ArcGIS Enterprise: Upgrade to 11.1 Guide

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Revision History

The table that follows summarizes the revision history of this document.

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# Introduction

## Purpose

The purpose of this guide is to provide ArcGIS administrators with a structured and reliable process to upgrade their ArcGIS Enterprise deployment to version 11.1. By following this guide, administrators will:

1. **Ensure compatibility** with new system features and requirements.
2. **Mitigate risks** associated with deprecated workflows.
3. **Maintain data integrity** and secure configurations.
4. **Minimize downtime** during the upgrade process.

**Validate operational health** of all components post-upgrade.

## Scope

This guide is applicable to upgrading ArcGIS Enterprise environments, including **Production**, **Staging**. It encompasses components such as:

* **Portal for ArcGIS**
* **ArcGIS Server**
* **ArcGIS Data Store**
* Including **Image Server** and **Web Adaptor**

The focus is on ensuring compatibility with system requirements, addressing deprecated workflows, maintaining data and configuration integrity, and achieving seamless functionality post-upgrade.

## Document Conventions

Table 1‑1 describes the conventions used in this documentation.

Table 1‑1: Document Conventions

| Convention | Meaning |
| --- | --- |
| **🛈** | Indicates a note that supplements the information in the current section or about the procedure. |
| ! | Indicates an important note related to the current section or procedure. |
|  | Indicates that a section or procedure needs to be repeated. |
| Text > Text > Text | The arrow symbol (>) is used for navigation paths (e.g., **Start** > **Programs** > **Adlib** > **Express** > **Express Server**). All navigation paths in this document assume that Windows is set to display Classic View. |

# About This Guide

This guide is designed as a step-by-step reference for ArcGIS Enterprise administrators tasked with upgrading to version 11.1. It includes:

* **Prerequisites**: Pre-upgrade checks and preparations.
* **Scripts & Automation**: Instructions for using pre-configured scripts and manual validations.
* **Component-Specific Steps**: Upgrade instructions for all ArcGIS Enterprise components.
* **Post-Upgrade Verification**: Testing, re-indexing, and backup validation.
* **References**: Links to official documentation for system requirements, deprecated features, and best practices.

# 11.1 Overview Planning

This guide provides a structured approach to upgrading ArcGIS Enterprise to version 11.1. It includes step-by-step instructions for pre-upgrade preparation, the upgrade process, and post-upgrade validation to ensure a smooth transition with minimal service disruptions.

**Estimated Time to Complete**

**Total ETA:** ~12 hours (±1 hour)

* **Portal for ArcGIS:** 7 hrs 30 mins
* **ArcGIS Server:** 1 hr 30 mins
* **ArcGIS Data Store:** 1 hr 10 mins
* **Image Server:** 1 hr
* **Web Adaptor:** 1 hr

**Prerequisites**

### Prerequisites

**Verify and Plan**:

* Enable **read-only mode** for the portal during the upgrade
  + Log into Portal Admin API (<https://dns/portal/portaladmin/>)
  + Select Mode
  + Select Update
  + Change Read Only from False to True
  + Select Update
* Account for workflows involving **Insights**, **TileCache**, and **Enterprise Metrics**.
* Review automated/custom processes (e.g., **WebGIS DR**, **Enterprise Reporter**, **Syslog Parser**).

**Backup and Validate**:

* Perform a **full system backup**, including Portal, Server, Data Store, and federated components.
* Verify compatibility of all custom configurations and integrations.

**Script Preparation**:

* Move upgrade .cmd scripts to target environment (**F:\PRTUpgradeScripts** or **F:\SVRUpgradeScripts, etc**)
* Validate that all folder directories and software dependencies are correct before executing scripts.

**Review AGS Deploy Folder**:

* Copy the necessary software from your file share:

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* Create a local folder: **F:\AGSDeploy\11-1** for easy access during installation.
* **Configuration Process**: These upgrade scripts are mainly installing scripts, although we do have some configuration scripts, I didn’t want to automate the configuration portion. I wanted to avoid automating configuration steps in scripts to allow manual oversight. This ensures critical checks for new dependencies (e.g., **.NET 6** for SOI tools).
* **Dependency Validation**: Check that all required components are compatible with version 11.1.

### Administrative URLs and Service Account Details for ArcGIS Enterprise Upgrade

Portal for ArcGIS

* Production: <https://localhost.domain:7443/arcgis/portaladmin/>
* Staging: <https://localhost.domain:7443/arcgis/portaladmin/>

Hosting Server

* Production: <https://localhost.domain:6443/arcgis/admin/>
* Staging: <https://localhost.domain:6443/arcgis/admin/>

ArcGIS Data Store

* Production: <https://localhost.domain:2443/arcgis/datastore/>
* Staging: <https://localhost.domain:6443/arcgis/admin/>

Image Server

* Production: <https://localhost.domain:6443/arcgis/admin/>
* Staging: <https://localhost.domain:6443/arcgis/admin/>

Web Adaptor

* Production: https://localhost.domain /webadaptorname/webadaptor/
* Staging: https://localhost.domain /webadaptorname/webadaptor/

**Service Account Credentials**

To complete the upgrade process, ensure you have the **Service Account username and password** readily available.

### Preparation for ArcGIS Enterprise Upgrade to Version 11.1

[Retirement notices](https://enterprise.arcgis.com/en/get-started/latest/windows/what-s-new-in-arcgis-enterprise.htm#ESRI_SECTION1_A7C8187D4F714EDB9C71C5A76D500DBD)

1. ArcMap-Based Workflows:
   1. ArcMap-based workflows are no longer supported in ArcGIS Enterprise 11.x. The runtime has transitioned to ArcGIS Pro-based runtime. See: [Learn more about your options to migrate services](https://enterprise.arcgis.com/en/server/latest/publish-services/windows/migrating-services-to-the-arcgis-pro-service-runtime.htm) to the ArcGIS Pro runtime.
2. Configurable Apps:
   1. Verify if your applications built on **ArcGIS Configurable Apps templates** are decommissioned.
   2. Re-create these apps using **ArcGIS Instant Apps**, **StoryMaps**, **Experience Builder**, **Web AppBuilder**, or **Dashboards**.
   3. Check retired templates for each release in their respective [What's new in Portal](https://links.esri.com/arcgis-enterprise-portal/what-s-new) topics.
3. Confirm that all machines hosting ArcGIS Enterprise components meet the minimum system requirements. See: [ArcGIS Enterprise 11.1 system requirements](https://enterprise.arcgis.com/en/system-requirements/latest/windows/arcgis-enterprise-overall-system-requirements.htm)
   1. **Disk Space**: Ensure at least 2.5x the space of current directories is available.
   2. **Memory**: ArcGIS Web Adaptor (IIS) requires a minimum of 8 GB RAM, with additional memory based on usage.
4. **Custom Scripts**:
   * Check for deprecated functions in ArcGIS API or custom scripts, especially those relying on ArcMap-based workflows.
   * Test Python v2 scripts in ArcGIS Pro and update them as needed.
5. Use the following tools:
   1. **WebGIS DR Utility**: Export ArcGIS Enterprise deployment.
   2. **Backup Utility**: Backup ArcGIS Server.
   3. **Backupdatastore Utility**: Backup each data store.
   4. **Portal Content**: Back up the arcgisportal content directory and any extensions.
6. Copy the **advanced portal options JSON script** for the current deployment. Use this script for configuration in the upgraded environment.
7. Use the **WebGIS DR** tool to back up:
   * **Backup Command:**

f:

cd F:\ArcGIS\Portal\tools\webgisdr

.\webgisdr.bat --export –file "F:\ArcGIS\Backup\egisfull.properties"

* + **Restore Command:**

f:

cd F:\ArcGIS\Portal\tools\webgisdr

.\webgisdr.bat --import --file “F:\ArcGIS\Backup\egisfull.properties”

1. **Database Backup**: Back up all geodatabases, particularly enterprise geodatabases on SQL Server.
2. **Notification and Communication**

* Notify end-users about potential downtime.
* Share the upgrade timeline with stakeholders.
* Sample Email Below:

**Subject:** Action Required: Prepare for Upgrade to ArcGIS Enterprise 11.1

Dear [Team/Colleagues/ArcGIS Users],

We are excited to announce the upcoming upgrade of our **ArcGIS Enterprise environment from version 10.8 to 11.1**, planned for **[Insert Upgrade Date]**. This upgrade introduces modernized functionality, enhanced security, and new tools to improve your workflows. However, some legacy features and workflows will no longer be supported in ArcGIS Enterprise 11.1.

To ensure a seamless transition and avoid disruptions, we need your assistance to review, migrate, and update any applications, services, or workflows that rely on deprecated functionalities. Below are the key details, required actions, and resources to help you prepare for the upgrade.

**Key Changes in ArcGIS Enterprise 11.1**

1. **End of Support for ArcMap-Based Workflows:**
   * Publishing services from ArcMap or using ArcMap-based runtime is no longer supported.
   * Impacted workflows include:
     + Publishing .sd files from ArcMap to ArcGIS Server.
     + Administering services created using ArcMap.
     + Consuming ArcObjects SOEs and SOIs built on older .NET Framework versions.
   * **Action:** Migrate services to ArcGIS Pro-based runtime.
     + **Guide:** Manually Migrating Services from ArcMap to ArcGIS Pro.
2. **Retirement of Legacy Web Apps:**
   * Older apps using ArcGIS API for JavaScript 3.x are retired. These include:
     + Classic Esri Story Maps → Migrate to **ArcGIS StoryMaps**.
     + Configurable Apps → Use **ArcGIS Instant Apps**.
     + Presentation for Map Viewer Classic → Use **Exhibit Instant App**.
   * **Action:** Rebuild existing apps using modern templates.
     + **Resources:** ArcGIS Instant Apps Migration Tools.
3. **New System Requirements:**
   * **.NET 6 is required** for Web Adaptor (IIS) and extensions (SOEs, SOIs).
   * Minimum **8 GB of memory** is required for Web Adaptor.
   * **Action:** Verify system readiness.
     + **Reference:** [ArcGIS Web Adaptor 11.1 System Requirements](https://enterprise.arcgis.com/en/get-started/11.1/windows/what-s-new-in-arcgis-enterprise.htm).
4. **New Features:**
   * Enhanced search with *Search using related terms* for broader and smarter results.
   * Custom webhooks for automation directly in the portal.
   * Advanced symbol customization and visualization options in Map Viewer.
   * Cluster and pie chart styles for aggregated data.
   * Improved 3D visualization with weather effects and OpenStreetMap buildings.

**Action Items for Users**

1. **Review and Migrate Workflows:**
   * Identify services and apps that rely on deprecated features.
   * Migrate ArcMap-based services to ArcGIS Pro-based runtime.
   * Rebuild deprecated web apps using modern alternatives.
2. **Test and Validate:**
   * Test your workflows in the **pre-production environment** (available starting **[Insert Date]**).
   * Validate migrated services and apps for compatibility with 11.1.
3. **Verify System and Software Requirements:**
   * Ensure .NET 6 and other prerequisites are installed on affected machines.
   * Confirm system readiness by reviewing the 11.1 System Requirements.
4. **Leverage New Features:**
   * Explore enhancements in Map Viewer, Dashboards, and Experience Builder to optimize workflows.
   * Utilize new clustering, animation, and visualization options in Map Viewer.

**Timeline and Deadlines**

* **[Insert Date]:** Deadline to complete migration of services and apps.
* **[Insert Date]:** Pre-production testing window closes.
* **[Insert Upgrade Date]:** Upgrade to 11.1 in the production environment.

**Resources for Migration and Testing**

* **ArcGIS 11.1 Deprecation Notice:** Review Deprecated Features
* **Migration Guides and Tools:**
  + Migrating Services to ArcGIS Pro Runtime
  + Using ArcGIS StoryMaps
  + ArcGIS Instant Apps Documentation
* **What’s New in 11.1:** [Portal for ArcGIS 11.1 Updates](https://enterprise.arcgis.com/en/portal/11.1/administer/windows/what-s-new-in-portal-for-arcgis.htm)

Your collaboration is critical to ensuring a successful upgrade. Please review and complete the necessary steps by the provided deadlines. If you have questions or need assistance, contact the GIS Support Team at **[email address]**.

Thank you for your attention and cooperation as we transition to ArcGIS Enterprise 11.1 and unlock new possibilities for our GIS environment!

Best regards,  
[Your Name]  
[Your Title/Role]  
[Contact Information]

1. Check database versions (e.g., MSSQL Server) for compatibility. Upgrade databases before upgrading ArcGIS Enterprise if necessary. See: [Supported databases](https://enterprise.arcgis.com/en/system-requirements/latest/windows/arcgis-server-system-requirements.htm#:~:text=requirements%20for%20details.-,Supported%20databases,-See%20the%20requirements)
2. Verify permissions for the service account across the deployment:
   * Ensure the service account has **domain-level administrative privileges** with a **static password**.
   * Check the permissions in ArcGIS Folder in the F Drive (F:\ArcGIS\Python27).
   * Right Click the ArcGIS folder --> Properties --> Security --> Verify Service Account (Or add it)
   * Even if Service Account is present, you will want to reset those permissions again
   * Click Advanced --> Select the Service Account --> Click Change Permissions --> Select the Service Account (Again)
   * Select the Box "Replace All Child Object Permission Entries from this Object" --> Select Apply
   * Wait a few minutes to let finish --> Click ok and leave the dialog window.
   * Restart the Service
3. **Folder-Level Permissions Checklist**:

**ArcGIS Server Machine**:

* + F:\arcgisserver
  + F:\ArcGIS
  + F:\Python 27

**Portal for ArcGIS Machine**:

* + F:\arcgisportal
  + F:\Program Files\ArcGIS

**ArcGIS Data Store Machine**:

* + F:\arcgisdatastore
  + F:\ArcGIS

1. **Software and Licensing**
2. Download the required versions of:
   * Portal for ArcGIS
   * ArcGIS Server
   * ArcGIS Data Store
   * ArcGIS Web Adaptor
   * ArcGIS Insights
   * ArcGIS Web styles
   * ArcGIS License Manager
   * Licensing files from My Esri.
3. **Indexer Status**:
   * Navigate to https://domain.com/webadaptorname/portaladmin.
   * Check the index status via Home > System > Indexer > Status.
   * Re-index if values are out of sync.

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1. **Snapshot Machines**: Take system snapshots for all machines as a precautionary measure.
2. **Validate Federation and Data Stores**:
   * Use Validate Servers and Validate ArcGIS Data Store.
3. **Web Adaptors**: Record the names of all Web Adaptors, as the same names must be used post-upgrade.
4. **Web Contexts**: Document any assigned web contexts for the portal and server.

**Portal Admin**: {"WebContextURL":"https://gis.com/portal","privatePortalUrl":"https://portalhost.domain:7443/arcgis"}

**Server Admin**

{"WebContextURL": "https://gis.com/server"}

**Image Admin**

{"WebContextURL": "https://gis.com/image"}

1. If you use ArcGIS Living Atlas of the World content in maps or apps, confirm that the items you use are not in a [mature support or deprecated status](https://enterprise.arcgis.com/en/portal/latest/use/living-atlas-content-life-cycles.htm#GUID-476FEB6C-FD1A-47BD-B744-026619FCB059) before upgrading. See the [ArcGIS Living Atlas content life cycles and updates](https://enterprise.arcgis.com/en/portal/latest/use/living-atlas-content-life-cycles.htm#ESRI_SECTION1_01F61B2E58D74352B9FD2AAD303512C9).
2. During the upgrade, your deployment (Portal, ArcGIS Server sites federated with the portal, ArcGIS Data Store, and ArcGIS Pro if licensed through the portal) will be offline.
3. Ensure the following steps are completed before proceeding:

* **Snapshot Machines**: Take a snapshot of all involved machines for backup and rollback purposes.
* **Record Web Adaptor Names**: Document the names of all Web Adaptors; they must be reinstalled with the same names.
  + portal
  + server
  + image
* **Multi-Machine Deployment**: List all machine names involved in the deployment for reference during the upgrade.
  + **Core Servers**  
    list your core servers below
* SSL Certificates:

**Portal**

* + List your ssl certs

**Server**

* + List your ssl certs

1. Security Configuration:

* Properties: {"disableServicesDirectory":**false**,"enableAutomaticAccountCreation":**true**,"webgisServerTrustKey":"randomnumbers=","allowedProxyHosts":"(.\*).arcgis.com,(.\*).com.org"}
* User Store Configuration:

{

"type": "WINDOWS",

"properties": {

"userPassword": "randomstuff",

"caseSensitive": "false",

"userSurnameAttribute": "sn",

"userGivenNameAttribute": "givenName",

"userEmailAttribute": "mail",

"user": "domain\\serviceaccountPortal",

"userFullnameAttribute": "cn",

"isPasswordEncrypted": "true"

}

}

* Group Store Configuration:

{

"type": "WINDOWS",

"properties": {

"userPassword": "randomstuff",

"user": " domain\\serviceaccountPortal ",

"isPasswordEncrypted": "true"

}

}

* CORS URLs: list your cors urls

# 11.1 Components Upgrade

### Upgrade Portal for ArcGIS

1. Map Viewer Transition:
   * If upgrading from Portal for ArcGIS 10.8.1 or 10.9 with Map Viewer Beta installed, it will be automatically removed.
   * ArcGIS Enterprise 11.x includes the new Map Viewer alongside Map Viewer Classic.
2. Upgrade Duration:
   * The upgrade time depends on factors like portal content volume, registered accounts, customizations, and machine performance.
   * Patching must be done before post-upgrading, as some patches address installation issues.
3. Browser Cache:
   * Clear the browser cache, including cookies, on all machines where the portal will be accessed.

**Google Chrome:**

* + Open Google Chrome.
  + Click on the three vertical dots (menu) in the top-right corner.
  + From the dropdown menu, select More tools > Clear browsing data.
  + In the Clear browsing data window, select Basic or Advanced tab (Advanced gives more options).
  + Choose the time range. To clear everything, select All time.
  + Check the boxes for Cookies and other site data and Cached images and files.
  + Click Clear data.
  + Close and reopen the browser.

**Microsoft Edge:**

* + Open Microsoft Edge.
  + Click on the three horizontal dots (menu) in the top-right corner.
  + From the dropdown menu, select Settings.
  + In the left sidebar, click Privacy, search, and services.
  + Under the Clear browsing data section, click Choose what to clear.
  + Select the time range (e.g., All time).
  + Check the boxes for Cookies and other site data and Cached images and files.
  + Click Clear now.
  + Close and reopen the browser.
  + Clearing browser cache and cookies will log you out of websites and remove some site preferences (such as language settings or login information), but it can help resolve issues with outdated content or login errors. Cached information from the previous version may cause display issues or sign-in failures.

1. Run the Portal Setup File (If you are doing it manually):

* Execute the Setup.exe file as an administrator.
* Do not interrupt the installation process.

1. Use Automation Scripts:
   * Run the upgrade scripts in the order specified by their numbering.
   * Scripts ensure automation and logging of the upgrade process.

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1. **Open PowerShell as Administrator**

f:

cd F:\PRTUpgradeScripts

* + Input the following commands to navigate to the upgrade script directory.
  + Run the following scripts sequentially, allowing each to finish before proceeding to the next.

1. **Portal Upgrade**

.\1\_PRT\_Install.cmd

* **Production:** 4 hrs 18 mins
* **Staging:** 1 hr 24 mins

1. **Insights Upgrade**

.\2\_PRT\_Insights\_Install.cmd

* **Production**: 2 mins
* **Staging**: 2 mins

1. **Web Style Upgrade**

.\3\_PRT\_WebStyle\_Install.cmd

* **Production**: 13 mins
* **Staging**: 10 mins

1. **Patches Upgrade**

.\4\_PRT\_Patches.cmd

* **Production:** 2 hrs 12 mins
* **Staging:** 1 hr 50 mins

1. After the portal installation completes, a browser page will launch to import the license file. Have the license file (.json) ready for upload.
2. Navigate to the Portal Administrator Directory via Chrome or Edge: <https://FDQN:7443/arcgis/portaladmin/>
3. Click **Continue Portal Upgrade**.
4. This triggers the upgrade process and creates backups of your portal's content, site information, and security settings.

* Estimated Time: ~45 minutes

1. Complete the deployment upgrade using the license file.
2. **Web Adaptor Upgrade**

* Install required pre-installation software. Install Web Deploy before the .NET Bundle.
  1. [Web Deploy 4.x](https://www.microsoft.com/en-us/download/details.aspx?id=106070)
  2. [.NET Bundle 8.x](https://dotnet.microsoft.com/en-us/download/dotnet/8.0)

1. Uninstall the existing portal's web adaptor.
2. Install the new web adaptor (matching the new version).
3. Now it’s time to configure the Web Adaptor, but because of our IIS environment, you will need to turn off windows authentication in the IIS for Portal and enable anonymous authentication. You will leave it like this for the entire upgrade process, once done you can turn back on windows authentication in IIS.
4. Navigate in Chrome or Edge (Still in web adaptor machine): <https://localhost.domain/webadaptorname/webadaptor/>
   * E.g. https://webadaptor.com/portal/webadaptor/
5. Input the following details during configuration:
   * **Portal Name (FDQN)**: localhost.domain (you don’t need https)
   * **Username/Password**: Administrator credentials
   * **Settings**: Check **Enable administrative access to your site through the web adaptor**.
6. Verify Access
7. Confirm you can log in to the portal using the Web Adaptor URL: https://webadaptorhost.domain.com/webadaptorname/home
8. If prompted with a **post-upgrade steps required** dialog, click OK to proceed.
   * Tasks include:
     1. Upgrading **ArcGIS Living Atlas of the World** content.
     2. Re-indexing portal content.

* Updating associations between portal machines (if in a highly available deployment).

### Upgrade the ArcGIS Server

1. Clear Browser Cache:

* Before starting, clear the browser cache (including cookies) on all browsers that will access the ArcGIS Server Manager interface.

1. Unlike the portal, if your ArcGIS Server site is in **read-only mode**, it will be switched to **editable mode** during the upgrade.
2. Once all machines in your site have been successfully upgraded, you can manually switch back to read-only mode.
3. **Do NOT unfederate** any ArcGIS Server federated with a portal during the upgrade. Unfederating will disrupt portal deployment, preventing users from accessing, sharing, or using ArcGIS Server services.
4. Install **.NET 6 runtime** (windowsdesktop-runtime-6.x-win-x64) before the upgrade if using SOE tools.
   * [Download .NET 6](https://dotnet.microsoft.com/en-us/download/dotnet/6.0).
5. Run the Server Setup File (If you are doing it manually)
   * Execute the Setup.exe file as an administrator.
   * Do not interrupt the installation process.
6. Run the upgrade scripts in the order specified by their numbering.

* Scripts ensure automation and logging of the upgrade process.

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1. **Open PowerShell as Administrator**

f:

cd F:\SVRUpgradeScripts

* Execute the scripts in sequence. Allow each to complete before proceeding to the next.

1. **Server Upgrade**

.\1\_SVR\_Install.cmd

* **Production:** 30 mins
* **Staging:** 25 mins

1. **Patches Upgrade**

.\2\_SVR\_Patches.cmd

* **Production:** 40 mins
* **Staging:** 15 mins

1. **SQL Driver Upgrade**

.\3\_SVR\_SQL.cmd

* **Production:** 1 min
* **Staging:** 1 min

1. Open the Software Authorization Wizard:
   * Reauthorize ArcGIS Server using a new license file.
2. Offline Authorization:
   * If the server is offline, generate an authorize.txt file using the wizard.
   * Upload the authorize.txt file to My Esri or email it to generate an .ecp file.
   * Return to the wizard and upload the .ecp file to complete authorization.

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1. **Complete the Upgrade**
2. Navigate to: https://fdqn:6443/arcgis/admin/
3. Launch the **'Continue the Upgrade'** page.
   * **Estimated Time**: ~30 minutes

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1. Uninstall the Existing Web Adaptor.
2. Install the New Web Adaptor:
   * Use the same name as the previous web adaptor.
3. Now it’s time to configure the Web Adaptor, but because of our IIS environment, you will need to turn off windows authentication in the IIS for Portal and enable anonymous authentication. You will leave it like this for the entire upgrade process, once done you can turn back on windows authentication in IIS.
4. Navigate in Chrome or Edge (Still in web adaptor machine): <https://localhost.domain/webadaptorname/webadaptor/>
   * E.g. <https://webadaptor.com/portal/webadaptor/>
5. Input the following details:
   * **FDQN for GIS Server**: localhost.domain (you don’t need https)
   * **Username/Password**: Administrator credentials
   * **Settings**: Check **Enable administrative access to your site through the web adaptor**.
6. Validate ArcGIS Server
7. Verify that the **ArcGIS Server Manager interface** is accessible via the Web Adaptor: https://webadaptorhost.domain.com/webadaptorname/manager
8. Log in using **portal credentials**:

* Confirm that the portal **OAuth redirect** is present, indicating successful federation.

### Upgrade the ArcGIS Data Store

1. Run the DataStore Setup File (If you are doing it manually)
   * Execute the Setup.exe file as an administrator.
   * Do not interrupt the installation process.
2. Run the upgrade scripts in the order specified by their numbering.
3. Scripts ensure automation and logging of the upgrade process.

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1. Clear Browser Cache:
2. Clear the browser cache (including cookies) on all browsers that will access the ArcGIS Data Store or ArcGIS Server Manager.
3. **Open PowerShell as Administrator**
4. Input the following commands:

f:

cd F:\ADSUpgradeScripts

1. Execute the scripts in sequence. Allow each to finish before moving to the next.
2. **Data Store Upgrade**

.\1\_ADS\_Install.cmd

**Production:** 15 mins

**Staging:** 10 mins

1. **Patches Upgrade**

.\2\_ADS\_Patches.cmd

**Production:** 5 mins

**Staging:** 5 mins

1. Continue the Upgrade in the Browser:
2. Navigate to: https://fdqn:2443/arcgis/datastore
3. Complete the upgrade process.
4. Estimated Time: ~45 mins (Production).
5. Verify Validation:
   * Open the **ArcGIS Server Manager** and validate that the Data Store connects and operates correctly.

### Upgrade the ArcGIS Image Server

1. Clear Browser Cache:
   * Clear the browser cache (including cookies) on all browsers that will access the ArcGIS Image Server or ArcGIS Server Manager.
2. Federation Warning:
   * **Do NOT unfederate** any ArcGIS Server federated with a portal during the upgrade. Unfederating will disrupt portal deployment, preventing users from accessing, sharing, or using ArcGIS Server services.
3. Install .NET 6:
   * Install **.NET 6 runtime** (windowsdesktop-runtime-6.x-win-x64) before the upgrade if using SOE tools.
     1. [Download .NET 6](https://dotnet.microsoft.com/en-us/download/dotnet/6.0).

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1. **Open PowerShell as Administrator**
2. Input the following commands:

f:

cd F:\IMGUpgradeScripts

1. Execute the scripts in sequence. Allow each to finish before moving to the next.
2. **Image Server Upgrade**

.\1\_IMG\_Install.cmd

* + **Production**: 30 mins
  + **Staging**: 25 mins

1. **Patches Upgrade**

.\2\_IMG\_Patches.cmd

* + **Production**: 40 mins
  + **Staging**: 15 mins

1. **SQL Driver Upgrade**

.\3\_IMG\_SQL.cmd

* + **Production**: 1 min
  + **Staging**: 1 min

1. Open the Software Authorization Wizard:
   * Reauthorize ArcGIS Server with the new license file.
2. Offline Authorization:
   * If the server is offline, generate an authorize.txt file using the wizard.
   * Upload the authorize.txt file to My Esri or email it to generate an .ecp file.
   * Return to the wizard and upload the .ecp file to complete authorization.
3. Finalize Authorization:

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* + Select **"I have received an authorization file and now ready to finish the authorization process."**
  + Browse to your .ecp file and click **Next**.
  + Ensure the .ecp file was generated from the **Image Server .prvc file**.
  + Upload the .ecp file for the **hosting** server as well.

1. Navigate to: https://fdqn:6443/arcgis/admin/
2. Launch the **'Continue the Upgrade'** page.

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1. Uninstall the Existing Web Adaptor.
2. Install the New Web Adaptor.
   * Use the same name as the previous web adaptor.
3. Now it’s time to configure the Web Adaptor, but because of our IIS environment, you will need to turn off windows authentication in the IIS for Portal and enable anonymous authentication. You will leave it like this for the entire upgrade process, once done you can turn back on windows authentication in IIS.
4. Navigate in Chrome or Edge (Still in web adaptor machine): <https://localhost.domain/webadaptorname/webadaptor/>
   * E.g. <https://webadaptor.com/portal/webadaptor/>
5. Input the following details:

* **FDQN for Image Server**: localhost.domain (you don’t need https)
* **Username/Password**: Administrator credentials
* **Settings**: Check **Enable administrative access to your site through the web adaptor**.

1. Validate ArcGIS Server
2. Verify that the **ArcGIS Server Manager interface** is accessible via the Web Adaptor: https://webadaptorhost.domain.com/webadaptorname/manager
3. Web Adaptor Patch:Apply the single web adaptor patch manually.

* **Estimated Time**: 2 minutes.

### Post-Upgrade Validation

1. Disable **read-only mode** for the portal
   * Log into Portal Admin API (<https://dns/portal/portaladmin/>)
   * Select Mode
   * Select Update
   * Change Read Only from True to False
   * Select Update
2. Portal Home Validation
   * Ensure you turned on Windows Authentication for Portal in IIS
   * Ensure users can log in and content is accessible.
   * Check sharing and security settings.
3. Validate ArcGIS Server in Portal
4. Verify that all services are published and accessible within the portal.
5. Navigate to the Portal Admin interface: https://fdqn:7443/arcgis/portaladmin/
   * Check the index status and re-index if out of sync.
   * Validate Data Stores
6. Use the **describedatastore** command in ArcGIS Server Manager to confirm all data stores are properly configured.
   * Revalidate Federation
7. Ensure federation between ArcGIS Server and Portal is intact by checking federation settings in Portal Admin.
   * Verify Web Adaptor and SSO Functionality
8. Confirm that web adaptors and Single Sign-On (SSO) configurations are working as expected.
   * Check Logs and System Health
9. Review logs for errors or warnings and ensure all components are operating as expected.
   * Notify End-Users and Update Documentation
10. Inform users that the upgrade is complete.
11. Provide updated documentation or instructions as necessary.
    * Restore Portal Customizations
12. Restore portal customizations manually.
    * **Do NOT replace previous version files directly**, as this can disrupt the deployment.
    * Re-add custom behaviors manually to avoid adverse effects.
    * Review Security with Server and Portal Scan Scripts
13. Run serverScan.py and portalScan.py scripts to ensure security best practices are followed post-upgrade.
    * Review Post-Upgrade Considerations
14. Carefully review the Considerations After Upgrading Portal for ArcGIS.
    * Test Backups
15. Use the **WebGIS DR tool** to perform a test backup and ensure backup functionality in the new environment.
    * Full Functional Testing
16. Conduct comprehensive functional testing based on inventories and stakeholder requirements.

* Ensure each testing participant has a detailed test plan to validate all required functionalities.

### Upgrade Additional ArcGIS Server Sites

1. **Repeat the Upgrade Process for Each Federated Server**
2. For any additional federated servers, repeat the upgrade process as detailed below. Common server types include:

* [ArcGIS GIS Server or ArcGIS Image Server sites](https://enterprise.arcgis.com/en/server/latest/install/windows/upgrade-arcgis-server.htm)
* [ArcGIS GeoEvent Server](https://enterprise.arcgis.com/en/geoevent/latest/install/windows/upgrade-geoevent-server.htm)
* [ArcGIS GeoAnalytics Server](https://enterprise.arcgis.com/en/server/latest/install/windows/upgrade-arcgis-server.htm#ESRI_SECTION1_9AAA13451A3849429E15DB492B026BE7)
* [ArcGIS Notebook Server](https://enterprise.arcgis.com/en/notebook/latest/install/windows/upgrade-arcgis-notebook-server.htm)
* [ArcGIS Mission Server](https://enterprise.arcgis.com/en/mission/latest/server/windows/server-install-upgrade-mission-server.htm)
* [ArcGIS Workflow Manager](https://enterprise.arcgis.com/en/workflow/latest/install/windows/existing-workflow-manager-server-users.htm)
* [ArcGIS Knowledge Server](https://enterprise.arcgis.com/en/knowledge/latest/introduction/upgrade-arcgis-knowledge-server.htm)

1. **Upgrade Steps for Each Federated Server**
2. Clear Browser Cache

* Clear browser cache (including cookies) before starting the upgrade.

1. Run the Server Installation File

* Execute the server installation file (.exe) as an administrator.
* A license file will be required after installation.

1. Continue the Upgrade in the Browser

* Navigate to the server's administration URL and complete the upgrade process.

1. Uninstall Existing Web Adaptor

* Remove the web adaptor from the previous version.
  + **For multi-machine sites**, this step must be completed after upgrading all machines in the site.

1. Install New Web Adaptor

* Install the new version of the web adaptor using the same name as the previous version.

1. Configure the Web Adaptor

* Follow instructions for configuring the web adaptor.

1. Validate ArcGIS Server Manager

* Confirm the ArcGIS Server Manager is accessible through the web adaptor.

###### References

For detailed guidance, refer to the following resources:

* [How to Upgrade to ArcGIS Enterprise 11.x](https://enterprise.arcgis.com/en/get-started/11.1/windows/upgrade-arcgis-enterprise.htm)
* [ArcGIS Web Adaptor System Requirements](https://enterprise.arcgis.com/en/system-requirements/11.1/windows/arcgis-web-adaptor-system-requirements.htm)
* [Upgrade ArcGIS Server](https://enterprise.arcgis.com/en/server/11.1/deploy/windows/upgrade-arcgis-server-windows-and-linux.htm)
* [Upgrade Data Store](https://enterprise.arcgis.com/en/portal/11.1/administer/windows/upgrade-data-store.htm)
* [Upgrade Web Adaptor](https://enterprise.arcgis.com/en/web-adaptor/11.1/install/iis/upgrade-arcgis-web-adaptor.htm)
* [Considerations for Upgrades](https://enterprise.arcgis.com/en/get-started/11.1/windows/upgrade-arcgis-enterprise.htm)

**Note**: Review retirement notices and consider the benefits of a transitional upgrade to version 10.9.1 before upgrading to 11.1.