



esri

THE
SCIENCE
OF
WHERE

ArcGIS Enterprise Security: An Introduction

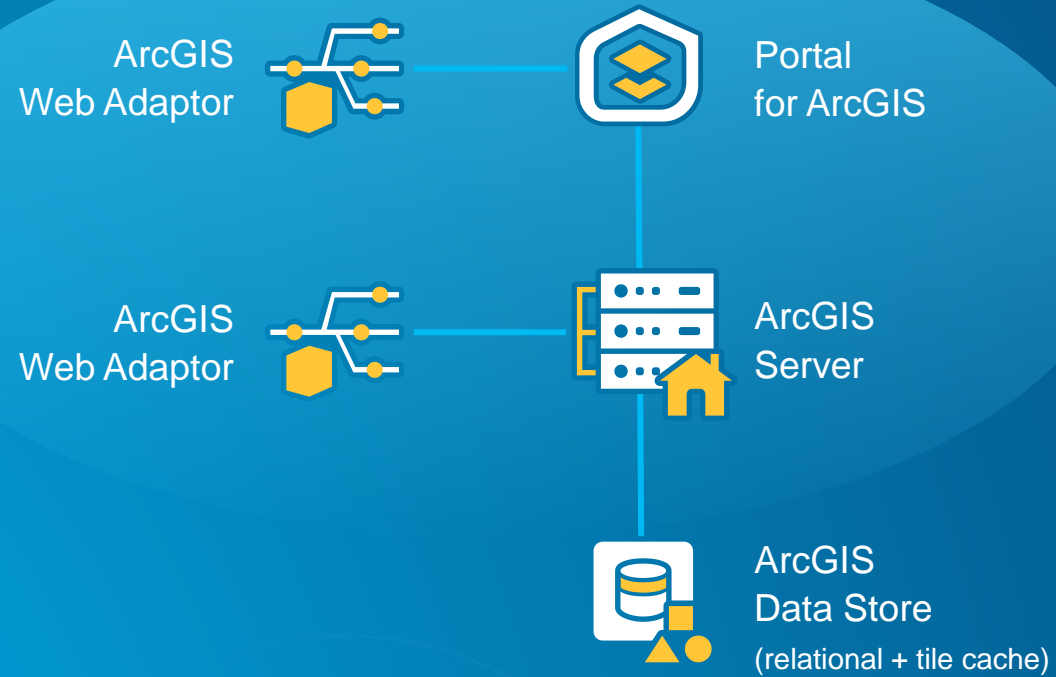
Gregory Ponto & Jeff Smith

Agenda

- **ArcGIS Enterprise Security Model**
- **Portal for ArcGIS**
- **Authentication**
- **Authorization**
- **Building the Enterprise**
- **Encryption**
- **Collaboration**
- **Summary**

ArcGIS Enterprise

Logical Architecture



Focus



ArcGIS Enterprise Security Model

Protect your assets
Control access and set permissions

ArcGIS Enterprise Security Model

token

ArcGIS Enterprise Security Model

The **token** is your access key into...  <https://github.com>  <https://drive.google.com>  <https://www.dropbox.com>  <https://onedrive.live.com>  <https://www.box.com>  <https://www.icloud.com>

ArcGIS Enterprise Security Model

The **token** is your access key into... ArcGIS Enterprise

ArcGIS Enterprise Security Model

OK. So what is a **token**?

ArcGIS Enterprise Security Model

aCegUO1QCUFHmZg2xcR4l0vy49POH5Qk6OvFw16

ArcGIS Enterprise Security Model

wRNA4XtMrqHFdf97H74ofngkrKufBacsL9ii-H1BY34

ArcGIS Enterprise Security Model

1AyZcQDO6xJjtWyycn206filCznGfxoNjIJEep8bQip0

ArcGIS Enterprise Security Model

Confused? That's ok.

ArcGIS Enterprise Security Model

a token, represents your login

(1AyZcQDO6xJjtWyycn206filCzn)

is a key that must be passed with any request for secured content

ArcGIS Enterprise Security Model

Good news...

...ArcGIS Enterprise handles this transparently for you

Quick Demo

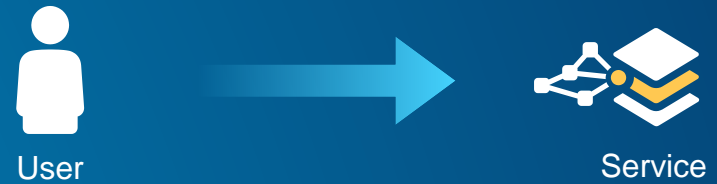
Token

ArcGIS Enterprise Security Model

Lets see how this works...

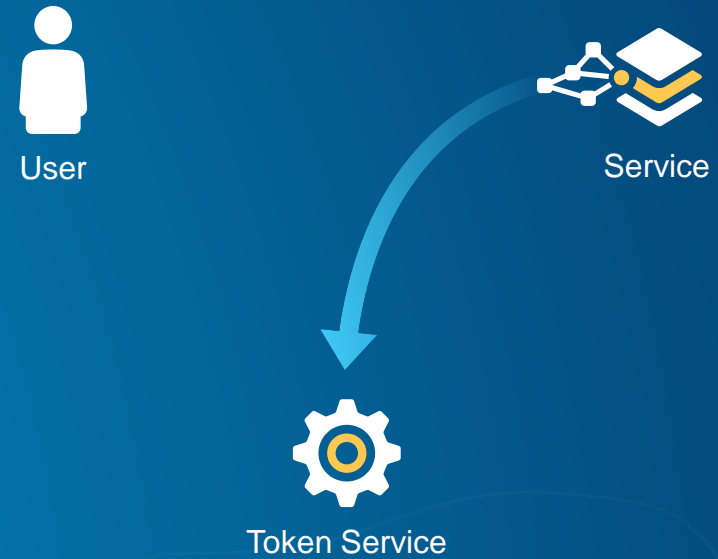
ArcGIS Enterprise Security Model

1. User requests access to Service



ArcGIS Enterprise Security Model

1. User requests access to Service
2. Service sends user to Token Service



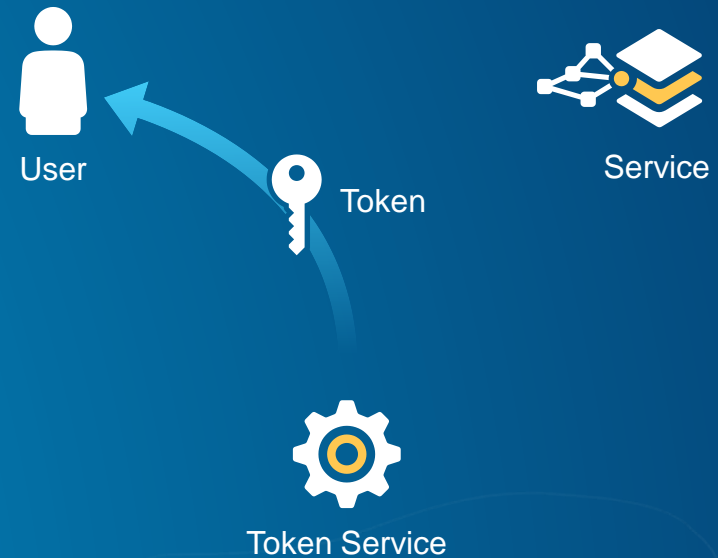
ArcGIS Enterprise Security Model

1. User requests access to Service
2. Service sends user to Token Service
3. User Authenticates to Token Service



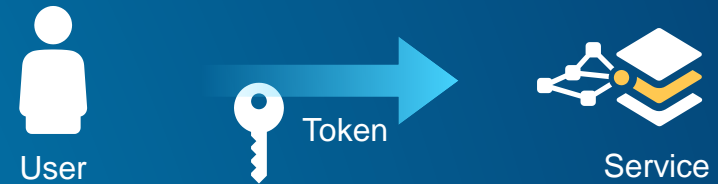
ArcGIS Enterprise Security Model

1. User requests access to Service
2. Service sends user to Token Service
3. User Authenticates to Token Service
4. Token Service issues Token to User



ArcGIS Enterprise Security Model

1. User requests access to Service
2. Service sends user to Token Service
3. User Authenticates to Token Service
4. Token Service issues Token to User
5. User passes Token to Service



ArcGIS Enterprise Security Model

1. User requests access to Service
2. Service sends user to Token Service
3. User Authenticates to Token Service
4. Token Service issues Token to User
5. User passes Token to Service
6. Service grants access



ArcGIS Enterprise Security Model

Now lets put this into context.

ArcGIS Enterprise Security Model



User

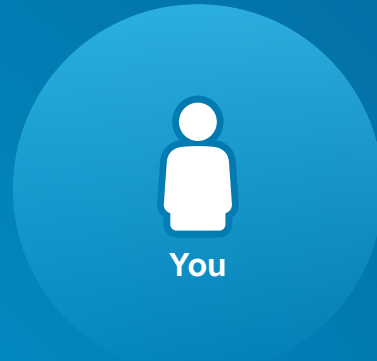


Service



Token Service

ArcGIS Enterprise Security Model



You



Service



Token Service

ArcGIS Enterprise Security Model



ArcGIS Enterprise Security Model



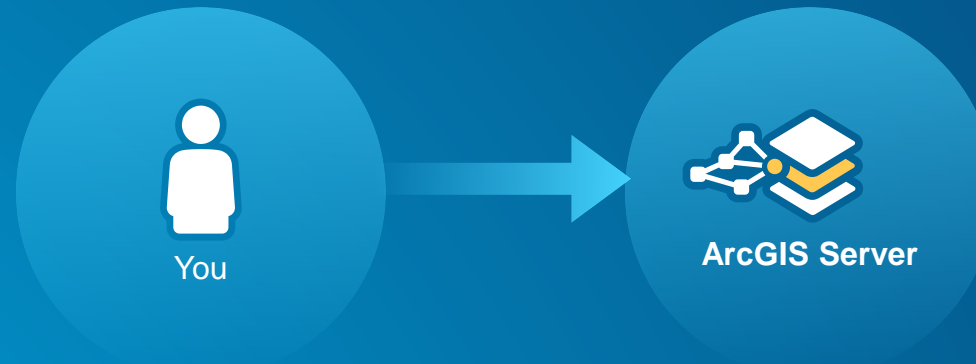
ArcGIS Enterprise Security Model



ArcGIS Enterprise Security Model

Another look, with context...

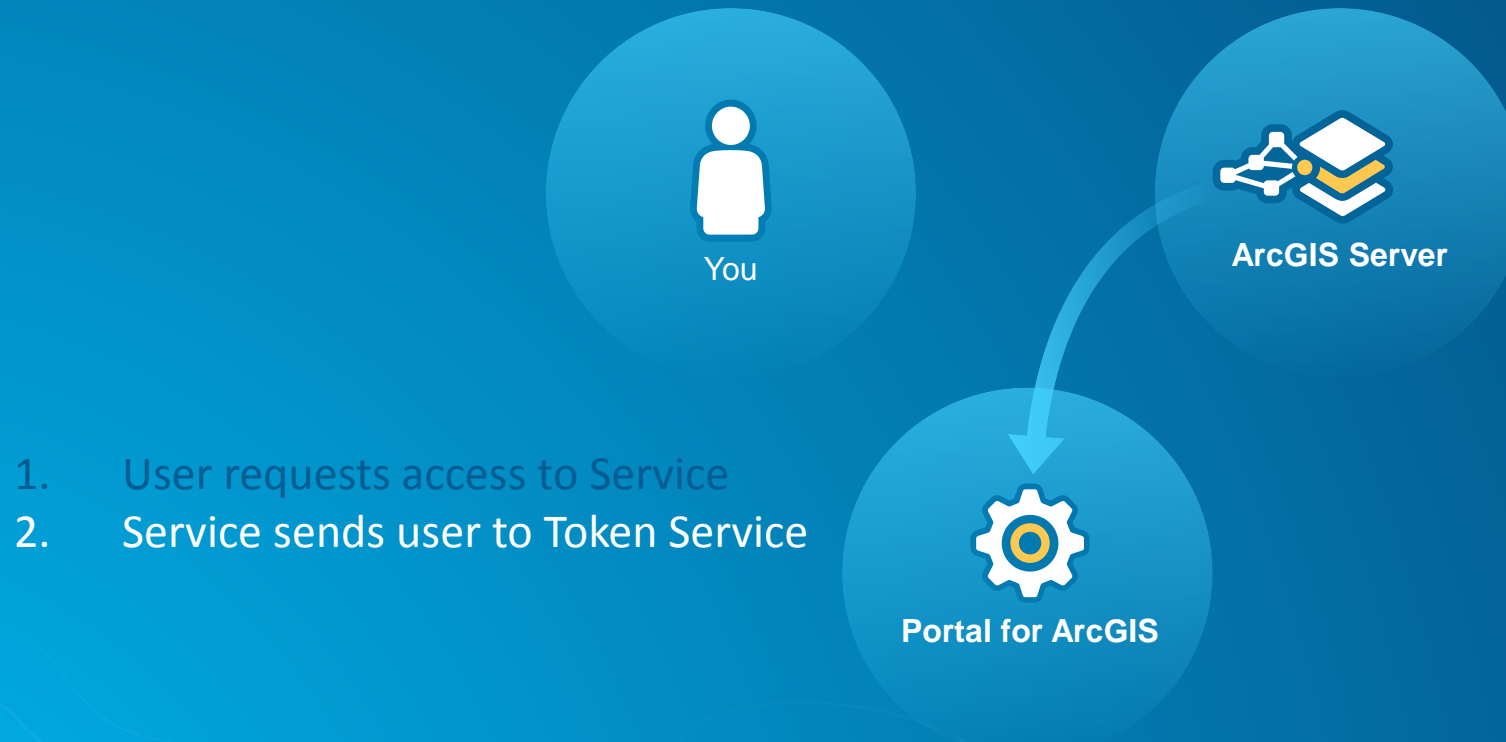
ArcGIS Enterprise Security Model



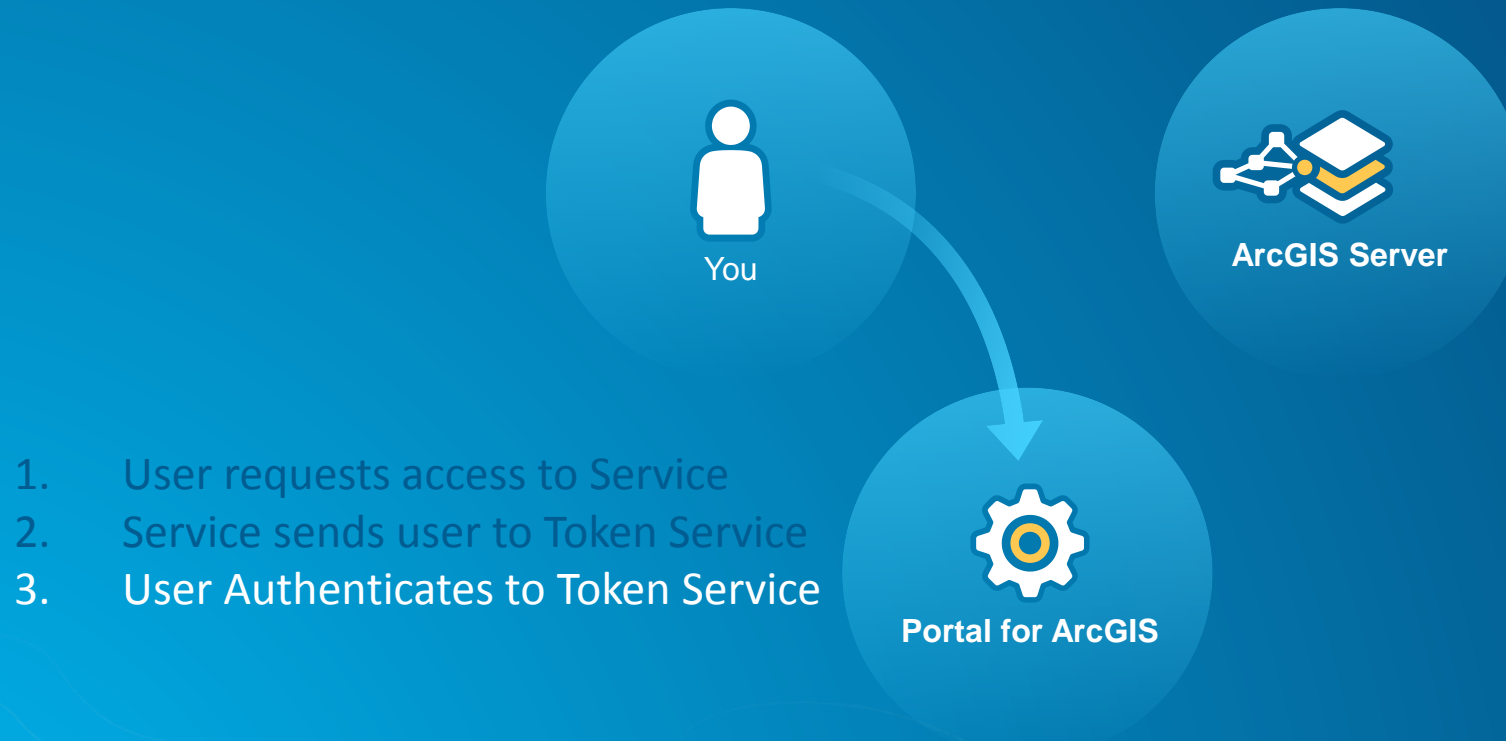
1. User requests access to Service



ArcGIS Enterprise Security Model



ArcGIS Enterprise Security Model



ArcGIS Enterprise Security Model



1. User requests access to Service
2. Service sends user to Token Service
3. User Authenticates to Token Service
4. Token Service issues Token to User

ArcGIS Enterprise Security Model



1. User requests access to Service
2. Service sends user to Token Service
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ArcGIS Enterprise Security Model



1. User requests access to Service
2. Service sends user to Token Service
3. User Authenticates to Token Service
4. Token Service issues Token to User
5. User passes Token to Service
6. Service grants access

ArcGIS Enterprise Security Model

But what about... ~~our~~^{my} ~~own~~^{life} story

ArcGIS Enterprise Security Model

All authentication methods ultimately deliver a
token...

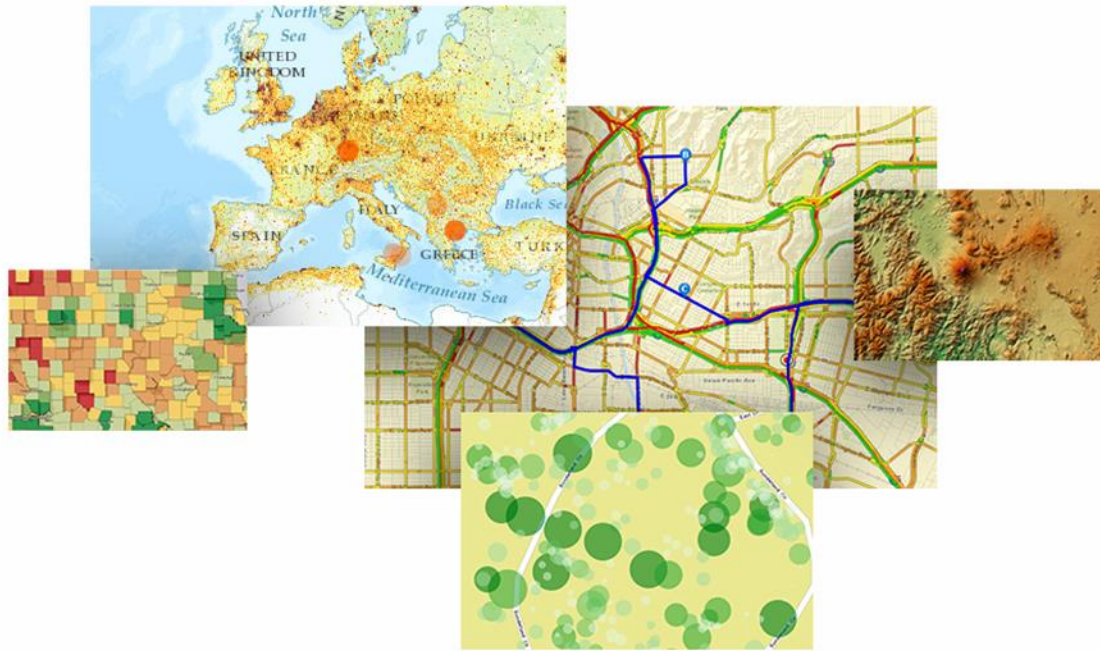
ArcGIS Enterprise Security Model

...the **token** is your key into... ArcGIS Enterprise

Portal for ArcGIS

ArcGIS Enterprise includes Portal for ArcGIS, helping you create and share maps and apps in just a few minutes. Portal for ArcGIS also gives you Web AppBuilder for ArcGIS, so you can build intuitive and focused web apps that run anywhere, on any device—without writing a single line of code. Your portal provides tools for keeping your geographic assets secure as well as a set of authoritative (and beautiful) world basemaps.

[Learn more about Portal for ArcGIS](#)



Portal for ArcGIS

Foundation of the ArcGIS
Enterprise

package

service

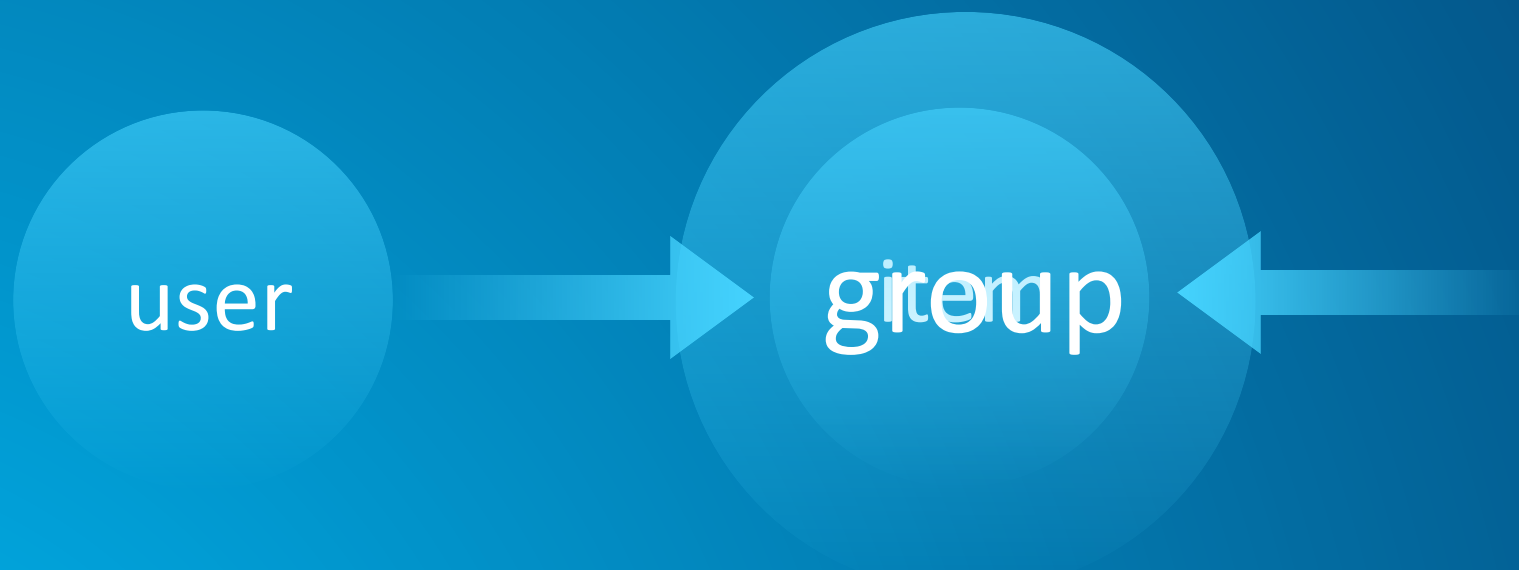
item

app

web map

layer

contētēn

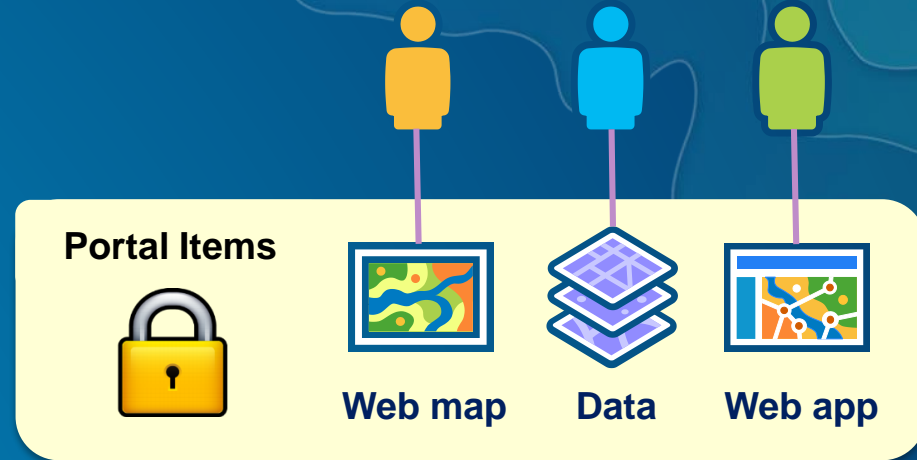


access

How is Security Set?

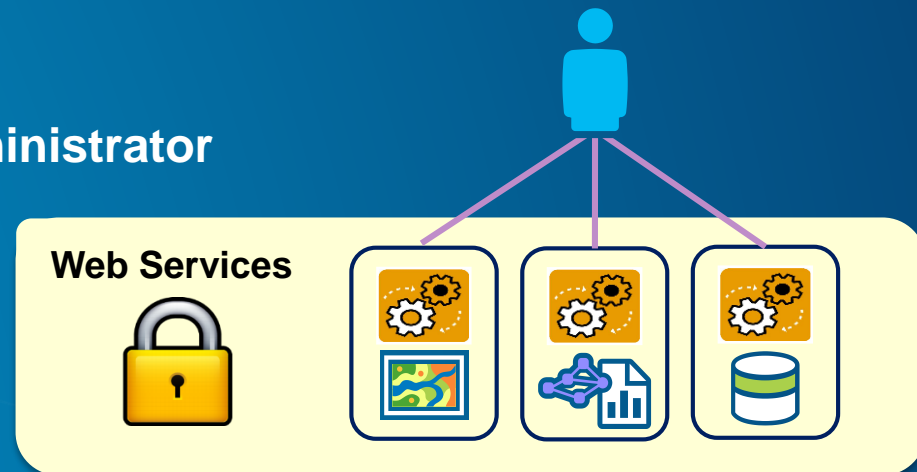
- Portal for ArcGIS

- Permissions set by item owner
- Can be changed by administrators




- ArcGIS Server

- Permissions can be set by any publisher/administrator



Flexible Security Options with ArcGIS Enterprise



ArcGIS Enterprise

ArcGIS Enterprise Supports...

Built-In Accounts

Enterprise Groups

Smart Cards

LDAP

OAuth

SAML

Certificates

PKI

CAC Cards

IWA

Active Directory

Forms Auth

Single Sign On

Kerberos

NTLM

HTTP Auth

Custom Roles

Flexible Security Options with ArcGIS Enterprise



ArcGIS Enterprise

Gets you ~~into~~ ^{into} everything

General

Home Page

Gallery

Map

Item Details

Groups

Utility Services

ArcGIS Online

Servers

Roles


Collaborations

Security

Security

Configure the security settings for your portal.

Policies




☒ Allow access to the portal through [HTTPS](#) only.

☒ Allow [anonymous access](#) to your portal.

☒ Allow members to edit biographical information and who can see their profile.

Sharing and Searching



☒ Members can share content publicly.


Password Policy



You can set the password policy for all members with built-in accounts in your portal 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 to retain to which to compare for redundancy when a new password is supplied.

UPDATE PASSWORD POLICY

Enterprise Logins via SAML



You can set up your portal so that your users will be able to sign in to Portal for ArcGIS using the same username and password that they use with your existing on-premises systems.

The key to this is through a technology known as identity federation that this section will help you set up through two actions.

SET IDENTITY PROVIDER



Set Identity Provider

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

Name:

Your users will be able to join:
☒ Automatically ☐ After you add the accounts to the portal

Metadata for the Enterprise Identity Provider will be supplied using:
☒ A URL ☐ A File ☐ Parameters specified here

URL:

[Hide advanced settings](#)

- ☐ Encrypt Assertion
- ☒ Enable Signed Request

☒ Sign using SHA256
- ☒ Propagate logout to Identity Provider
- ☒ Update profiles on sign in

Logout URL:
 Optional.

Entity ID:

Single Web Sign On through SAML

(Security Assertion Markup Language)

Industry standard for SSO

SAML login User Experience

- With SAML authentication enabled, user will be prompted by IDP to login
- Use IDP login or built-in login

Home Gallery Map Scene Groups Sign In

Sign In

First time signing in?

[CREATE AN ACCOUNT](#)

Sign in

Sign in to Enterprise 10.5.1 **esri**

[USING YOUR ENTERPRISE ACCOUNT](#)

OR

[USING YOUR ARCGIS ACCOUNT](#)

Sign In

idphost.esri.com

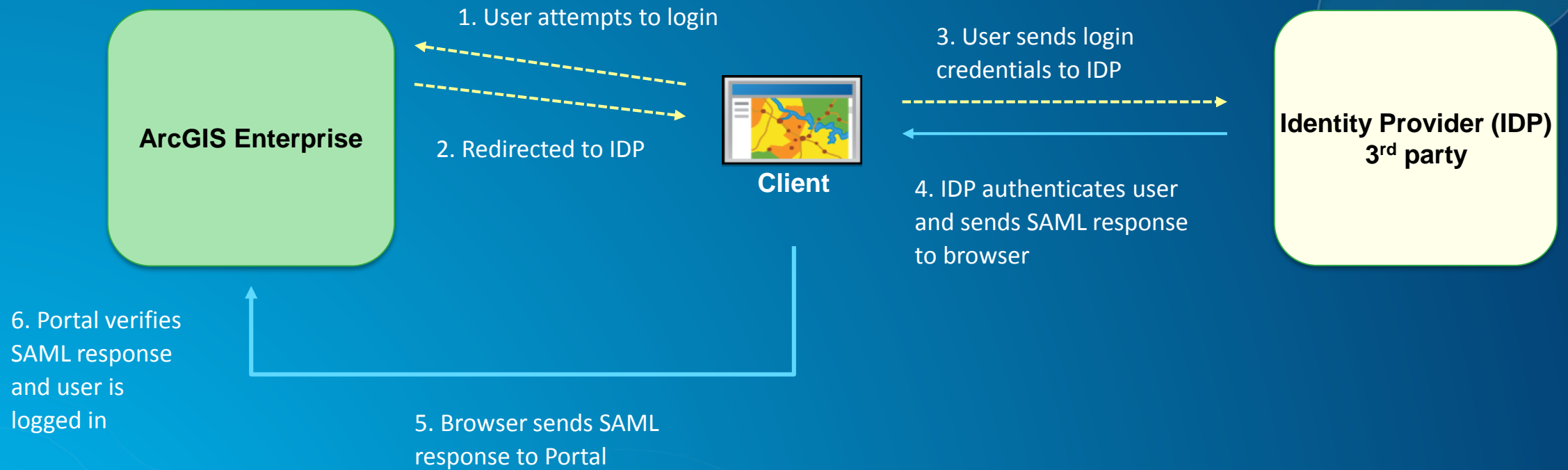
Type your user name and password.

User name: Example: Domain\username

Password:

[Sign In](#)

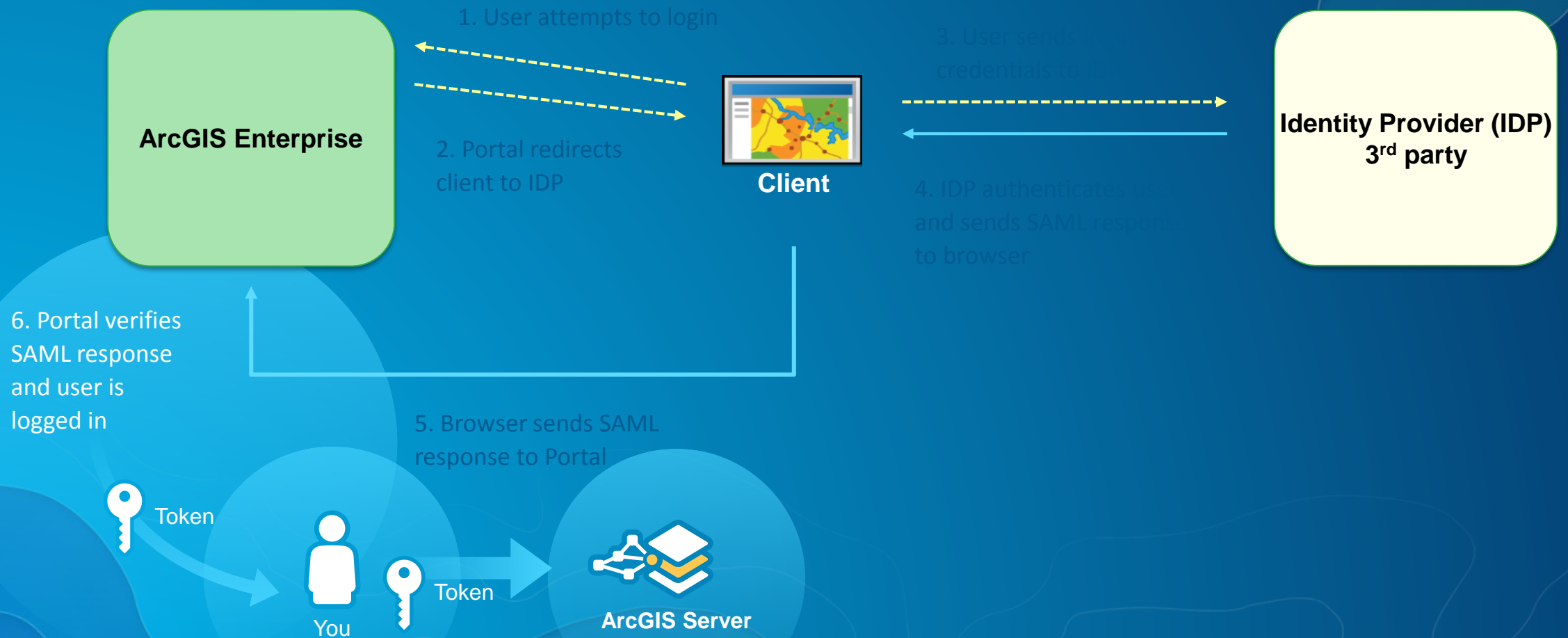
SAML – Conceptual Workflow



SAML – Conceptual Workflow

But what about the **token**?!

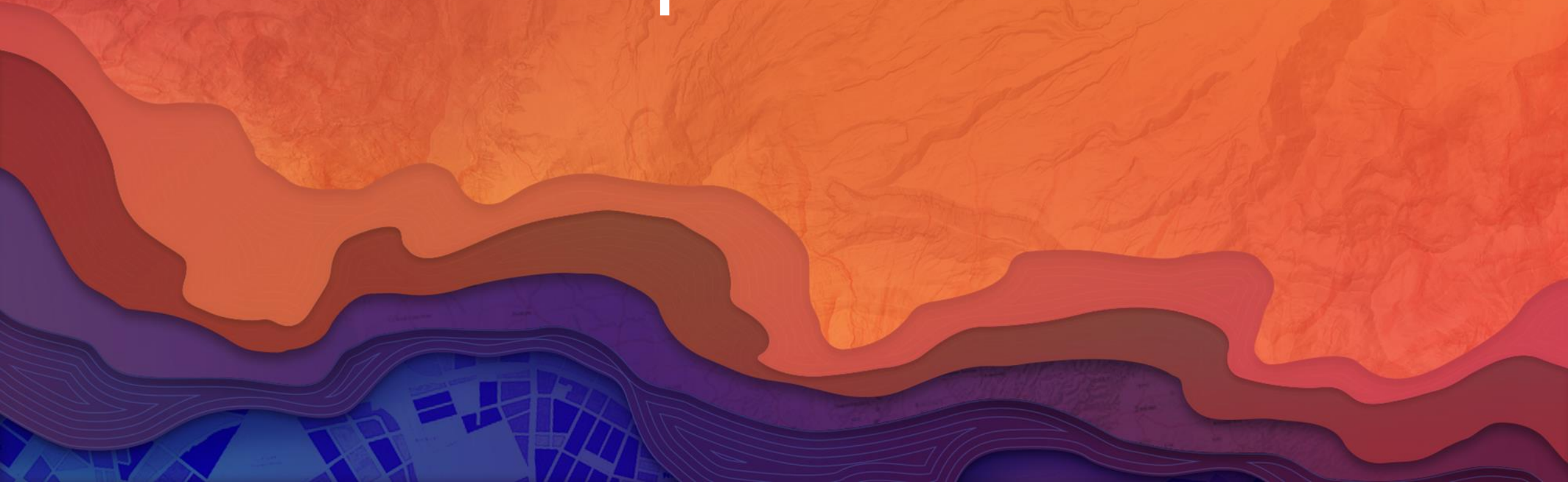
SAML – Conceptual Workflow



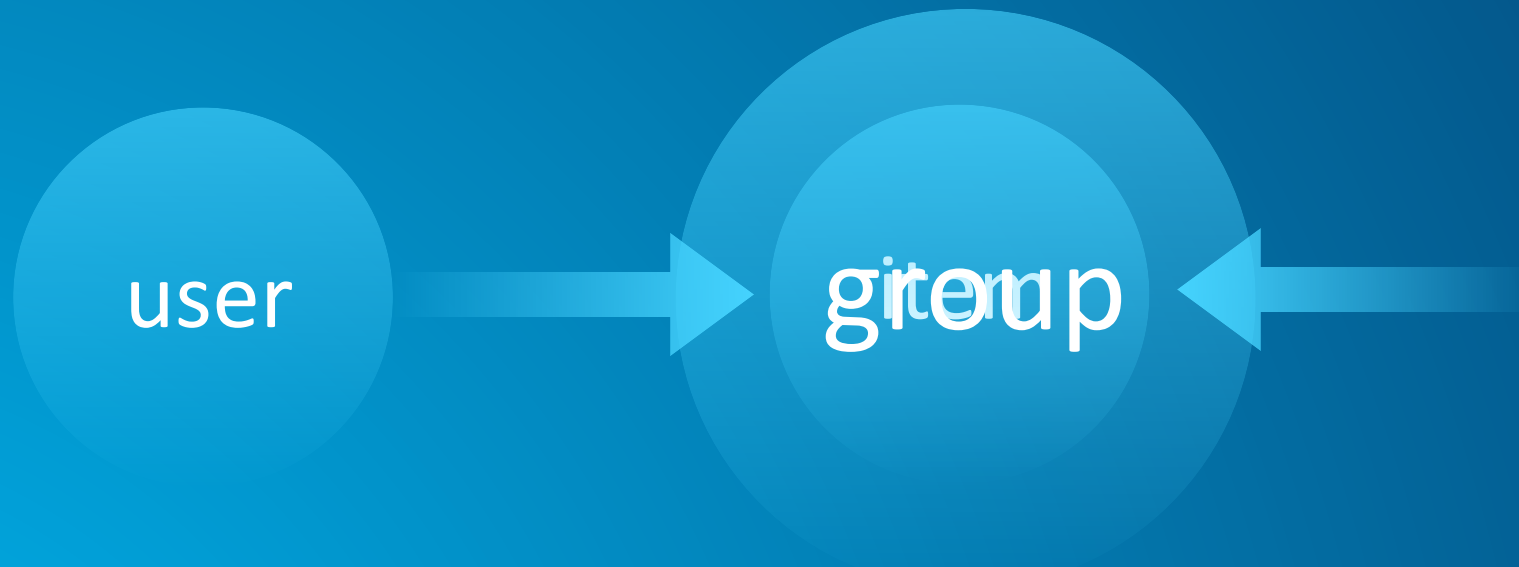
Demo

SAML Authentication

Groups vs Roles



Groups



access

Roles

As an administrator I can ...

As a user I can ...

Roles are privileges

As a viewer I can ...

As a publisher I can ...

Roles

- Permissions for Portal users defined by roles
- 4 default roles
 1. **Administrator**
 2. Publisher
 3. **User**
 4. Viewer



Portal for ArcGIS: Custom Roles

- Provide more flexibility to enable fine grained control on what members can do
- My Organization page > Edit Settings > Roles > Create Role

SAVE

CANCEL

General

Home Page

Gallery

Map

Item Details

Groups

Utility Services

ArcGIS Online

Servers

Roles

Collaborations

Security

Roles ?

Role Name:

Description:

Select a role or template on which to base the new role:

Minimum Level: ☐ 1 ☒ 2

TOGGLE ALL ON

COLLAPSE ALL

SAVE ROLE

DISCARD CHANGES

General Privileges

☒ Members

☒ View

☒ Groups

☒ Create, update, and delete

☒ Join organizational groups

☒ View groups shared with portal

☒ Content

☒ Create, update, and delete

☒ Publish hosted feature layers

☒ Publish hosted tile layers

☒ Publish hosted scene layers

☒ View content shared with portal

☒ Sharing

☒ Share with groups

☒ Share with portal

☒ Share with public

☒ Make groups visible to portal

☒ Make groups visible to public

☐ Content and Analysis

☒ Geocoding

☒ Network Analysis

☒ Standard Feature Analysis

☒ GeoEnrichment

☒ Elevation Analysis

☐ GeoAnalytics Feature Analysis

☐ Raster Analysis

☐ Features

☒ Edit

☐ Edit with full control

Administrative Privileges

☐ Members

☒ View all

☐ Update

☐ Delete

☐ Disable

☐ Change roles

☐ Manage licenses

☒ Groups

☒ View all

☒ Update

☒ Delete

☒ Reassign ownership

☒ Assign members

☒ Link to enterprise group

☒ Create with update capabilities

☐ Content

☐ View all

☐ Update


☐ Delete


☐ Reassign ownership

SAVE ROLE

DISCARD CHANGES














































Home Gallery Map Scene Groups My Content My Organization Admin



 Name:
Group Name

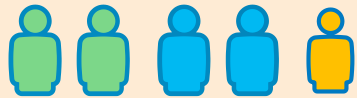
Summary (optional)

Description (optional)

B I U                                             

Enterprise Groups in ArcGIS Enterprise

Windows Active Directory
or LDAP



Exploration Group



ArcGIS Enterprise



E – Group: Exploration

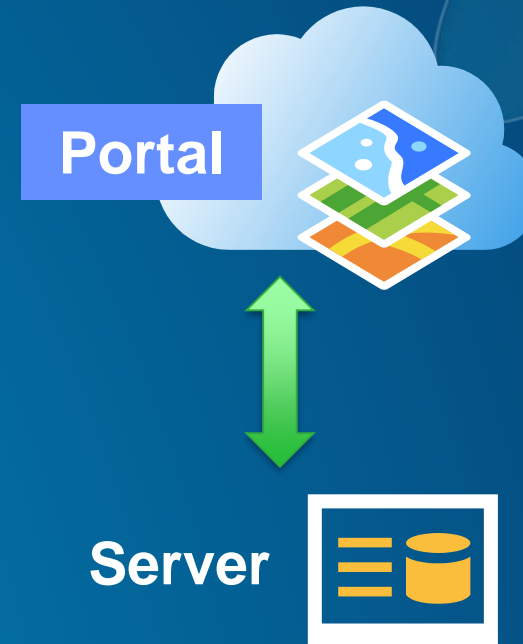


Demo

Enterprise Groups

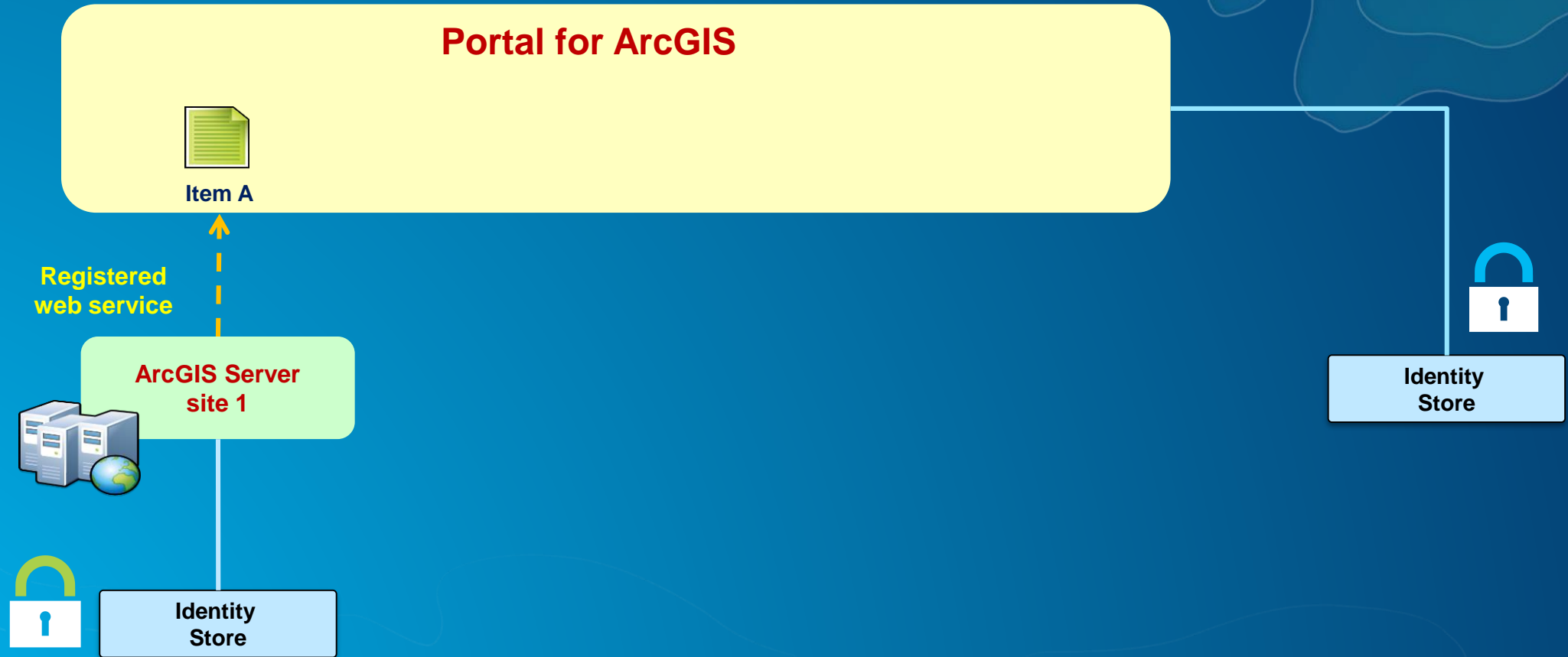
Building the Enterprise

1. **Registering services**
2. **Federating a Server**



Building the Enterprise

Portal for ArcGIS + ArcGIS Server

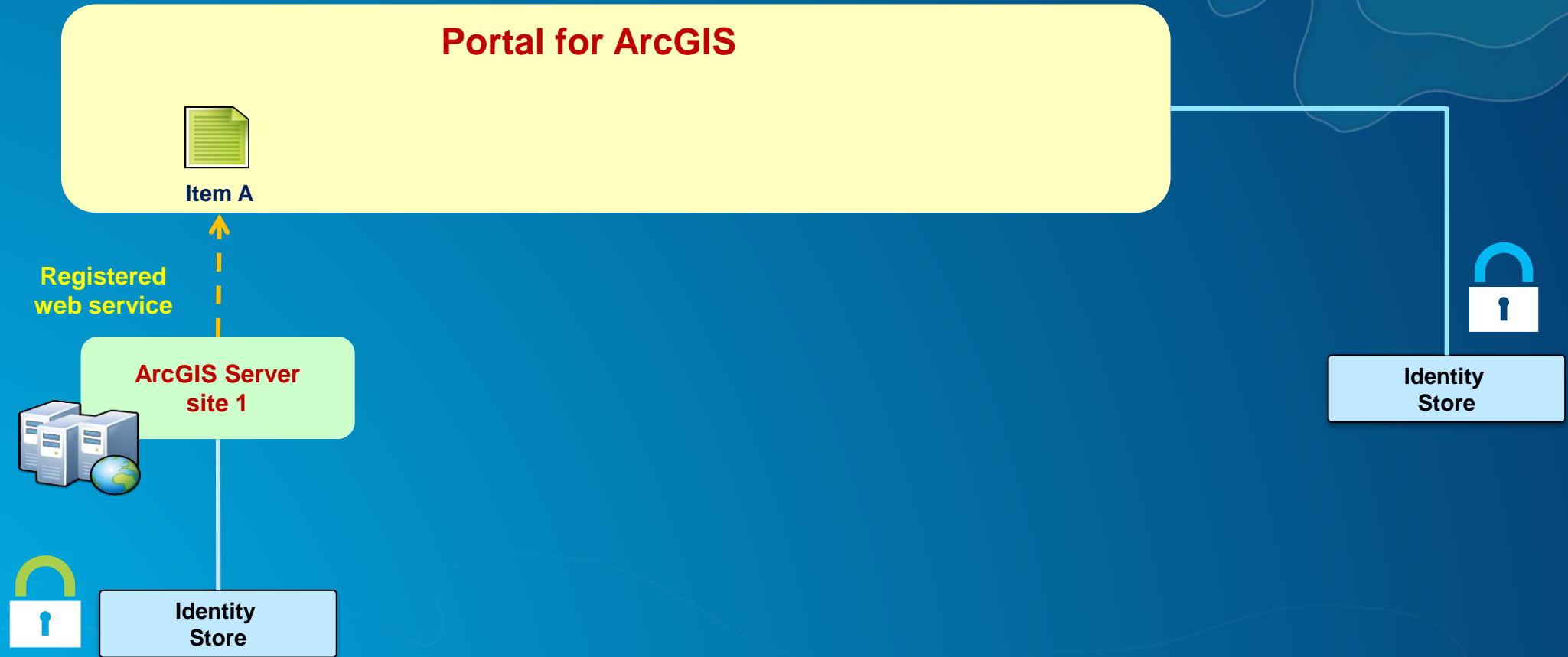


Demo

Registering a Service

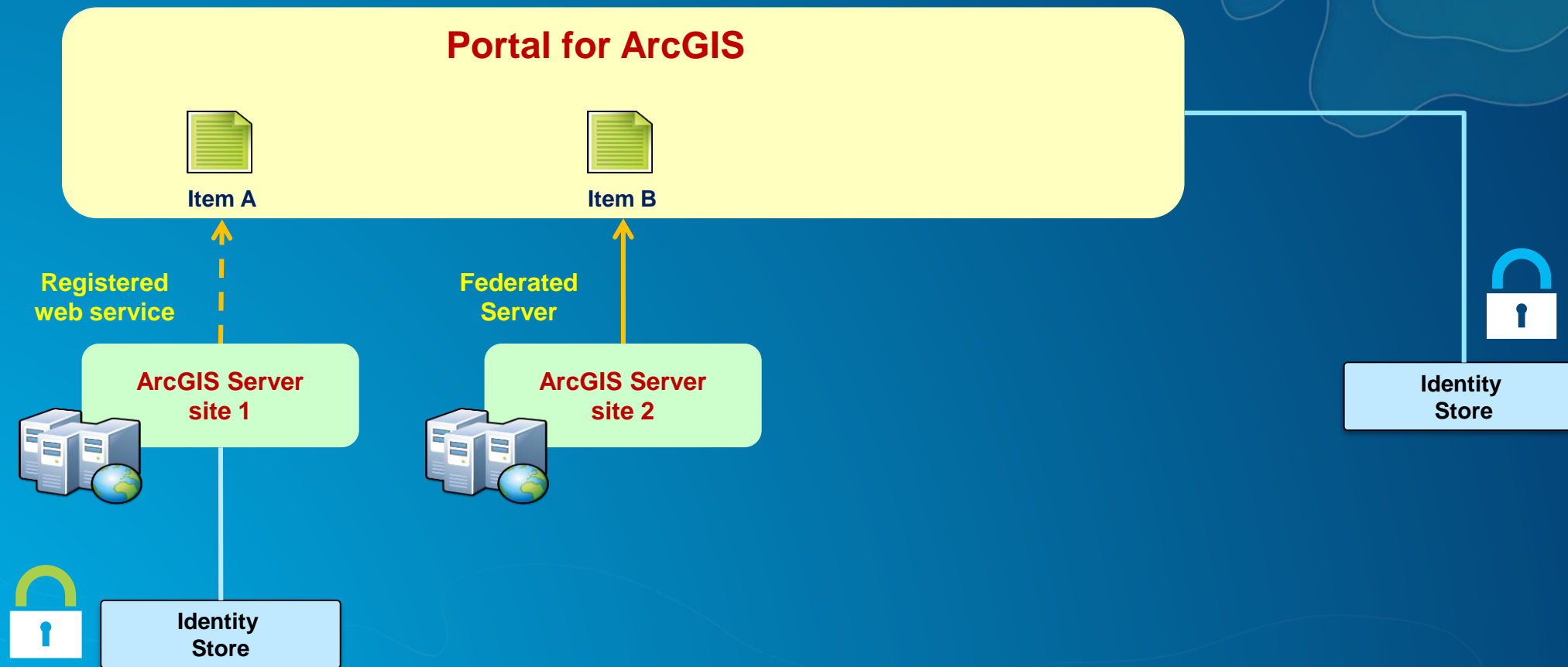
Building the Enterprise

Portal for ArcGIS + ArcGIS Server



Implementation Patterns

Portal for ArcGIS + ArcGIS Server



Demo

ArcGIS Server Federation

ENCRYPTED



Encryption and HTTPS

Securing communication protocols

WHY HTTPS / WHAT IS IT USED FOR?

ADD WEB ADAPTOR ARCHITECTURE DISCUSSION

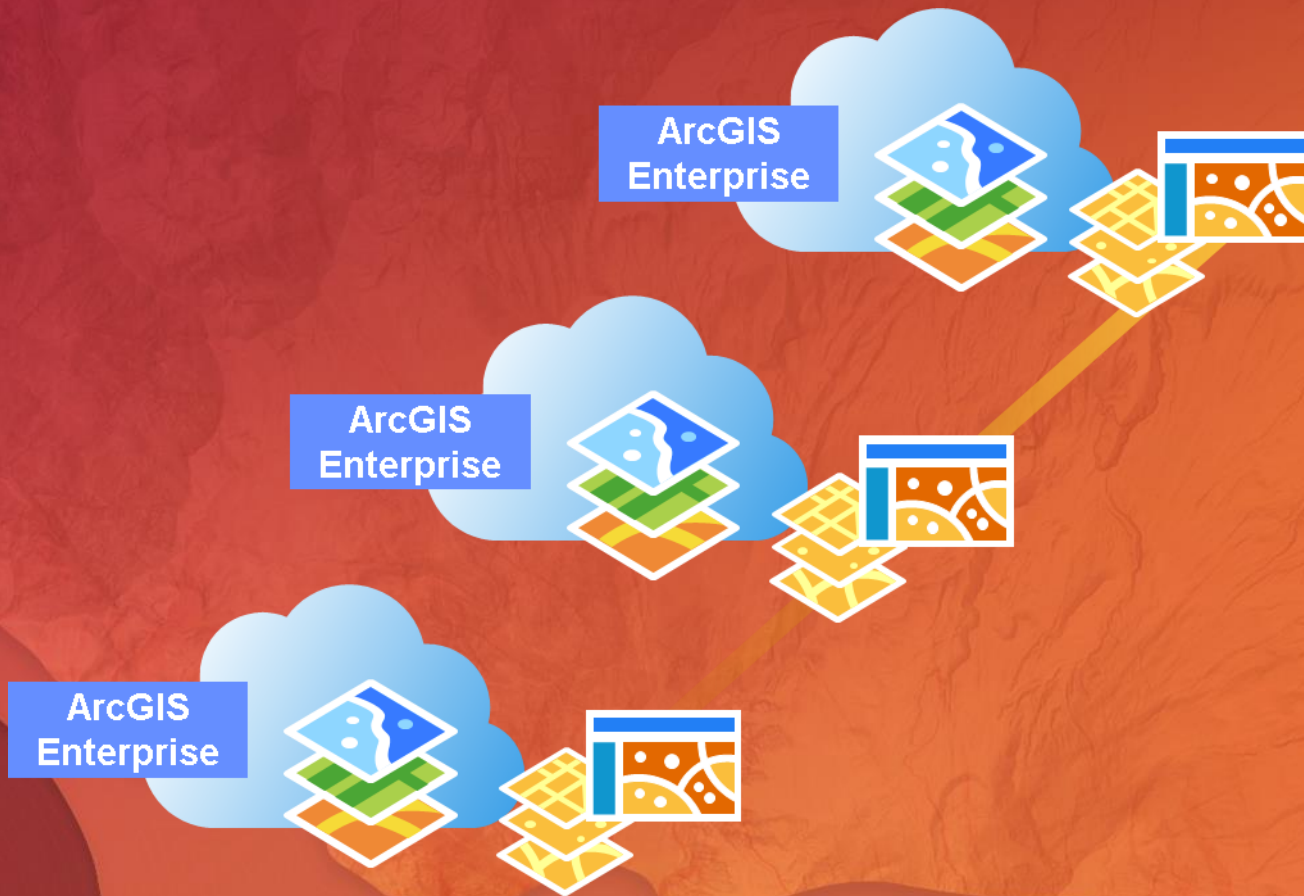
How do you set up a Security Certificate?

1. **Generate a Certificate Signing Request (CSR)**
2. **Send CSR for signing**
 - **By a domain or well-known Certificate Authority**
3. **Import signed certificate**



Demo

HTTPS Certificates



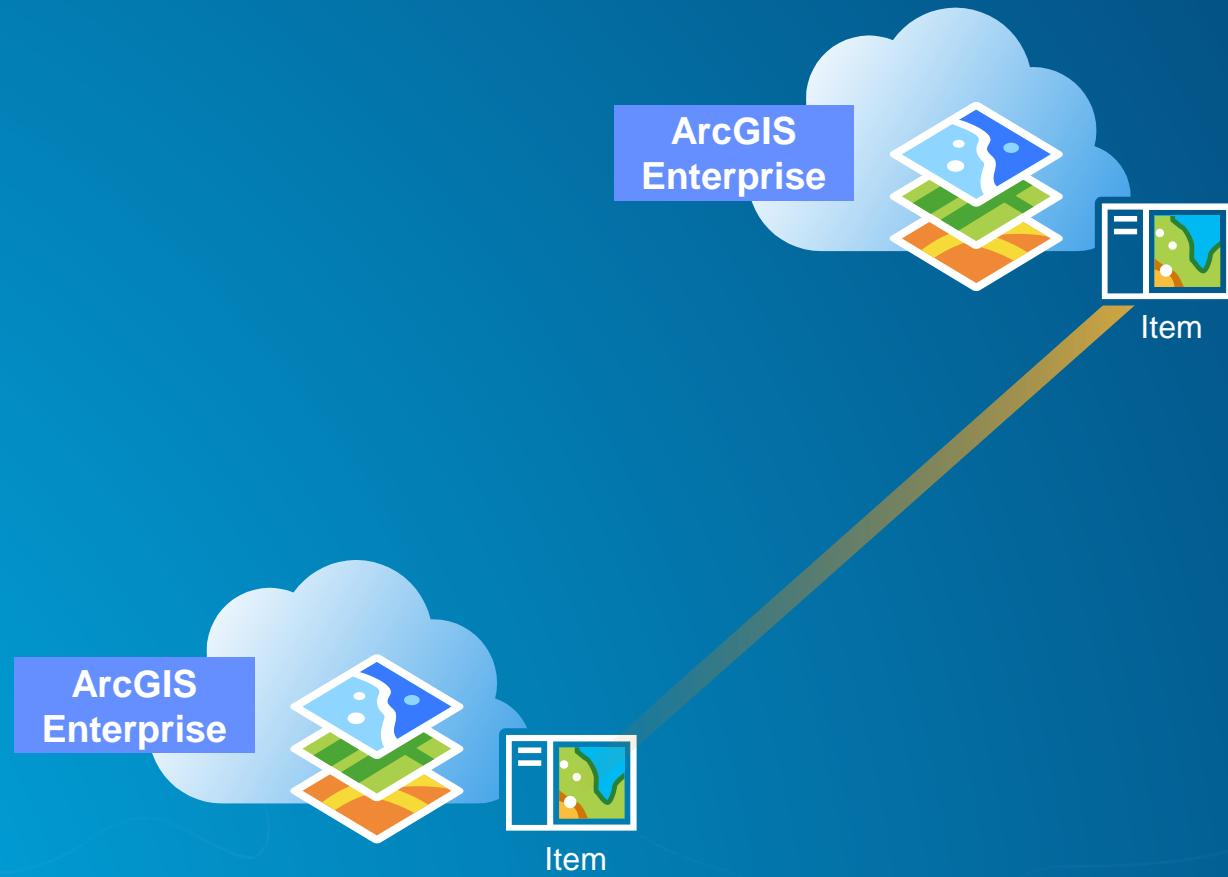
Collaboration

Security Considerations

Collaboration

What is it?

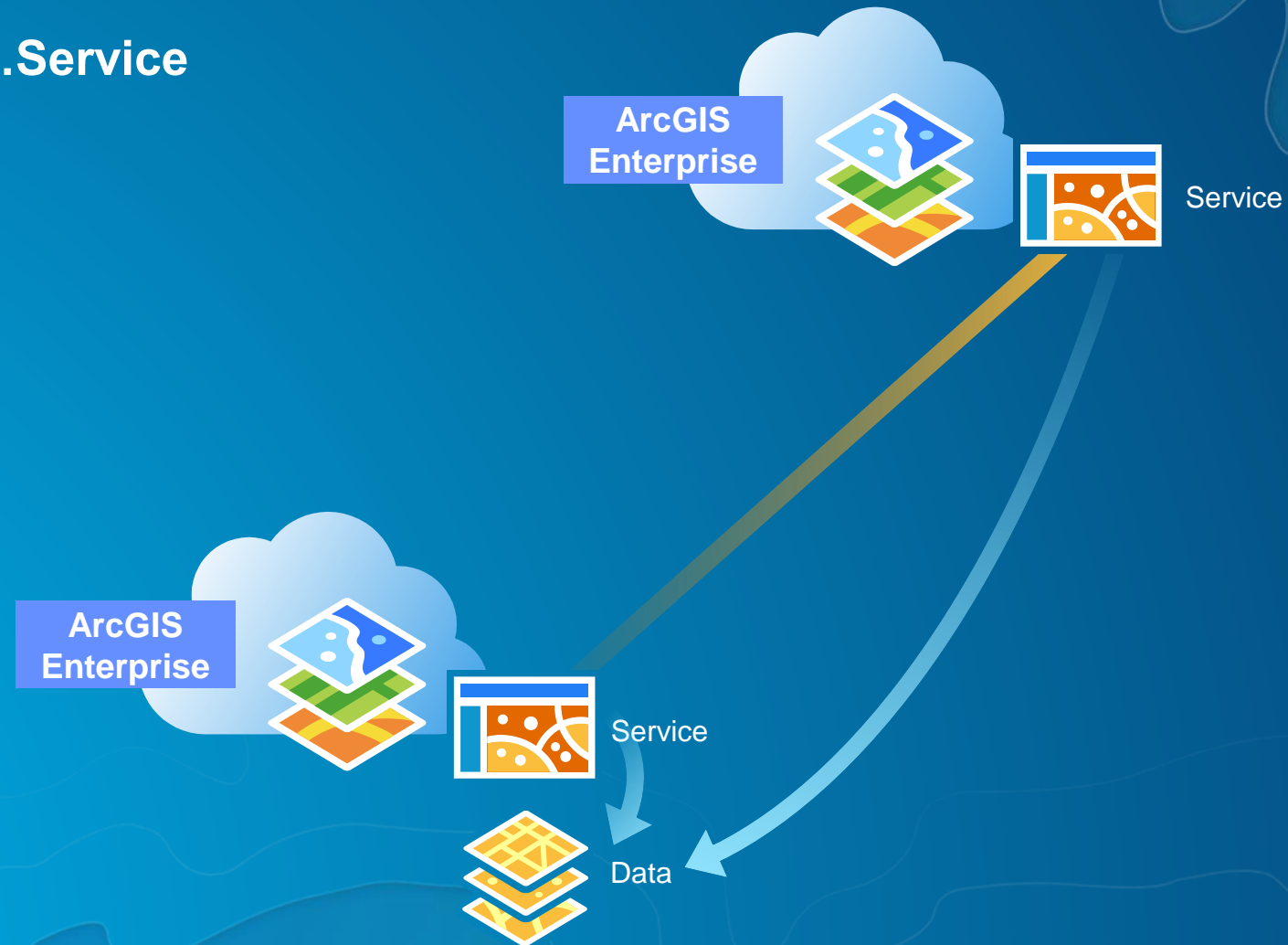
Collaboration



Collaboration

As an Administrator what do I need to know?

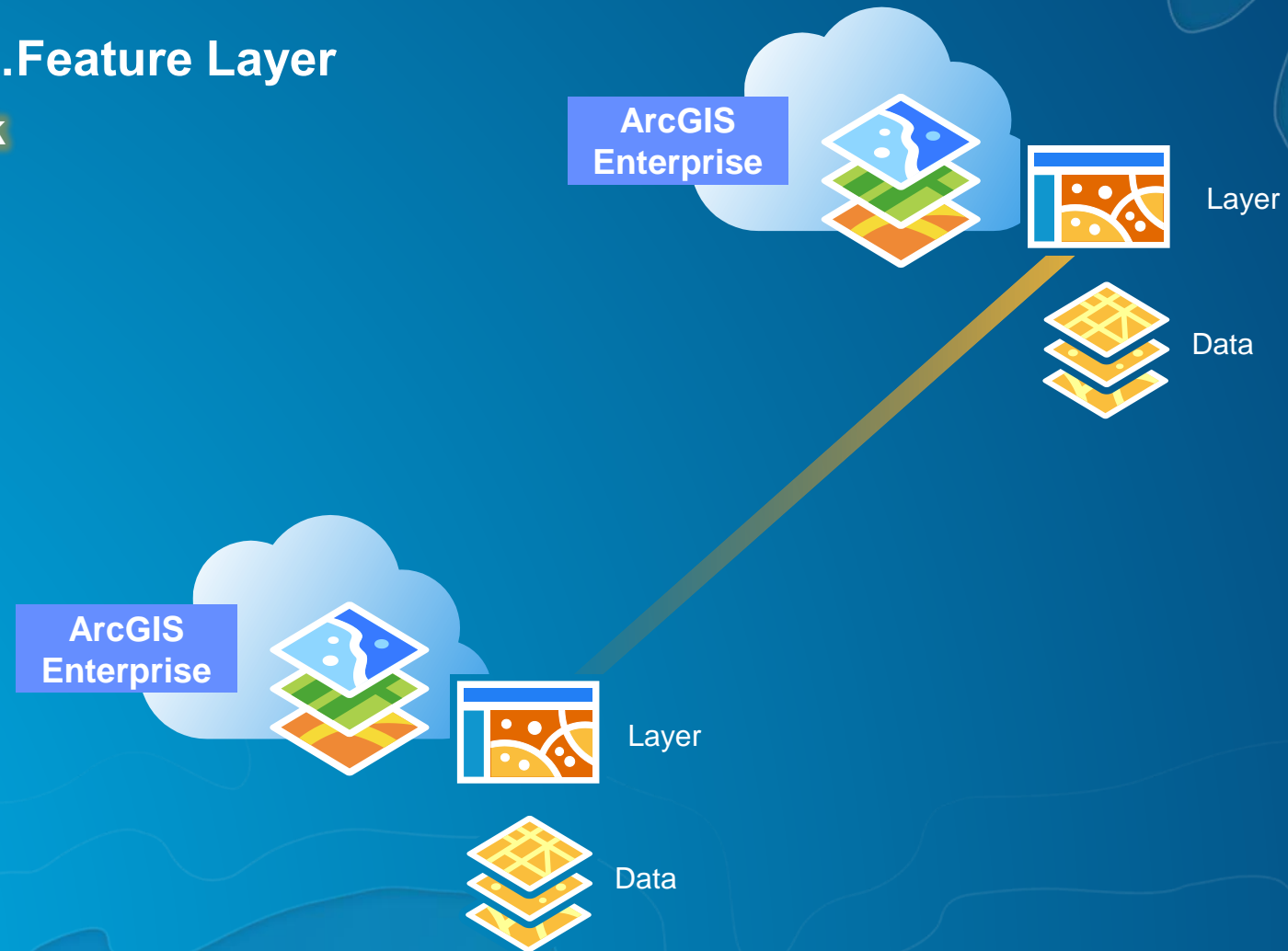
- Collaborating...Service
 - Low Risk



Collaboration

As an Administrator what do I need to know?

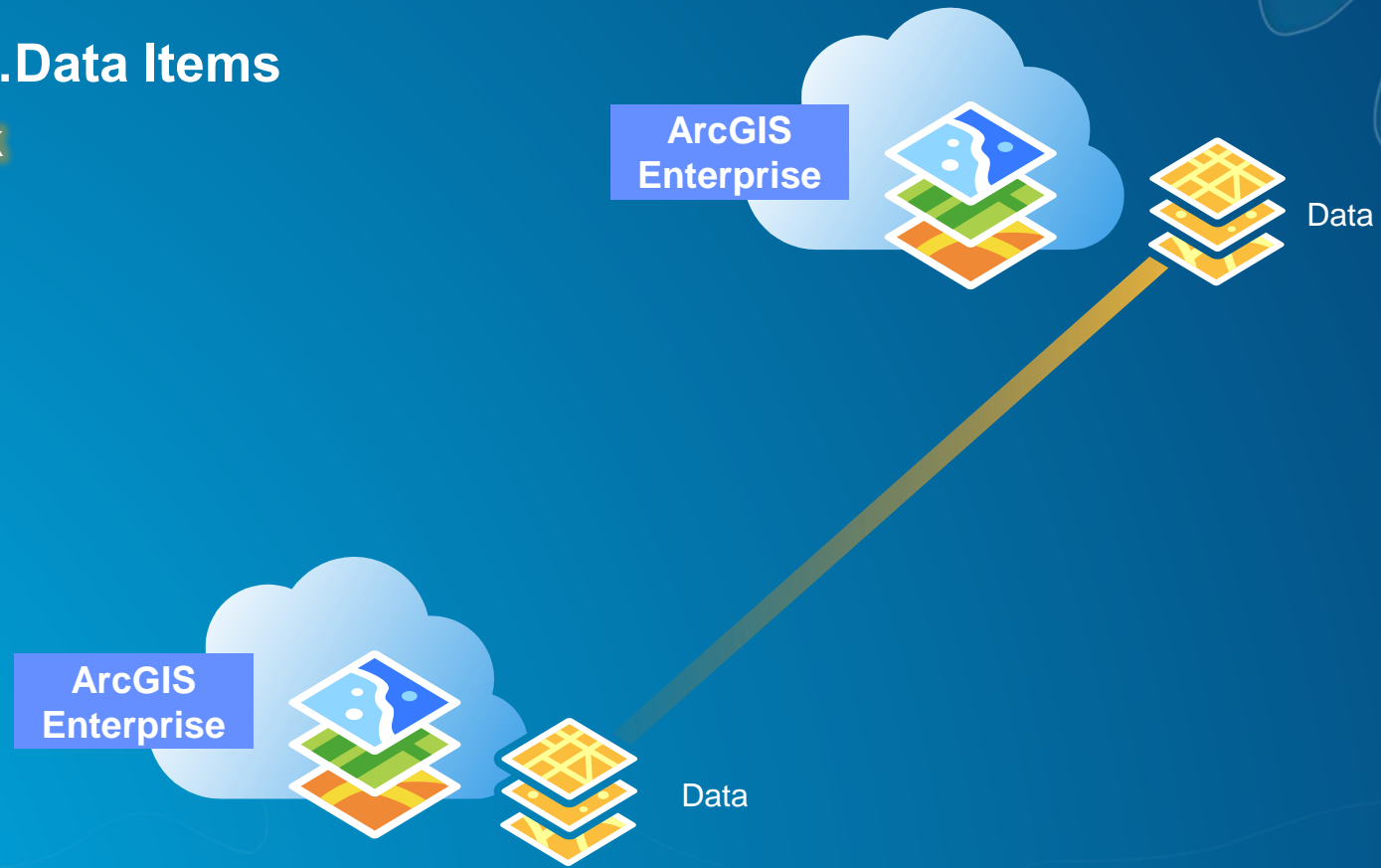
- Collaborating...Feature Layer
 - Moderate Risk



Collaboration

As an Administrator what do I need to know?

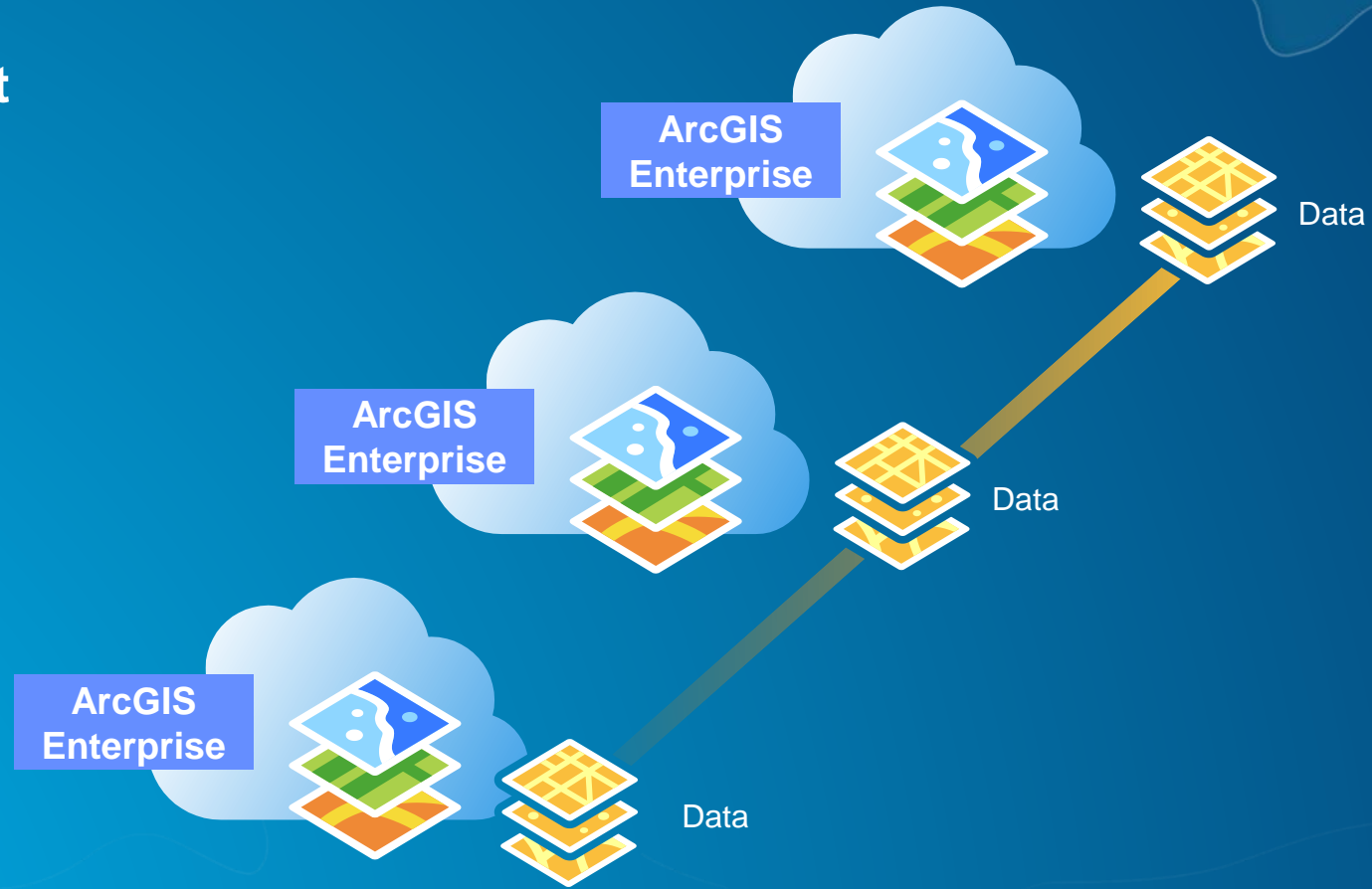
- Collaborating...Data Items
 - Moderate Risk



Collaboration

As an Administrator what do I need to know?

- Transitive Trust
 - High Risk

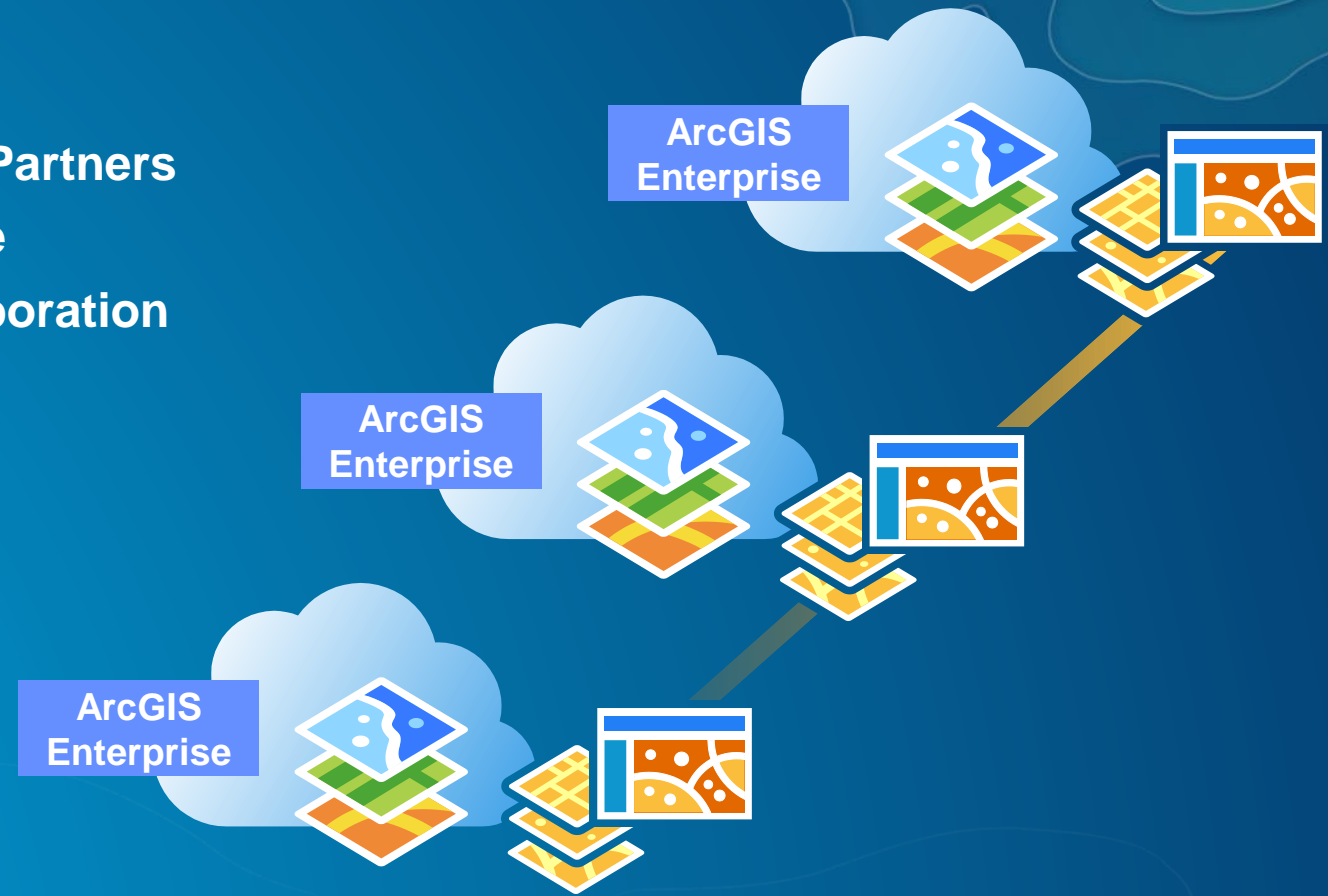


Collaboration

As an Administrator what do I need to know?

- **Recommended Practices**

- Limit Collaborations to Trusted Partners
- Collaborate Layers by Reference
- Establish New Groups for Collaboration



Summary

- **Tokens are the Foundation of the ArcGIS Enterprise Security Model**
- **ArcGIS Enterprise Supports many Authentication Options**
- **Use SAML if you can**
- **HTTPS Everywhere – Use CA Signed Certificates**
- **Federate Server with Portal to Fully Enable the ArcGIS Enterprise**
- **Consider security risks prior to using Collaboration**

Other Related Sessions

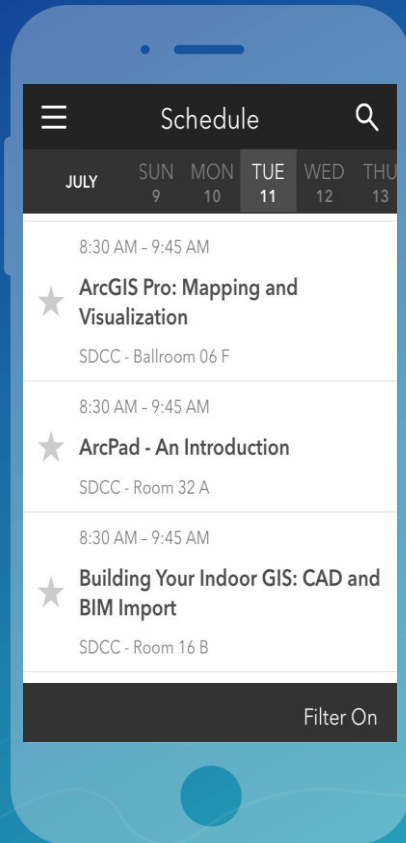
ArcGIS Enterprise Security: An Introduction	Tuesday, July 11, 10:15 AM	SDCC - Room 16 B
ArcGIS Enterprise Security: Advanced Topics	Tuesday, July 11, 1:30 PM	SDCC - Room 16 B
Designing a Web GIS Security Strategy	Tuesday, July 11, 3:15 PM	SDCC - Room 31 B
Building Security into Your System	Tuesday, July 11, 4:30 PM	SDCC - Esri Services (Showcase)
ArcGIS Enterprise: Introducing Portal for ArcGIS	Wednesday, July 12, 10:15 AM	SDCC - Room 09
ArcGIS Enterprise Security: An Introduction	Thursday, July 13, 8:30 AM	SDCC - Room 14 A
ArcGIS Enterprise Security: Advanced Topics	Thursday, July 13, 10:15 AM	SDCC - Room 14 A
Best Practices for Configuring Secured Services	Thursday, July 13, 12:30 PM	SDCC - Demo Theater 09
Designing a Web GIS Security Strategy	Thursday, July 13, 3:15 PM	SDCC - Room 32 A
ArcGIS Enterprise: Introducing Portal for ArcGIS	Friday, July 14, 9:00 AM	SDCC - Room 04

Please Take Our Survey on the Esri Events App!

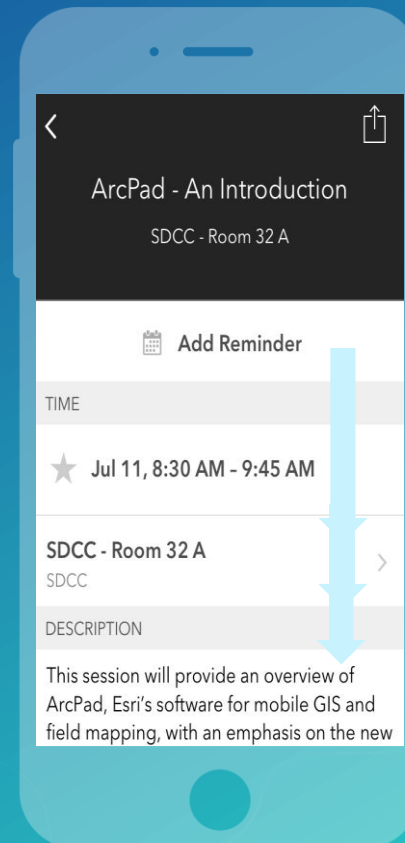
Download the Esri Events app and find your event



Select the session you attended



Scroll down to find the survey



Complete Answers and Select "Submit"

