Patterns and Practices for Large Scale Upgrades: Lessons from EEAP

Ben Schaub, Thomas Fair

Esri Enterprise Advantage Program (EEAP)

- **A flexible framework to help organizations reach their GIS vision**

Key Capabilities

- Assigned Technical Advisor
- Collaborative Planning
- Idea Incubation & Innovation
- Access to consulting, training & premium support services, managed cloud services

Benefits and Outcomes

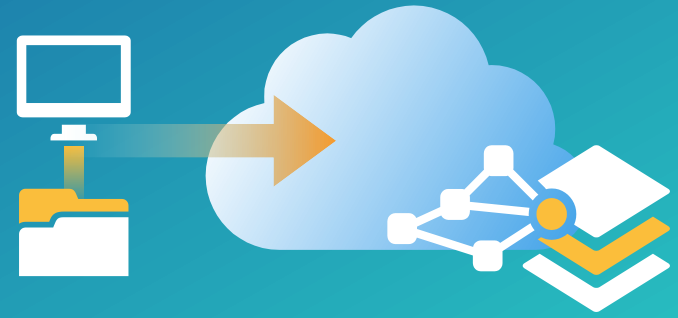
- GIS Vision
- Close Collaboration & Partnership
- Insightful Advice & Advocacy
- Organization Enablement
- Maximize GIS Investment

Why Should I Upgrade?

COMMON REASONS TO UPGRADE

Reasons to Upgrade

- Software retirement
- Hardware retirement
- O/S retirement
- HTML5
- Security enhancements
- Desired functionality
- Real-time data tracking
- Large project implementation
- IT governance and policies
- Technology trends
- Mobile devices
- Performance needs
- Bug fixes



… Drive Business Value

A Whole New Type of GIS Is Emerging

Connecting Individuals, Organizations, and Communities

Individuals

Breaking Down Barriers

Organizations

Sharing Geographic Knowledge

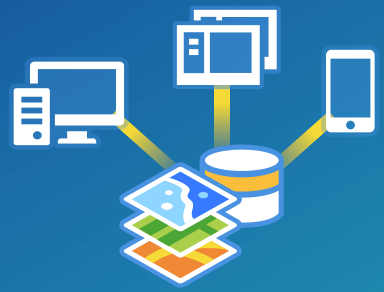
Networks of Organizations

ArcGIS Continues to Evolve

An Interconnected Network
Is Emerging . . .

Desktop

Server



Cloud / SaaS

System of
Systems

. . . A Distributed Platform of Open Geospatial Services

Calendar-based Support Life Cycle

- Provides predictability, transparency, and consistency.
- For the majority of new ArcGIS products, exact dates for all phases of the Product Life Cycle will be published
- You will know when and for how long a new release is supported.

… Providing a clear and concise Support Life Cycle for Esri products

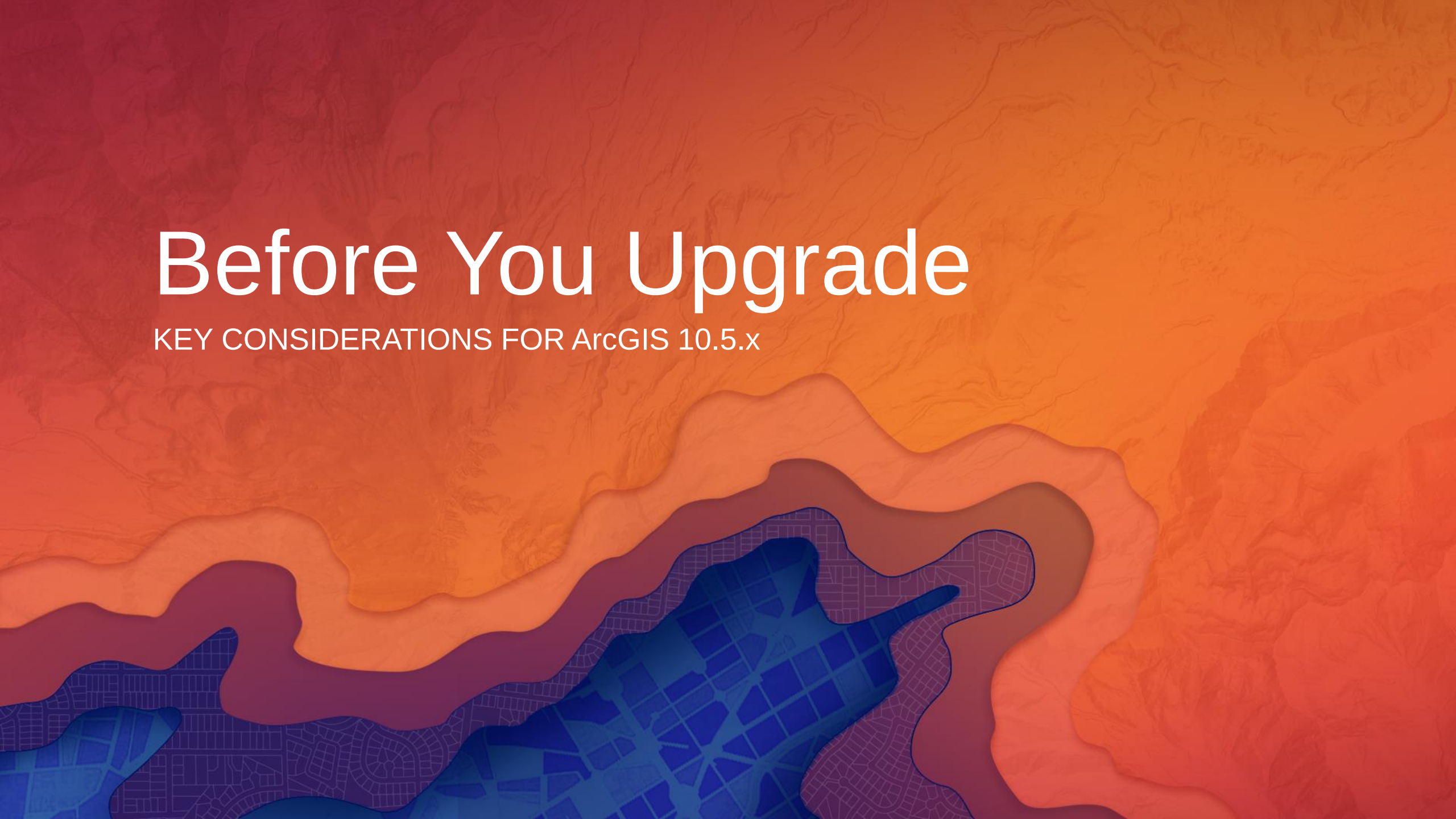
Release Date	General Availability	Extended Support	Mature Support	Retired
June 29, 2017	Jun 2017 - Nov 2018	Dec 2018 - Nov 2020	Dec 2020 - Nov 2022	December 01, 202
December 15, 2016	Dec 2016 - Nov 2018	Dec 2018 - Nov 2020	Dec 2020 - Nov 2022	December 01, 202
May 31, 2016	May 2016 - Jan 2018	Feb 2018 - Jan 2020	Feb 2020 - Jan 2022	February 01, 202
February 18, 2016	Feb 2016 - Jan 2018	Feb 2018 - Jan 2020	Feb 2020 - Jan 2022	February 01, 202
May 13, 2015	May 2015 - Nov 2016	Dec 2016 - Nov 2018	Dec 2018 - Nov 2020	December 01, 202
December 10, 2014	Dec 2014 - Nov 2016	Dec 2016 - Nov 2018	Dec 2018 - Nov 2020	December 01, 202
April 15, 2014	Apr 2014 - Jun 2015	Jul 2015 - Jun 2017	Jul 2017 - Jun 2019	July 01, 2019

Product Life Cycle

http://support.esri.com/en/other-resources/product-life-cycle

Before You Upgrade

KEY CONSIDERATIONS FOR ArcGIS 10.5.x



an **upgrade** is a project that your organization needs to plan for and manage

These 4 components configured together create what is called the base ArcGIS Enterprise deployment

ArcGIS Server

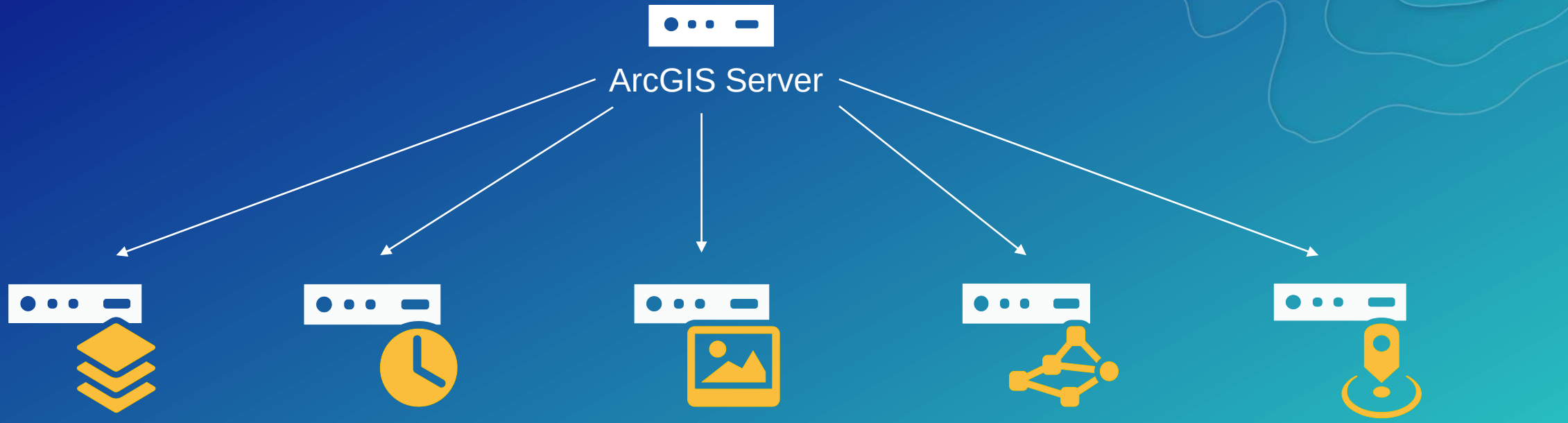
Portal for ArcGIS

ArcGIS Data Store

ArcGIS Web Adaptor

A base ArcGIS Enterprise deployment is required to utilize many of the new server capabilities

Introducing Server Roles



Organizations are Naturally Distributed

- Departments
- Hierarchy
- Effective collaboration between people is key to an organization’s success
- Data and information products must be shared and accessible across departments and hierarchy

ArcGIS Enterprise and Distributed GIS Collaborations

- **Distributed GIS is how you can share content across multiple Web GIS deployments through what's known as a Collaboration.**

Current Collaboration Roadmap

Portal to Portal Collaboration

Portal to ArcGIS Online Collaboration

ArcGIS Online Org to Org Collaboration

Dev – Staging – Production Workflows

all roadmaps are subject to change

ArcGIS Enterprise and Distributed GIS Collaborations

- **Distributed GIS is how you can share content across multiple Web GIS deployments through what's known as a Collaboration.**

Current Collaboration Roadmap*

Portal to Portal Collaboration ***Released with ArcGIS 10.5***

Portal to ArcGIS Online Collaboration ***Released with ArcGIS 10.5.1***

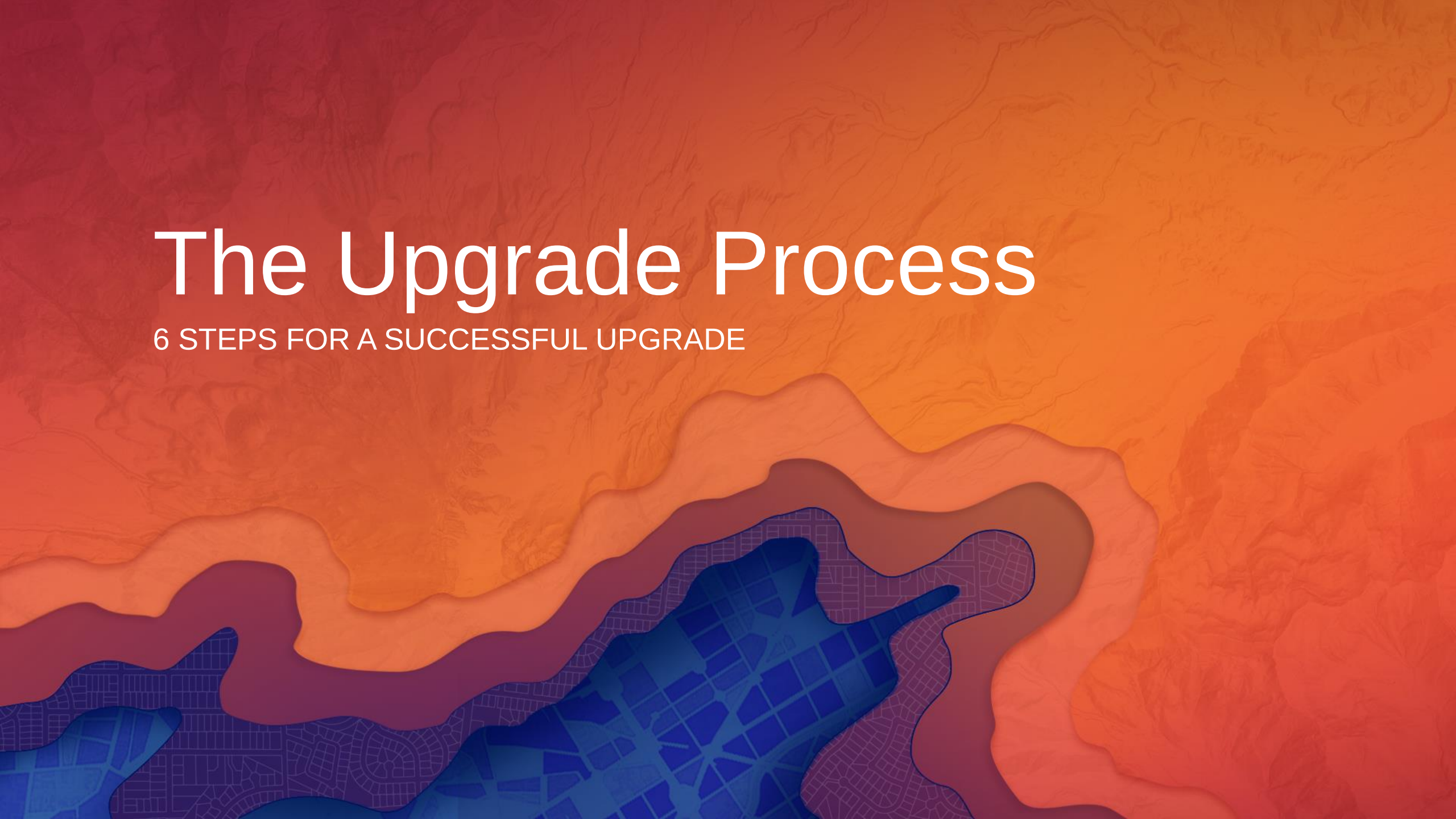
ArcGIS Online Org to Org Collaboration

Dev – Staging – Production Workflows

**all roadmaps are subject to change*

The Upgrade Process

6 STEPS FOR A SUCCESSFUL UPGRADE



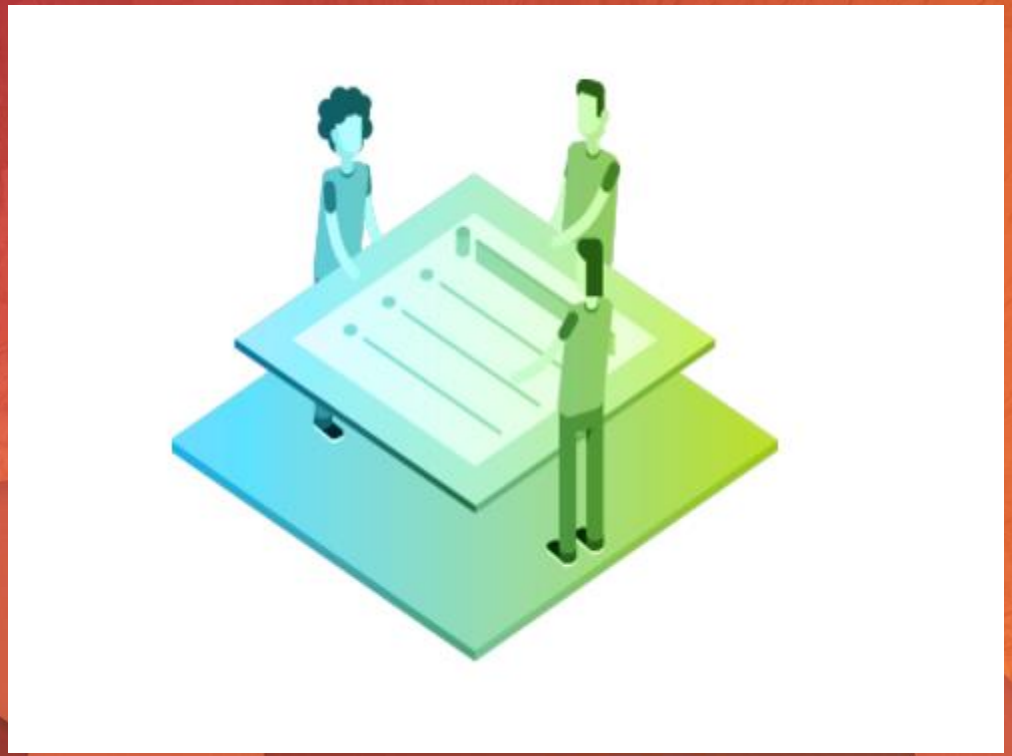
Planning

Step 1 Planning

- Examine existing operations
- What is your vision for this upgrade?
- Create a project plan
- Identify your team for success

Step 1 Planning Resources

- Developing your vision
  - http://www.esri.com/arcgis/about-arcgis
- ArcGIS Platform
  - http://www.esri.com/software/arcgis_old
- Industry Trends
  - http://geohub.lacity.org/



Planning and EEAP

Requirements

Step 2 Requirements

- Identify key stakeholders and their business objectives
  - These objectives will directly impact your technical design
- Types of requirements
  - Business
    - High-level vision statements
  - Functional
    - What does the application do (from a user perspective)
  - Non-functional
    - How the application does it (usability, security, performance, etc..)
- What are the challenges with the current production environment?
- Are there new applications or technologies you want to add?
- Are there other projects which you should account for?
- Continue to develop and evolve your vision

Step 2 Requirements Resources

- ArcGIS Enterprise
  - http://server.arcgis.com/en/server/latest/get-started/windows/what-is-arcgis-enterprise-.htm
- Planning your site
  - http://server.arcgis.com/en/server/latest/install/windows/deployment-scenarios.htm
- Insights for ArcGIS
  - http://server.arcgis.com/en/insights/latest/administer/windows/install-insights-windows.htm#ESRI_SECTION1_66602DCDB36D421A820BFB7790C5362D
- System Requirements
  - http://server.arcgis.com/en/server/latest/install/windows/arcgis-server-system-requirements.htm

ArcGIS Platform Requirements Review

Activity Description

Esri Enterprise Advantage Program

Esri will provide up to XX hours of consulting services, including preparation and travel time, to assist <CUSTOMER NAME ABBREVIATION> with determining how to best implement the ArcGIS Platform in their organization. To accomplish this, the Esri consultant will first conduct a remote kickoff meeting with <CUSTOMER NAME ABBREVIATION> in order to discuss overall objectives, review the high level approach, success criteria, necessary resources, the questionnaire and answer any questions prior to the onsite visit.

Following the kickoff the Esri consultant will travel to <CUSTOMER NAME ABBREVIATION> facilities to conduct an ArcGIS Platform Requirements Review. During the requirements review, the Esri consultant will work with <CUSTOMER NAME ABBREVIATION> 's primary point of contact (POC), business area executives, key stakeholders, users, GIS and IT staff on the following:

- Review how location information is used in your existing workflows
- Discuss key business areas and associated workflows and processes that would benefit from the ArcGIS Platform
- Assist in selecting a business area for conducting a pilot implementation
- Discuss ArcGIS Platform technology and implementation process
- Identify data content available to support key maps and apps
- Review Esri solution template options available for implementation
- Determine metrics, feedback, and evaluation processes
- Discuss implementation timeline
- Identify existing and necessary resources (infrastructure, data, software, etc.)

ArcGIS Platform Requirements Review

Design

Step 3 Design

- A formal design needs to be created to support your requirements
- Architecture Vision
- Business Drivers
- Sites
- User Workflows
- Data Architecture
- Application Architecture
- Technology Architecture
- Capacity Planning

Step 3 Design Resources

- Architecting the ArcGIS Platform
  - http://www.esri.com/~/media/files/pdfs/products/arcgis-platform/architecting-the-arcgis-platform
- Deployment Scenarios
  - http://server.arcgis.com/en/server/latest/install/windows/deployment-scenarios.htm
- System Requirements
  - http://server.arcgis.com/en/server/latest/install/windows/arcgis-server-system-requirements.htm
- System Design Strategies
  - http://www.wiki.gis.com/wiki/index.php/System_Design_Strategies
- ArcGIS System Design Certification
  - https://www.esri.com/training/catalog/5766cec2ba95f3e462a9f20d/enterprise-system-design-associate-10.3/

System Architecture Design

Activity Description

Esri Enterprise Advantage Program

Introduction:

The Customer has requested Environmental Systems Research Institute, Inc. (Esri) Professional Services to provide system architecture design consulting support. The quote below describes the scope of services, schedule, pricing, terms and conditions, and purchasing instructions.

Scope of Services:

Activity 1 – System Architecture Design Consulting Support

Esri will provide up to X hours of consulting services, including preparation and travel time, to validate requirements, lead discussions, and evaluate design alternatives. The purpose of the engagement is to determine an appropriate GIS architecture for the needs and business drivers identified during this activity.

This activity will be conducted over X consecutive business days onsite at Customer offices in Customer Location. It will be led by a senior Esri system architecture design consultant with active participation by appropriate Customer GIS, IT, operations, and business representatives. To help prepare for and facilitate the activity, Esri will provide preparatory materials prior to arriving onsite.

System Architecture Design

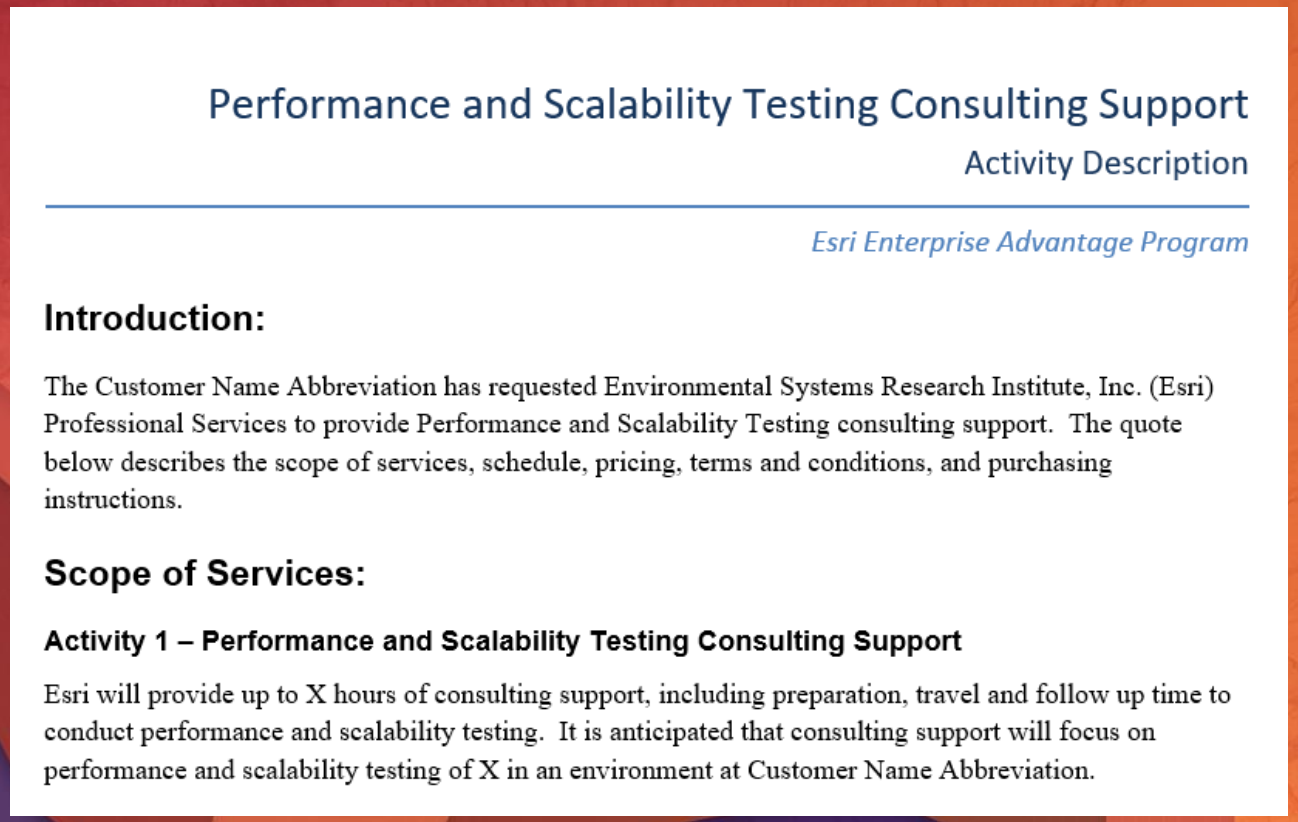
Development

Step 4 Development

- Build out and test your design
- Performance testing
  - Identify bottlenecks
  - Determine system capacity
  - Demonstrate your performance SLA
- Test multiple tiers
  - Application
  - GIS Services and data
  - Infrastructure: hardware and Software
- Use testing results to finalize your design for production

Step 4 Development Resources

- ArcGIS Enterprise: Performance and Scalability Best Practices
  - https://www.youtube.com/watch?v=9TSogIuA0Bo
- ArcGIS Server in development, staging, and production environments
  - http://server.arcgis.com/en/server/latest/administer/windows/arcgis-server-in-development-staging-and-production-environments.htm



Performance and Scalability Testing Consulting Support

Activity Description

Esri Enterprise Advantage Program

Introduction:

The Customer Name Abbreviation has requested Environmental Systems Research Institute, Inc. (Esri) Professional Services to provide Performance and Scalability Testing consulting support. The quote below describes the scope of services, schedule, pricing, terms and conditions, and purchasing instructions.

Scope of Services:

Activity 1 – Performance and Scalability Testing Consulting Support

Esri will provide up to X hours of consulting support, including preparation, travel and follow up time to conduct performance and scalability testing. It is anticipated that consulting support will focus on performance and scalability testing of X in an environment at Customer Name Abbreviation.

Performance and Scalability Testing Consulting Support

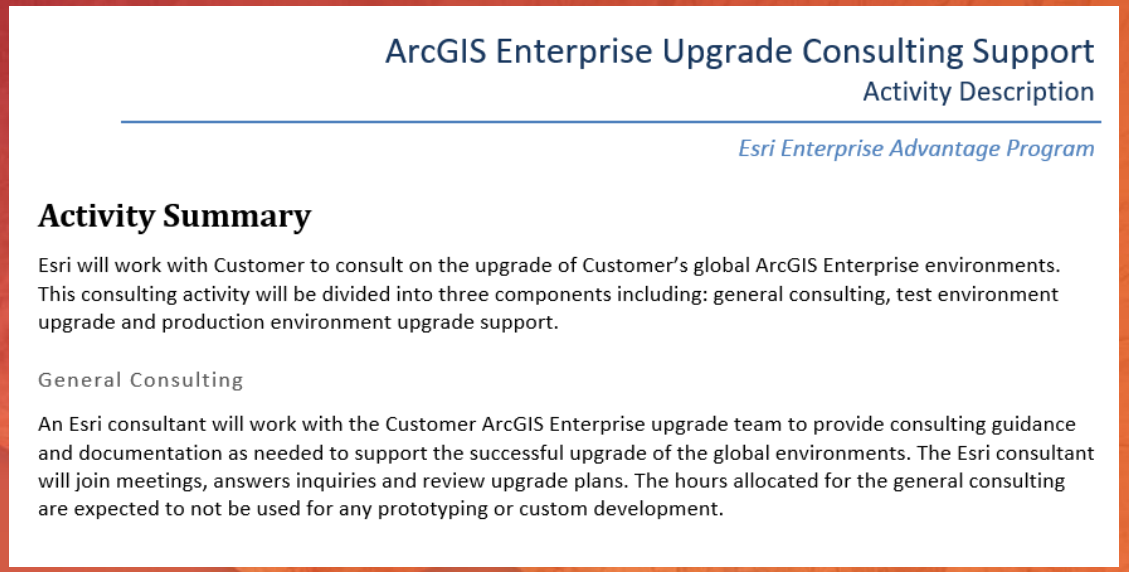
Deployment

Step 5 Deployment

- Need to carefully plan your production environment upgrade to minimize risk
- Follow Esri and IT best practices
- Create a detailed implementation plan
  - Incorporate testing results
- Inform users and promote resources which are available
- Ensure you have a rollback plan

Step 5 Deployment Resources

- ArcGIS Server Upgrade
  - http://server.arcgis.com/en/server/latest/get-started/windows/existing-arcgis-server-users.htm
  - http://server.arcgis.com/en/server/latest/get-started/windows/upgrade-arcgis-server.htm
- Portal for ArcGIS
  - http://server.arcgis.com/en/portal/latest/install/windows/upgrade-portal-for-arcgis.htm
- Disaster Recovery – webgisdr
  - http://server.arcgis.com/en/portal/latest/administer/windows/overview-backup-restore-web-gis.htm
  - http://server.arcgis.com/en/portal/latest/administer/windows/configure-disaster-recovery.htm



ArcGIS Enterprise Upgrade Consulting Support
Activity Description

Esri Enterprise Advantage Program

Activity Summary

Esri will work with Customer to consult on the upgrade of Customer's global ArcGIS Enterprise environments. This consulting activity will be divided into three components including: general consulting, test environment upgrade and production environment upgrade support.

General Consulting

An Esri consultant will work with the Customer ArcGIS Enterprise upgrade team to provide consulting guidance and documentation as needed to support the successful upgrade of the global environments. The Esri consultant will join meetings, answers inquiries and review upgrade plans. The hours allocated for the general consulting are expected to not be used for any prototyping or custom development.

ArcGIS Enterprise Upgrade Consulting Support

Operations

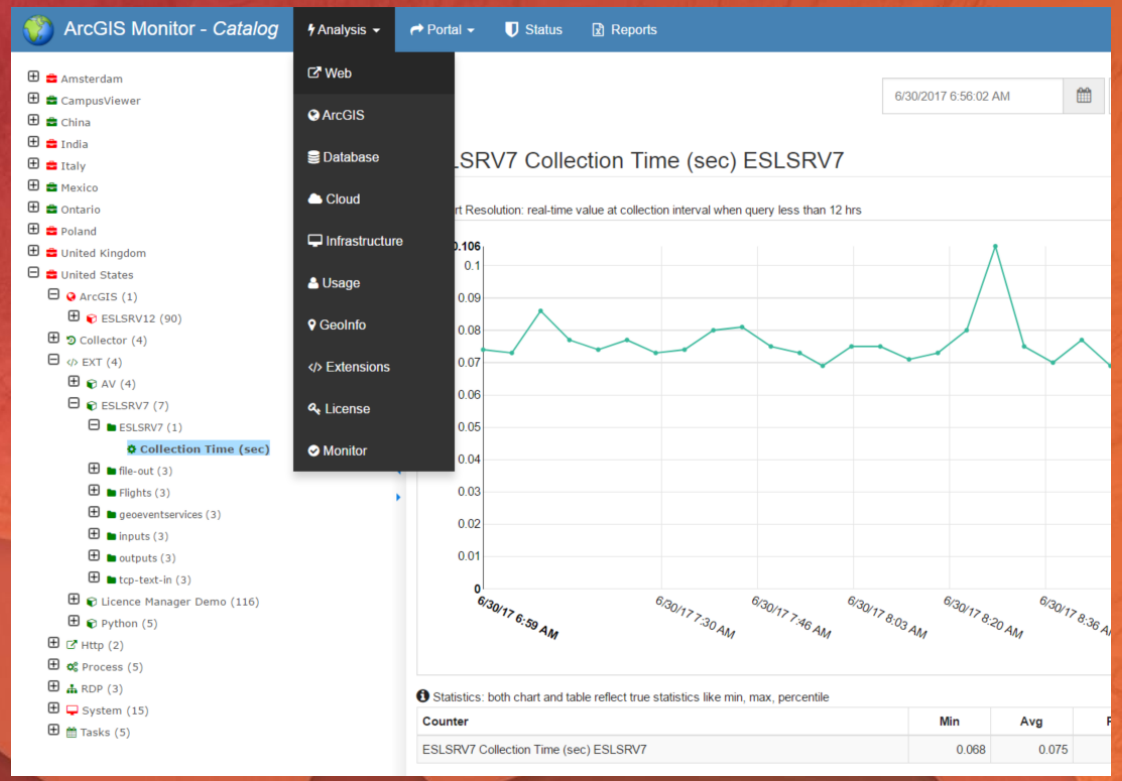
Operations
Planning
Requirements
Design
Development
Deployment

Step 6 Operations

- Monitor your environment
- Configuration validation
- Resource Utilization
- Usage Trends
- Performance SLA
- Uptime SLA
- Welcome feedback from users

Step 6 Operations Resources

- ArcGIS Monitor
  - https://systemmonitoring-emcs.esri.com/
- Usage Reports
  - http://server.arcgis.com/en/portal/latest/administer/linux/about-usage-reports.htm
- Logs
  - http://server.arcgis.com/en/server/latest/administer/windows/about-server-logs.htm
  - http://server.arcgis.com/en/portal/latest/administer/linux/about-portal-logs.htm



ArcGIS Monitor

The Upgrade Process

How Esri Services Can Help You

Consulting Support

ArcGIS Monitor Consulting Services

ArcGIS System Designer Consulting Services

ArcGIS System Test Consulting Services

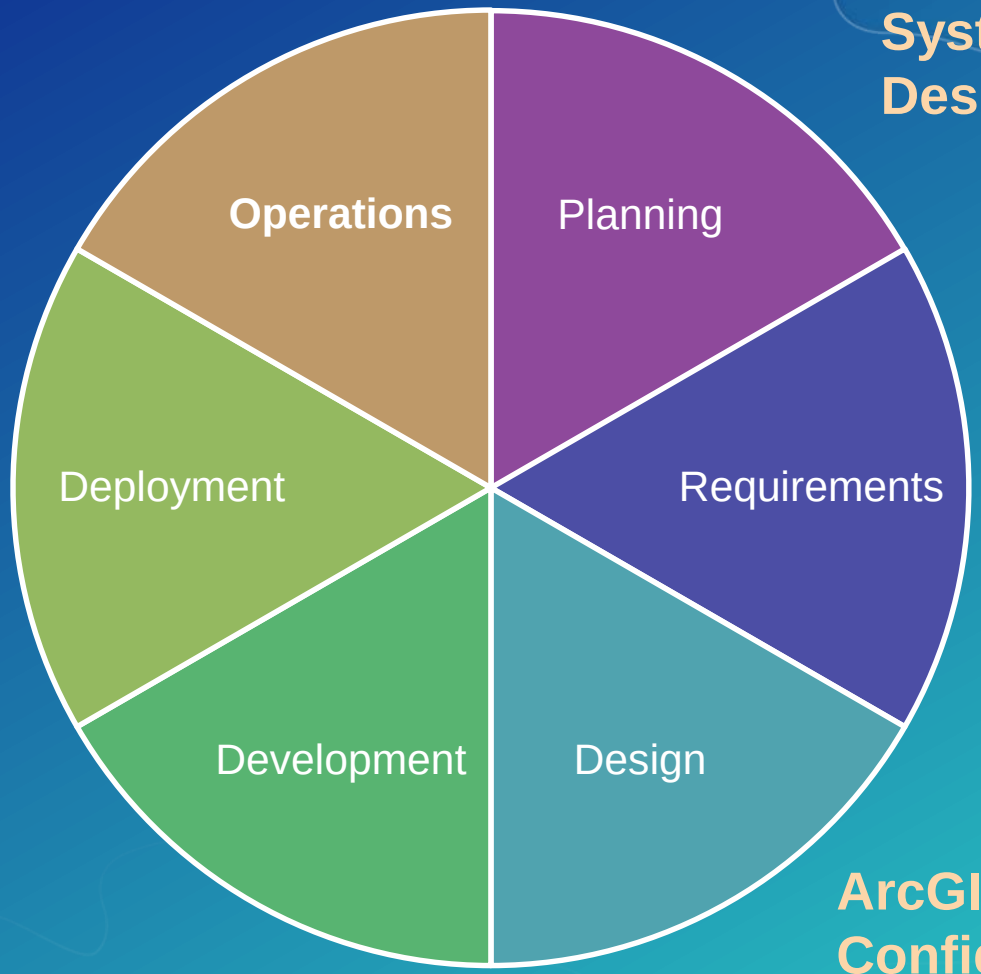
Consulting Support

Training*

System Architecture
Design Strategies

ArcGIS System Designer
Consulting Services

ArcGIS Monitor
Consulting Services



Deploying Portal for
ArcGIS

ArcGIS for Server: Site
Configuration and Administration

ArcGIS System Test
Consulting Services

*E-Learning also available with maintenance

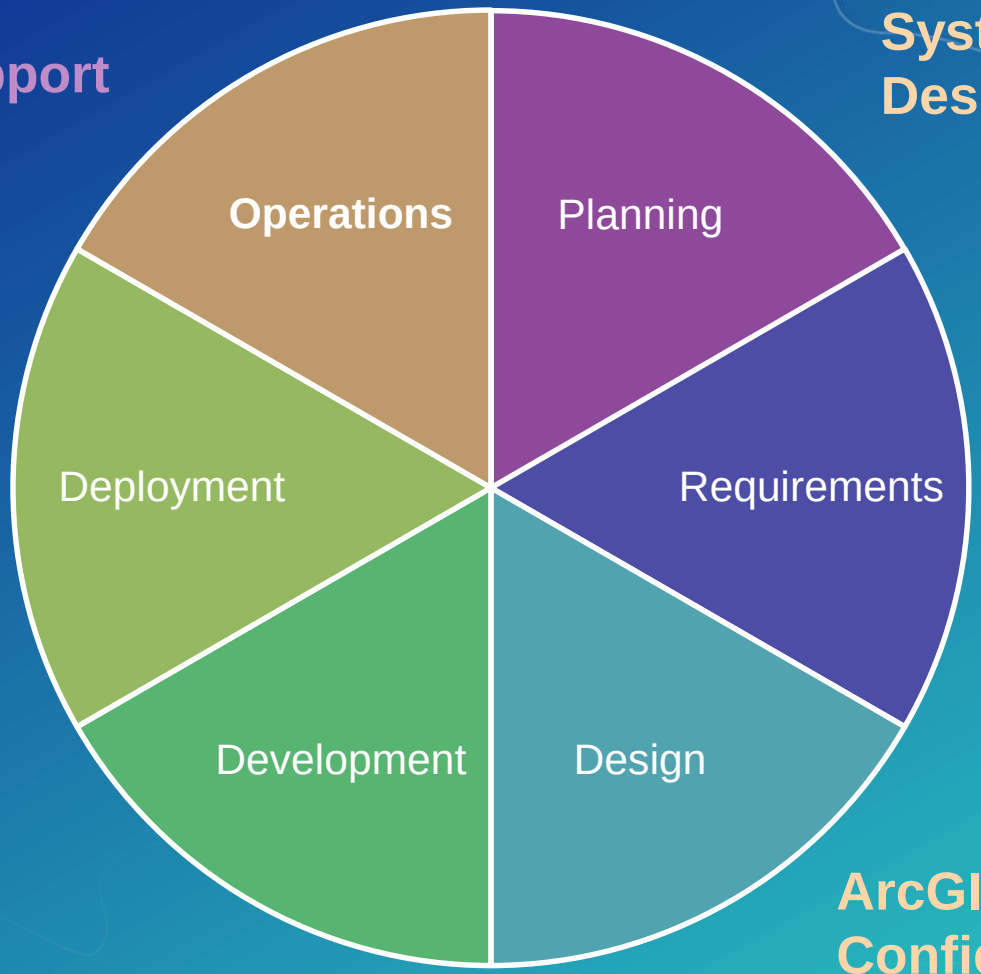
Consulting Support

Training*

Technical Support**

Premium Support

System Architecture
Design Strategies



ArcGIS System Designer
Consulting Services

ArcGIS Monitor
Consulting Services

Deploying Portal for
ArcGIS

ArcGIS for Server: Site
Configuration and Administration

ArcGIS System Test
Consulting Services

*E-Learning also available with maintenance
**Standard Support also available with maintenance

Maximize your investment with Esri

- Reach your enterprise GIS **vision**
- **Collaborate** with Esri experts
- Proactive **advice** and advocacy
- Further **enable** your organization

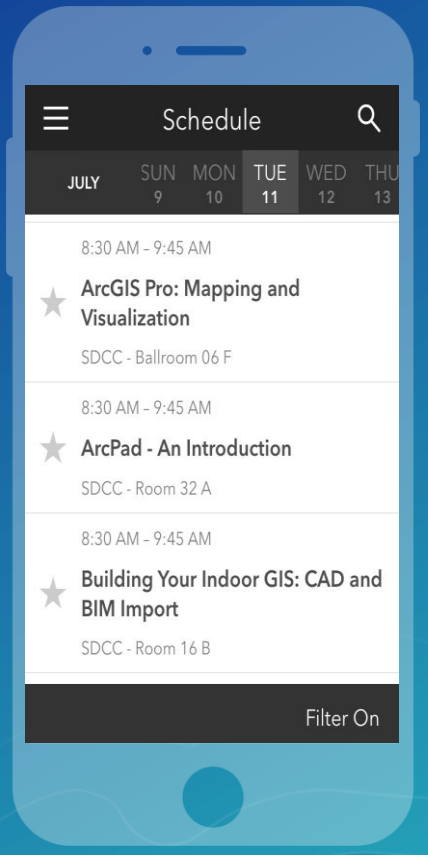
Additional Resources

- UC Sessions
  - Best Practices for Technology Change Management
  - Web GIS Architecture Deployment Options
  - ArcGIS Enterprise: Performance and Scalability Best Practices
    - Thursday, July 13, 3:15-4:30pm, Ballroom 06 E
- Esri Showcase
  - Esri Services
    - ArcGIS 10.5 Readiness Assessment
  - Launching ArcGIS 10.5
- Esri's YouTube Channel - https://www.youtube.com/user/esritv

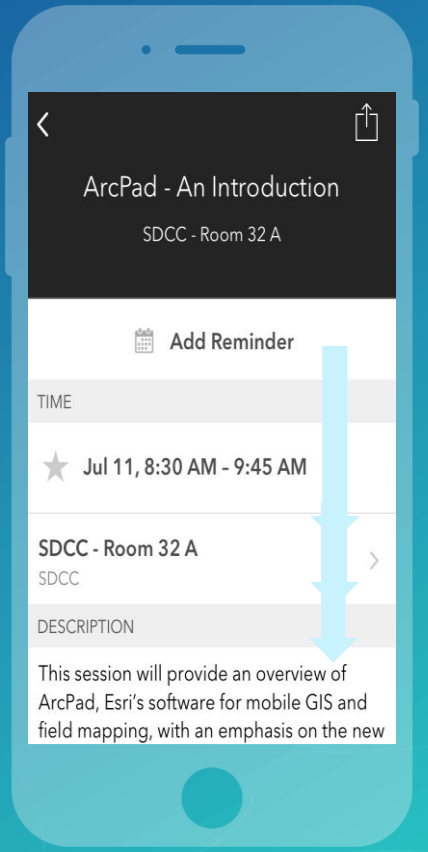
Please Take Our Survey on the **Esri Events App!**

Download the Esri Events app and find your event

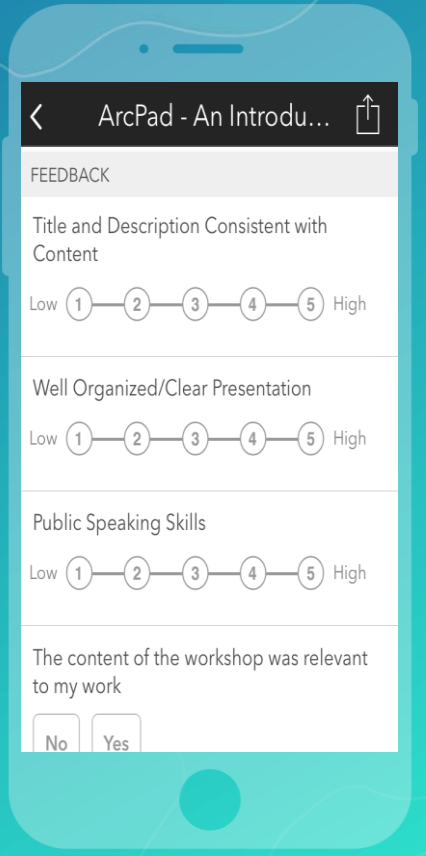
Select the session you attended



Scroll down to find the survey



Complete Answers and Select "Submit"



Thank you!

Any Questions?

Thomas Fair
tfair@esri.com

Ben Schaub
bschaub@esri.com

esri
THE
SCIENCE
OF
WHERE