Get to Know ArcGIS® Excalibur™

Discover the key capabilities of ArcGIS Excalibur

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Task checklist

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1. Understand ArcGIS Excalibur

ArcGIS® Excalibur™ is a web-based application available with ArcGIS Enterprise 10.7 and later. Excalibur enhances imagery workflows by allowing you to search, discover, and work with imagery in integrated workflows and perform imagery analysis and exploitation.

ArcGIS Excalibur unifies traditional geospatial workflows and imagery-based views into a single viewing experience. This allows you to work with imagery of all types as well as geospatial reference layers across the platform in the collected view for maximum analytic value.

You can do the following with ArcGIS Excalibur:

- **Streamline image-based workflows–**In ArcGIS Excalibur, you can simplify your search, discover, and use experiences to create meaningful imagery workflows. For example, you may use imagery from a recent natural disaster to collect observations of damaged facilities.

- **Work with side-by-side visualizations–**Use fully integrated imagery of your choice in map space and image space to observe your imagery in different views. This can help you when you are looking at buildings at different angles in a heavily populated area like San Francisco.

- **Image annotation–**The sketching capabilities with automatic, accurate transformation to geographic features help you highlight areas of importance when looking at your imagery. For example, you can call out and label any activity occurring at a point of interest.

- **Create imagery projects–**ArcGIS Excalibur introduces the concept of an imagery project, a dynamic way for you to organize resources required to complete an image-based task in a single location. Use a specific set of images from your image collection to create a focused workflow for your image task. You can create projects ranging from identifying areas of damage from natural disasters to observing the presence of aircraft at an airport.

2. Install and use ArcGIS Excalibur

Before you start using Excalibur, you'll need to install the software and enable accounts for your users.

Software requirements

Prior to installing ArcGIS Excalibur, you must install ArcGIS Enterprise 10.7 or later, which includes the following components:

- Portal for ArcGIS

- ArcGIS Server

- ArcGIS Data Store

- ArcGIS Web Adaptor

Learn how to set up a base ArcGIS Enterprise deployment

Authorization requirements

Once you install and authorize a base ArcGIS Enterprise deployment, an ArcGIS Image Server license file must be authorized with ArcGIS Server. ArcGIS Image Server is a specialized licensing role for ArcGIS Server. It provides tools and resources to host, process, analyze, and explore collections of imagery, rasters, and remotely sensed data.

Browser requirements

ArcGIS Excalibur works in desktop web browsers. It is not supported on mobile devices or tablets. Use the latest version of any of the following browsers for the best performance:

- Google Chrome

- Microsoft Edge

- Mozilla Firefox

- Safari

Install and authorize ArcGIS Excalibur

ArcGIS Excalibur is a separate installation that can be completed using the My Esri channels associated with your Esri account and customer number.

Once ArcGIS Excalibur is downloaded, install the software on the machine in which your ArcGIS Enterprise portal is installed. You must authorize ArcGIS Excalibur before you can use it.

Learn more about installing and authorizing ArcGIS Excalibur

Licensing user types and roles

After successfully downloading and installing ArcGIS Excalibur, it must be assigned to members with the Creator or GIS Professional user type. In addition, members must also have the default role of a Publisher or Administrator to ensure all capabilities of ArcGIS Excalibur will work properly. The default role of a User can still access the application but with limited support—including not having the ability to create a new imagery project. The default roles of a Data Editor or Viewer are not supported.

Custom roles are also supported but only include minimum privileges.

Use ArcGIS Excalibur

After ArcGIS Excalibur is installed and authorized and licenses have been assigned to members, it's ready for use. From the portal App Launcher, the ArcGIS Excalibur application is available for any user licensed for the application.

3. Search and discover imagery

ArcGIS Excalibur makes it easy to search and discover imagery available to you within your organization. Options to search for imagery are described below.

Use the imagery catalog search

Use the imagery catalog search functionality to perform an interactive search and selection of available imagery from an enterprise imagery catalog service. You can also set search settings, preview imagery, view image metadata, and queue images for further use.

Learn more about the imagery catalog search

Explore an imagery web service

Use the Imagery Web Service option to access your imagery by directly connecting to an imagery web service or Web Map Service (WMS) URL to explore your imagery in the catalog or canvas view.

Learn more about using an imagery web service URL or WMS URL

My Available Imagery view

Use the My Available Imagery option to determine the image services that are available to you in your content and your organization's content that you can use in the application. The My Available Imagery view displays information about each available imagery web service and allows you to view additional layer properties to gain a greater understanding about each layer. In addition, you can enable or disable each layer for search in the imagery catalog, or can connect the service directly to the catalog or imagery exploitation canvas.

Learn more about using My Available Imagery

4. Publish hosted imagery

You can upload your hosted imagery layers. Hosted imagery layers are dynamic image services that run on ArcGIS Image Server sites your portal administrator has federated with the portal. This makes it easier to manage, publish, and share imagery with your organization and for your analysis.

To upload hosted imagery layers, your environment must be configured properly, and you must have privileges to publish them. The primary raster files supported in this workflow are .tif, .ntf, and .jp2.

This process may take some time depending on the size of your files and network bandwidth. However, you can use other components of ArcGIS Excalibur while your new imagery layer publishes.

Learn more about publishing hosted imagery

5. Work with imagery

After you search and discover imagery for use, you can connect directly to the imagery exploitation canvas, where you can focus on and work with your imagery using easily accessible tools such as the display and exploitation tools.

The imagery exploitation canvas also allows you to see information about your imagery through the image metadata table. You can set selected images as your focused image to view your imagery aligned to a map (in map focus view) and view the same imagery as it was captured in its native perspective (in image focus view).

Tools panel

The Tools panel allows you to view and use tools that work directly with the imagery service in your imagery exploitation canvas. The following are the tools available in ArcGIS Excalibur:

- **Display tools**—Apply common display settings to your imagery and change the order of your imagery to gain the most value out of each pixel.

- **Exploitation tools**—Highlight areas of interest through markup, labeling, and measurements.

- **Export tools**—Export your current image focus view into various file formats to use in presentations.

- **Project tools**—View instructions on what needs to be accomplished in an imagery project, and use specific tools to help streamline your image-based tasks.

Learn more about the Tools panel

Image metadata table

The image metadata table allows you to see information about your imagery and interact with each image. Based on the imagery format and type, the table contains metadata about each record in the table. You can also use the table to select images, set a specific image as the focused image, or create an imagery project.

Use the image views

There are three views you can use to work with your imagery in the imagery exploitation canvas of ArcGIS Excalibur. The metadata of your imagery determines the available view or views.

Map focus view

After finding suitable imagery and connecting to the imagery exploitation canvas, your imagery appears in the map focus view by default. The map focus view allows you to spatially view your imagery on top of a default basemap, where your imagery is automatically orthorectified and aligned with the map.

Split view

You can also view your imagery in split view. This allows you to use the map focus view and image focus view at the same time. This is helpful when you need to view your imagery aligned to a map (in map focus view) and view the same imagery as it was captured in its native perspective (in image focus view).

Image focus view

When you're using split view, you can expand the view of your focused image to a maximized state. You have more room to work with your focused image in its native perspective. From this view, you can see the metadata of the corresponding image and rotate the image based on the current task.

6. Create an imagery project

ArcGIS Excalibur allows you to create imagery projects. An imagery project is a dynamic way to organize and reference resources that are required to complete an image-based task in a single location. Projects can include geospatial reference layers to provide users with context to their imagery task in addition to a set of tools to streamline image-based workflows in a focused manner.

Create an imagery project through the catalog

You can create a new imagery project using the catalog after you search for your imagery.

Identify imagery

The basis of all imagery projects is an image or set of images that you need to complete your task. The first step in creating an imagery project is identifying the imagery to be used in the project. Add your desired images to the Queued Images tab.

Define project details

Once you've added your imagery to the queue, you must provide details that describe your project. As part of the details, you must specify a set of instructions that help inform users what they need to accomplish.

Create a project

This is the last step in the workflow. Once you've created your project, you can open your project to work on it or view the project details and add project information or observation layers. Additionally, you can return to the catalog view to search for more imagery.

Learn more about creating an imagery project in the catalog

Create an imagery project through the canvas

You can create a new imagery project from the canvas if you want to save your work on the fly. This includes saving markup and work you have done with the display tools.

Define project details

Once you choose to save your project, you must provide details that describe your project. As part of the details, you must specify a set of instructions that help inform users what they need to accomplish.

If you selected images from the image metadata table, you have the option to include only those images in the imagery project.

Create project

This is the last step in the workflow. Once you create your project, the title of your project appears and reflects your changes, and a folder for your project is created in your portal.

Learn more about creating an imagery project in the canvas

Project capabilities

Imagery projects can be edited to add and remove capabilities at any time. The type of capabilities you add to your project determines which tools are available in the Tools panel to help streamline the imagery-based task.

Add an existing observation layer

You can add an existing observation layer to your imagery project to collect observations from your imagery. This is done through the Imagery Project Details page. These layers are shared through your organization. Once added, these layers provide observation tools in the Tools panel when you open your imagery project.

Add an observation layer

Adding observation layers to a project provides a workflow for collecting observations from imagery, including resources for accomplishing observations, editing, and creating derived information products from these activities. This is done through the Imagery Project Details page. These layers provide observation tools in the Tools panel when you open your imagery project.

When creating an observation layer, you need to input the Layer Information, Layer Details, and Layer Styling. Optionally, you can add a field to the base schema or define a pick list when inputting the Layer Details.

7. Open an imagery project

As an authorized user in your organization, you can discover the imagery projects that are available to you using the imagery projects list page. This page displays information about each available imagery project, such as its name, description, project creator, and project type.

Learn more about the imagery projects list

Open a project from the imagery projects list

From the imagery projects list view, each project can be opened directly in the imagery exploitation canvas, where the experience is based on the project type and the resources included in the project. The project type determines the tools available for use. The sections below describe the various project items you encounter based on the type of project you're opening and its corresponding resources.

Images from an image service

All imagery projects have an image or a set of images from which the imagery project was created. The image or images are available in the supported image focus view based on the type of imagery.

Project instructions

Regardless of the project type, all imagery projects are required to have project instructions. These are directions to help guide you through your image-based task that is included as part of the project tools.

Web map with reference layers

Any project type can be created to optionally include an existing web map that contains geospatial reference layers to help provide context for your imagery project. If the web map contains reference layers, the layers are overlaid on top of the image in both the map focus panel and the imagery focus panel.

Observation layers

When you open an observation imagery project, a set of observation tools is included as part of the project tools. The observation tools are associated with an editable collection layer that was defined when the project was created.

In ArcGIS Excalibur, two observation tools are available: Create Observations and Create Many Observations. Each tool allows you to choose from a palette of defined icons and interact with the images to collect and record features.

Learn more about opening an imagery project

8. Learn more

The resources in this section can help you become familiar with ArcGIS Excalibur and answer common questions regarding the application.

Additional resources

- To learn more about ArcGIS Excalibur, visit the main product overview page.
- The ArcGIS Excalibur documentation help page is a great resource to learn how you can use the application.

FAQ

Is ArcGIS Excalibur available in ArcGIS Online?

No. ArcGIS Excalibur is not currently available in ArcGIS Online.

Is ArcGIS Excalibur designed for a specific type of user?

No. Anyone who wants to discover, analyze, report, and efficiently disseminate image-derived information to consumers can use ArcGIS Excalibur. Users include all-source analysts; imagery analysts; and imagery and geospatial managers in national security, emergency response, the federal government, local governments, humanitarian relief, and public works.

Where can I obtain an imagery web service URL?

You can obtain an imagery web service URL through any of the following:

- **The Content** tab of your Enterprise portal—You can search **My Content** or **My Organization's Content** for the imagery layer type.

- ArcGIS REST API Services directory (for example, https://<host.domain>/<webadaptor>/rest/services)—Any service defined as an ArcGIS Image Server service denoted by ImageServer is a supported service.

- Your organization's GIS administrator.

For more information on using imagery web service URLs, see Explore an imagery web service.

Can I use content created in ArcGIS Excalibur in other ArcGIS applications?

Yes. ArcGIS Excalibur uses the ArcGIS platform and its information model to consume and create content that can be used in other ArcGIS applications. In particular, content created with an observation layer written to a hosted feature service can be used in other applications such as Map Viewer and ArcGIS Pro and web applications such as ArcGIS Dashboards and ArcGIS Insights℠. You can also use exported views from the imagery exploitation canvas in ArcGIS StoryMaps℠ templates.

Where can I get answers to more questions?

Read the ArcGIS Excalibur FAQ to learn more about the web application.

To learn more about Excalibur and add it to your organization's ArcGIS Enterprise deployment, get in touch with an Esri representative at go.esri.com/Excalibur.