
  - Subscriber content
    - Admin enables the content with a single Online subscription account
    - All Portal users can consume the content without credits
  - Premium content
    - Admin enables the content with a single Online subscription account
    - All Portal users can consume the content with small amount of credits
- Disconnected users: Admin disables the default content in Portal
ArcGIS API for Python
v1.2

- Python API to your Web GIS
  - automate their workflows and perform repetitive tasks using scripts in ArcGIS Online or Portal for ArcGIS
- Integrates with the Jupyter Notebook and SciPy
- Implemented using REST and local resources
Questions???

Thank you for your time!
Additional Sessions

• **ArcGIS Enterprise: Introducing Portal for ArcGIS**
  Wednesday, July 12
  10:15am - 11:30am
  SDCC - Room 09
  
  Friday, July 14
  9:00am - 10:15am
  SDCC - Room 04

• **ArcGIS Enterprise: Managing ArcGIS Server**
  Tuesday, July 11
  1:30pm - 2:45pm
  SDCC - Room 04
  
  Thursday, July 13
  3:15pm - 4:30pm
  Hilton - Sapphire Ballroom A

• **ArcGIS Enterprise: The Road Ahead**
  Wednesday, July 12
  3:15pm - 4:30pm
  SDCC - Ballroom 06 A
  
  Thursday, July 13
  1:30pm - 2:45pm
  SDCC - Ballroom 06 A
Additional Sessions

• **Web GIS: Architectural Patterns and Practices**
  Tuesday, July 11
  10:15am - 11:30am
  SDCC - Room 04
  
  Thursday, July 13
  10:15am - 11:30am
  Hilton - Sapphire Ballroom A

• **ArcGIS Enterprise: Architecting Your Deployment**
  Wednesday, July 12
  10:15am - 11:30am
  Hilton - Sapphire Ballroom A
  
  Wednesday, July 12
  1:30pm - 2:45pm
  SDCC - Room 09
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**Select the session you attended**

**Scroll down to find the survey**

**Complete Answers and Select “Submit”**