Migrating from ArcGIS Desktop (ArcMap) to a Modern Geospatial Platform



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Introduction

For years, ArcGIS® Desktop, which includes ArcMap[™] and ArcCatalog[™], has been at the center of geographic information system (GIS) workflows, enabling organizations like yours to solve complex problems and manage critical operations. But with ArcGIS Desktop now in mature support (as of March 2024) and its retirement approaching in March 2026, the time has come to transition to a dynamic, scalable platform designed to support the long-term needs of your organization.

Migrating from ArcGIS Desktop (specifically, ArcMap) to Esri's modern geospatial platform is more than just a software change—it's an opportunity to future-proof and expand your organization's GIS program. Now, the primary way to license and access ArcGIS is through user types. This licensing model provides expanded, role-based access to ArcGIS capabilities, apps, and services. By making the transition, you can:

- Optimize licensing-Match team roles with the right tools and reduce complexity.
- Modernize workflows-Streamline processes and collaborate more effectively.
- **Unlock advanced capabilities**—Harness the power of the cutting-edge tools in ArcGIS Pro.
- **Empower all users**–Provide web and mobile access for everyone in your organization.
- Future-proof your GIS program

 Keep it secure, scalable, and prepared for what's next.

We recognize the investment you've made in ArcMap, and we're committed to supporting you through the next step in your GIS journey. Use this guide to plan, prepare, and execute a seamless migration. Let's transform the way your team works, starting today.

A Legacy of GIS Innovation

For many, ArcMap was where it all began. Introduced in the late 1990s, it was game-changing software that brought GIS into the digital era and made spatial analysis more intuitive and accessible. Gone were the days of command-line ArcInfo™; with ArcMap, users could point, click, and map, transforming how geographic information was created, edited, and shared.

From digitizing maps and building models to performing spatial analysis, ArcMap shaped a collective understanding of GIS. But technology is constantly evolving, and users need tools that keep pace. That's why ArcGIS Pro was introduced in 2015: to serve as a

modern GIS providing advanced capabilities, improved performance, and seamless integration with ArcGIS Online and ArcGIS Enterprise.

Now, with GIS extending beyond the desktop to web and mobile environments, moving to ArcGIS Pro through user types gives everyone the power, flexibility, and security needed to

meet today's challenges. We know that change can feel daunting, but you don't have to do it alone. Esri is here to support you at every step, with expert guidance, training, and resources to help make your transition as smooth as possible.

The Value of Migrating

Migrating is a strategic opportunity to reimagine how your organization uses GIS to meet its goals. This is a chance to build or elevate your GIS program. Move beyond traditional desktop workflows to a fully connected system that supports collaboration, analysis, and decision-making across teams. Migrating lets you:

1. Unlock the Full Potential of a Modern Desktop GIS

At the heart of Esri's geospatial platform is ArcGIS Pro—the premier desktop GIS solution for advanced data visualization, analysis, and mapping. ArcGIS Pro provides your team with:

- Comprehensive tools in one place—Create maps, perform spatial analysis, and manage geospatial data in a single, integrated application.
- Advanced capabilities—Leverage Al-powered workflows, 3D visualizations, and realtime data integration to tackle complex projects.
- **Automation and customization**—Use Python scripting and configurable tasks to streamline processes and maximize productivity.
- The ability to share seamlessly-Publish maps and data directly to ArcGIS Online or ArcGIS Enterprise for collaboration across teams and devices.

Learn more about the benefits of migrating.

2. Empower Your Entire Organization with User Types

ArcGIS can provide valuable information and insight to users throughout an organization, but not everyone in your organization may need access to the advanced features in ArcGIS Pro. That's where **user types** come in. This role-based licensing model aligns ArcGIS apps and capabilities with an individual's role, making it easier to equip your team members with the necessary tools for their work. User types include:

- Creator-For those who design maps, build apps, and manage data
- Professional and Professional Plus

 For advanced mapping, analysis, and cartography
- Contributor-For users who need to edit and update data on the web
- Viewer-For stakeholders and decision-makers who need access to GIS insights
- Mobile Worker–For field staff collecting data on mobile devices

By rightsizing your ArcGIS licensing, you can reduce costs and equip more staff across your organization with geospatial capabilities. Learn more about user types.

3. Modernize and Streamline Workflows

Migrating to Esri's geospatial platform enables you to rethink and improve the way your team works. This means your ArcGIS Desktop users can start taking advantage of other parts of ArcGIS—beyond desktop applications like ArcGIS Pro. In some cases, users may be able to migrate their workflows from desktop GIS software to more focused web or mobile applications.

With user types, they get access to:

- **Simplified data sharing**—Use web-based tools to reduce dependencies on desktop software for everyday tasks like querying data or printing maps.
- **Focused applications**—Provide task-specific apps for users who only need functionality like field data collection or attribute editing.
- **Cross-platform collaboration**—Connect desktop, web, and mobile workflows, ensuring seamless access to GIS tools from anywhere.

4. Stay Ahead with a Scalable, Future-Ready System

Migrating ensures that you're working with the latest GIS technology that's designed to support you now and as your systems evolve and grow in the future:

- **Regular updates**—ArcGIS Pro receives new features and enhancements with every release, keeping your tools aligned with industry advancements.
- **Enhanced security**—Stay protected with regular patches and updates that address evolving cybersecurity threats.
- **Scalability**–Whether you're managing a small team or a large enterprise, ArcGIS grows with you, providing tools and resources to support you at every stage.

5. Align GIS with Organizational Goals

Migrating is an opportunity to align your organization's GIS strategy with broader priorities and drive future growth:

- **Expand access**–Empower decision-makers and non-GIS staff with tailored tools that make geospatial data accessible and actionable.
- **Improve efficiency**–Streamline operations by integrating GIS workflows into existing business processes.
- **Drive better decisions**—Use advanced analysis and visualization tools to gain deeper insights and support data-driven decision-making.

Why Act Now?

ArcMap is in mature support and will be retired soon, at which point technical support will be discontinued. Delaying migration could result in added risks and costs. Unsupported software becomes vulnerable to security threats and limits your ability to adapt to

organizational changes. Acting now minimizes disruptions and positions your organization to leverage the full power of ArcGIS well into the future.

Planning Your Migration: Set Yourself Up for Success

A successful migration to ArcGIS Pro through the user type licensing model begins with a comprehensive understanding of your organization's current GIS environment. By taking the time to assess your current state, align GIS capabilities with organizational goals, and prepare your team and systems, you'll set the stage for a smooth transition.

1. Assess Your Current State

Use the questions below to document your current users, data, workflows, and infrastructure:

User Needs and Skills

- What do you use GIS for? Think about how your organization uses GIS and the key business outcomes it supports.
- Who in your organization uses GIS and what capabilities do they need? Identify how many users need to view, edit, or analyze data. This will help you determine which and how many user types you need.
- What training will your users need, based on their role, responsibilities, and GIS experience? Find out which users only need to view web apps or monitor dashboards, as they will need different training than ArcGIS Pro power users. Based on their workflows and expertise, what support will users need to help them be successful?

Data

- What data storage methods do you use? Inventory your data at each storage location, including folders, file geodatabases, enterprise geodatabases, ArcGIS Data Store, cloud storage, or unstructured data warehouses. Learn how ArcGIS Pro will access each of these locations.
- What types of data do you use? Inventory your data types, including vector, raster, 3D, tiled, and real-time data. It will be necessary to accommodate all your data types in your new ArcGIS system.
- Do any of your datasets need to be upgraded? Identify what datasets your organization uses, as there are several feature class types, datasets, data formats, or data models that must be migrated or upgraded before they can be used in ArcGIS Pro. These include:

- Coverages and personal geodatabases (.mdb)—These older formats are not supported and must be converted to file geodatabases (.gdb) for continued use.
- Mosaic datasets—These need to be upgraded to work in ArcGIS Pro.
- o Annotation–This requires conversion to standard feature-linked annotation.
- Dimension—This must be upgraded to work within the ArcGIS Pro environment.
- Network datasets—These require updates to work with the ArcGIS Network AnalystTM extension.
- o Parcel fabric-This must be upgraded to ArcGIS Parcel Fabric.
- Geometric network–This must be converted to a trace network or ArcGIS Utility Network.
- Do you use multiuser editing, offline editing, or archiving? Determine your current
 and ideal editing workflows. In addition to traditional versioning, ArcGIS Pro supports
 branch versioning for services-based editing. You'll need to decide not only whether
 to use versioning but also what type of versioning is appropriate. Learn more about
 versioning.
- Do you use Attribute Assistant in ArcMap? Determine if your organization is an adopter of Attribute Assistant. The Attribute Assistant add-in is not available for ArcGIS Pro, but the capabilities are available as attribute rules. Learn more about attribute rules.
- Do you use any external data sources or data that requires conversion? Check to see if other types of data exist across your organization. ArcGIS Pro supports a wide variety of data formats. Tools such as ArcGIS for AutoCAD can streamline or simplify the process of working with other data formats.
- **Do you integrate data with other systems?** Examine data integration processes to plan for any changes to your data or data models.

Workflows

- How do individuals or teams currently use ArcMap? What workflows or processes do they rely on? Seek to understand the key steps, information products, and outcomes for your organization. During your migration, it is critical that these workflows are mapped to equivalent or enhanced capabilities in ArcGIS Pro. In some cases, you may be able to transition ArcMap software-based workflows to ArcGIS Online or ArcGIS Enterprise web applications or mobile applications for collecting, editing, and viewing data.
- What customizations do you use? Determine if there are customized tools, server
 object extensions, plug-ins, scripts, or third-party functionalities being utilized. If so,
 these should be reviewed for potential replacement with commercial off-the-shelf
 (COTS) functionality, configuration of COTS software, or low-code options. If custom
 tools are needed beyond these options, plan for re-creating their functionality using
 ArcGIS Pro SDK for .NET.
- Are your workflows dependent on ArcMap extensions? Figure out if extensions such as ArcGIS Workflow Manager, ArcGIS Data Reviewer, and ArcGIS Business AnalystTM are in use, as these will have undergone significant changes in the transition to ArcGIS Pro. If you use extensions, your migration plan must consider transitioning these extensions as well.

- How do you share information? Examine how you publish, share, or provide access to
 maps and data, and whether you do so with other organizations or publicly. If you use
 extract, transform, and load (ETL) processes or replication, document how data is
 ingested or transformed to accommodate for changes to the data formats or models.
- What printed maps, layouts, and map series do you use? Import these .mxd documents into ArcGIS Pro to start transitioning your organization's work. Note that data-driven pages will automatically convert into a map series.
- What symbology do you use? Identify the ArcMap symbols you want to use in ArcGIS
 Pro; however, consider modernizing your symbology, especially to make it more
 compatible with web-based workflows. Please note that representations are no longer
 used in ArcGIS Pro but the symbols can be re-created. Learn more about
 representations in ArcGIS Pro.
- What web maps do you use? Create an inventory of the web maps or applications you use and plan to transition them to ArcGIS Enterprise or ArcGIS Online.

Infrastructure

- What foundational components of the ArcGIS system do you use? Determine your current setup, as this will help you plan your infrastructure. If you are currently using web services or plan to in the future, consider whether your use of GIS is best suited to an ArcGIS Enterprise or ArcGIS Online environment. Check for the following:
 - ArcMap
 - ArcMap extensions
 - ArcGIS Server
 - Portal for ArcGIS
 - o ArcGIS Server or ArcGIS Enterprise extensions
 - o An enterprise geodatabase
 - o ArcGIS Online

2. Align GIS with Organizational Goals

This migration is an opportunity to align your GIS strategy with broader organizational priorities. Focus on the following areas:

- **Rightsize licensing**–Match user roles to the appropriate user types like Viewer, Creator, or Professional Plus to optimize costs and capabilities.
- **Prioritize workflows**—Identify the high-value workflows that should be modernized first.
- **Expand collaboration**–User types make GIS data, tools, and insights accessible to a wider range of personnel.

Use the interactive user type migration decision tree to find the right licenses for your team's needs and workflows.

3. Prepare Your Team and Systems

Ensure that your team and IT infrastructure are ready for migration:

- System readiness—Verify that your IT infrastructure meets the system requirements of ArcGIS Pro.
- Data management-Organize and clean your data to ensure a seamless migration.
- Training and support—Provide tailored training for team members based on their
 roles, using resources like Esri Academy, Learn ArcGIS, and instructor-led courses.
 Explore the Supplemental Resources section at the end of this guide to learn more.

4. Develop a Migration Timeline

Divide your migration into phases to minimize work disruptions and help address potential challenges:

- **Pilot testing**–Start with a small group to identify challenges and refine workflows.
- Phased rollout-Gradually expand the migration to include all users and workflows.
- Monitor progress-Collect feedback from users and adjust as needed.

Why These Steps Matter

Assessing your current state ensures that your evolving use of GIS is aligned with your organization's needs and workflows. By preparing your team and systems, you'll be ready to execute a migration that minimizes downtime, improves efficiency, and positions your organization for future success. If you need help planning your migration, chat with an Esri account manager.

Get Started with Migration

With your planning complete, it's time to start your migration to ArcGIS Pro. These next steps will guide your team through licensing setup, software installation, data migration, and team training.

Step 1: Set Up Licensing

Understand Your Licensing Model

Every ArcMap license current on maintenance includes:

- An ArcGIS Online organizational account, which serves as a central hub for managing users and content as well as sharing maps, apps and dashboards
- The Creator user type, required to sign in and manage ArcGIS Pro access
- An ArcGIS Pro add-on at either the Basic, Standard, or Advanced level of your ArcMap license

By default, ArcGIS Pro licenses are assigned through ArcGIS Online; but organizations using ArcGIS Enterprise as a self-hosted GIS environment can manage licensing there if preferred. Explore the ArcGIS Enterprise licensing guide to learn more.

Key Benefit: This cloud-based licensing model replaces traditional licensing files, creating a more flexible workplace where users can access ArcGIS Pro from any machine where it is installed, enhancing collaboration across modern workflows.

Activate ArcGIS Online

Before assigning ArcGIS Pro licenses, organizations using ArcGIS Online must activate their subscription. Refer to the ArcGIS Online Implementation Guide and follow the steps in these sections:

- Activate your subscription (page 4)
- Add members (page 8)

If your organization uses ArcGIS Enterprise, learn how to configure ArcGIS Pro licenses in Portal for ArcGIS.

Provide Access

Once licensing is set up, you can assign ArcGIS Pro to users who require this powerful desktop software to accomplish their work. Currently, you assign the ArcGIS Pro add-on to a Creator user type in ArcGIS Online or ArcGIS Enterprise. Once you fully migrate to ArcGIS Pro, access to it will only be through either a Creator, Professional, or Professional Plus user type.

For team members who don't need ArcGIS Pro, such as those collecting data on mobile devices or viewing data on the web, consider matching them to the apps and capabilities found in the **Viewer**, **Contributor**, or **Mobile Worker user types**.

Tips

- Manage users: Control how individual organization members access and work with content and services. Learn more about administering user types, roles, and privileges in ArcGIS Online or ArcGIS Enterprise.
- Use existing Esri accounts: If your team members have Esri accounts, when adding them to the organization, select the option to invite them using an account of their choice. This way, they won't have to merge two accounts. Questions about account merges can be directed to Esri Customer Service.
- Use the setting to enable Esri access: The setting must be enabled if you want members to access sites such as Esri Training, Esri Support, Esri Community, and My Esri. Find out how.

Step 2: Download and Install ArcGIS Pro

Now that you've assigned ArcGIS Pro to the right team members, it's time to install the software. ArcGIS Pro can be downloaded and installed by your organization's administrator. This is the person who communicates with Esri Customer Service and keeps your software active. If you're not sure who your primary maintenance contact is or would like to specify a

new contact, reach out to Esri Customer Service. If you don't have this role, forward the information in this section to the person who does.

- Download and install ArcGIS Pro: Follow the steps in the ArcGIS Pro documentation.
 For security and management reasons, organization members are not able to download ArcGIS Pro. As the administrator, you may want to oversee the download process. Alternatively, you can allow each member to download their own software.
- Verify access: Check that users can sign in to ArcGIS Pro using their assigned user types.

Tips

- Check your system requirements: Before installing or upgrading ArcGIS Pro on a virtual or physical machine, ensure that your system meets the minimum requirements to run it. Learn more.
- Link your organization: Before downloading ArcGIS Pro, you must link your new ArcGIS Online organization to My Esri. To do this, sign in to My Esri, click the My Organizations tab, and follow the prompts to request permissions.
 Authorize if necessary: If you've already assigned user types using ArcGIS Online, organization members simply need to sign in when starting ArcGIS Pro. If you converted ArcGIS Pro add-ons to license files, you should have received an email with authorization numbers and further instructions. You can also find this information in the licensing area in My Esri. Learn more about authorizing ArcGIS Pro with a license file.

Step 3: Migrate Your Maps, Tools, and Data

The process of bringing your ArcMap content into ArcGIS Pro is straightforward. You can also import your favorite styles and Python scripts. We encourage you to share the following workflows with your team members if you find them useful.

Import ArcMap Documents

ArcGIS Pro organizes your work into project files (.aprx). A project is a collection of related items—which may include maps, layouts, item connections, and other resources—that contribute to a common purpose. If you have existing ArcMap documents in map (.mxd), scene (.sxd), and globe (.3DD) formats, you can import them into ArcGIS Pro projects. If you have multiple related documents, consider importing them into a single ArcGIS Pro project to streamline your workflow.

Follow the tutorial Import an ArcMap document to see how the process works, then try importing a .mxd of your own.

Important: Importing an .mxd does not modify the original file – it will continue to work in ArcMap. However, ArcMap and ArcGIS Pro will reference the same data sources, so be sure to review the Migrate Data section for best practices.

Convert ArcMap styles to ArcGIS Pro

- ArcMap styles (.style) must be converted to ArcGIS Pro styles (.stylx).
- Many ArcMap styles are available in ArcGIS Online or ArcGIS Enterprise.
- Alternatively, you can import a locally saved style.

Learn how to search for and add styles.

Update Custom Tools and Scripts

ArcGIS Pro uses Python 3 while ArcMap uses Python 2. Therefore, scripts and custom geoprocessing tools written for ArcMap may need to be modified to work in ArcGIS Pro. However, other tools, such as add-ins, will have to be rewritten in ArcGIS Pro. Utilize these resources:

- Analyze Tools for Pro-For identifying areas of code where changes must be made
- Python 2to3—Can automate much of the process of modifying scripts and custom tools
- ArcGIS Pro SDK for .NET-Can help you with creating new add-ins for ArcGIS Pro

Learn more about analyzing custom geoprocessing tools for ArcGIS Pro.

Migrate Your Data

Most of the data that you work with in ArcMap can be used as-is in ArcGIS Pro. When importing an .mxd, ArcGIS Pro will maintain connections to your data without requiring modifications. However, some datasets require upgrades or conversions to fully leverage ArcGIS Pro capabilities. See more details on migrating data and migrating existing work.

Tips

GIS administration best practices: In addition to assessing workflows, users, and data, GIS administrators play a crucial role in ensuring a smooth migration. Below are resources to help deploy consistent settings, manage applications, and optimize team collaboration:

- **Deploy standards among users**—Ensure consistency by using application management settings to configure systemwide settings.
- **Migrate connections**—Streamline access to essential data and tools by migrating folder, database, and server connections from ArcGIS Desktop to ArcGIS Pro.
- **Set up favorites**—Preconfigure favorites like folder, database, and server connections. Refer to Esri's web page with information about using project favorites, and learn what is possible.
- **Deploy organization layout templates**—Create consistent project layouts with reusable templates. Learn how to add a layout to your project.

Supplemental Resources

Equip your team with curated learning resources and ongoing support.

Training

Focused Training for All User Types

- Unlimited e-Learning: Explore a catalog of tutorials or follow a structured learning plan to master key ArcGIS topics at your own pace.
- Learn ArcGIS: Use step-by-step tutorials modeled after real-world scenarios to build foundational skills.
- Instructor-Led Training: Access classes taught by Esri experts, available in person or online.

For more information on training for individuals and the entire organization, explore options in Esri Academy.

Focused Training for Migrating from ArcMap to ArcGIS Pro

- ArcGIS Pro Fundamentals—Explore this learning plan, which covers the basics, essential workflows, data, and more.
- ArcGIS Pro courses—See all ArcGIS Pro content in Esri Academy.
- Migrating from ArcMap to ArcGIS Pro-Learn about this two-day instructor-led class.
- Migrate from ArcMap to ArcGIS Pro-Explore this learning plan.

Books

- Switching to ArcGIS Pro from ArcMap
- Getting to Know ArcGIS Pro 3.2
- Top 20 Essential Skills for ArcGIS Pro
- Top 20 Essential Skills for ArcGIS Online
- Getting to Know Web GIS
- Fieldwork Handbook: A Practical Guide on the Go

Additional Resources

- Watch the video of ArcGIS Pro: Migrating from ArcMap, a 2024 Esri User Conference technical presentation.
- Explore the ArcGIS Pro Terminology Guide.
- Access ArcGIS Pro shorts—short videos that cover workflows and tips.
- Stay informed with product updates, expert tips, and curated resources. You can sign
 up for the ArcGIS Pro newsletter, follow us on X @ArcGIS Pro, and hear directly from
 the ArcGIS Pro team through ArcGIS Blog.

- Learn about building and running a full-scale GIS program that maximizes the impact of GIS by helping you align it to business goals.
- Design, build, and operate systems with ArcGIS that meet your organization's business needs. Explore the ArcGIS Architecture Center.

Troubleshooting and Support

Looking for assistance with ArcGIS Pro? Use these resources to find answers:

- ArcGIS Pro Help Documentation—This resource is searchable by keyword and contains documentation for everything from program setup to individual tools.
- Esri Community–Get specific answers from peers and members of Esri's ArcGIS Proteams when you consult Esri Community.
- Knowledge Base–Find technical articles that have been validated by Esri's subject matter experts.
- FAQ-Browse frequently asked questions about ArcMap in the ArcGIS Pro help documentation for quick solutions to common issues.
- Technical Support–If you still need help, contact Esri Technical Support for help with technical issues or Esri Customer Service to answer your licensing questions.



Esri, the global market leader in geographic information system (GIS) software, location intelligence, and mapping, helps customers unlock the full potential of data to improve operational and business results.

Founded in 1969 in Redlands, California, USA, Esri software is deployed in more than 350,000 organizations globally and in over 200,000 institutions in the Americas, Asia and the Pacific, Europe, Africa, and the Middle East. Esri has partners and local distributors in over 100 countries on six continents, including Fortune 500 companies, government agencies, nonprofits, and universities. With its pioneering commitment to geospatial information technology, Esri engineers the most innovative solutions for digital transformation, the Internet of Things (IoT), and advanced analytics.

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