Getting Started with the Scanned Maps Template

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Getting started

The Scanned Maps template is in the basemap category of Esri defense and intelligence templates. Basemaps are designed to help you more quickly get your bearings in your map.

The Scanned Maps template and the walk-through exercise in the accompanying "Using the Scanned Maps Template" document are designed to teach you how to add military scanned map data in Compressed Arc Digitized Raster Graphics/Enhanced Compressed Raster Graphics (CADRG/ECRG) format to mosaic datasets using, which is the recommended data type for stored CADRG/ECRG data in ArcGIS, and publish as a cached image service.

The following are a few advantages of using mosaic datasets to store military raster data:

- Mosaic datasets are designed to handle rasters of different resolutions, making it easy to store, manage, and distribute the various types of CADRG/ECRG data products to users through direct access or through image services.
- Mosaic datasets support loading data with the CADRG/ECRG raster type, which extracts NITF information from the raster metadata and stores it on the mosaic dataset attribute table. Loading data using this raster type also provides update logic that is appropriate for CADRG/ECRG data, to ensure only the latest data is stored.
- Mosaic datasets allow users to select and download rasters in their native CADRG/ECRG data format.

Before you work with the template, review this getting started document to help you install and set up the template. This document is divided into the following sections:

- Template contents
- Hardware and software requirements
- Installing and setting up the template

Once you have installed and set up the template, review the "Using the Scanned Maps Template" document, which contains the exercise that describes how to re-create the populated mosaic datasets that come with the template. The same instructions and tools that you use in this exercise can be used to create and populate mosaic datasets with your own CADRG/ECRG data.

Template contents

This template contains the following:

- The **ScannedMaps.mxd** map document. This map contains a populated Scanned Maps basemap containing sample CADRG data. Use this map to view and work with the Scanned Maps basemap before starting the exercise to better understand the end results of the exercise.
- The **ScannedMaps.gdb** file geodatabase. This geodatabase contains two mosaic datasets using the WGS 1984 Web Mercator (Auxiliary Sphere) coordinate system—the same coordinate system used by Esri published ArcGIS Online services:
  - The ScannedMaps mosaic dataset contains standard CADRG data products for Ft. Irwin, California. Standard CADRG/ECRG products are data products that are the most frequently used, serve the widest audience, have the greatest geographic coverage, generally cover the same geographic area across products, and have thematic content from global scale down to regional/city scales. They include Global Navigation Chart, Jet Navigation Chart, Operational Navigation Chart, Tactical Pilotage Chart, Joint Operations Graphic, Topographic Line Map, and City Graphics. For details, see the tool help for the **Add Standard CADRG/ECRG Rasters To Mosaic Dataset** geoprocessing tool, located in the toolbox included in this template.
  - The ScannedMapsMisc mosaic dataset contains miscellaneous CADRG data products within the same geographic area. These datasets are referenced in the ScannedMaps.mxd map document described above. Miscellaneous CADRG/ECRG products are data products that have more specialized uses and typically cover smaller geographic areas than the standard products. Some less frequently used products, which do cover large geographic areas, are included in this category because they have the same map scale as one of the standard products and are easier to work with when stored in a separate mosaic dataset. The products in this category include, but are not limited to, Riverine Maps, Combat Charts, Miscellaneous Maps and Charts, and Military Installation Maps. For a complete list, see the tool help for the **Add Miscellaneous CADRG/ECRG Rasters To Mosaic Dataset** geoprocessing tool, located in the toolbox included in this template.
- The **ScannedMaps.Overviews** folder. This folder contains the overview raster datasets associated with the ScannedMaps populated mosaic dataset. The overviews, built from the Global Navigation Chart data contained within the mosaic dataset, are automatically accessed and displayed as needed by ArcGIS.
- The **SourceData** folder. This folder contains the sample CADRG data for Ft. Irwin, California. This data, which is the data used by the exercise, has been added to the populated mosaic datasets contained in the ScannedMaps.gdb file geodatabase.

  Note: There are no distribution restrictions on this set of Ft. Irwin CADRG data.

- The **ScannedMapsTools.tbx** geoprocessing toolbox. This toolbox contains the tools, used in conjunction with tools that come with ArcGIS, that you need to complete the template exercise. The toolbox contains the geoprocessing tools described in the following table. For additional information, see the context-sensitive help that comes with each tool (click the **Show Help** button in the tool's dialog box).

Tool	Description
Create CADRG/ECRG Mosaic Dataset	Makes an empty mosaic dataset in a geodatabase with the proper characteristics (number of bands and pixel type) appropriate for CADRG and ECRG data.
Add Standard CADRG/ ECRG Rasters To Mosaic Dataset	Adds standard CADRG/ECRG raster datasets to a mosaic dataset from many sources, including a file, folder, raster catalog, or table.
Add Miscellaneous CADRG/ ECRG Rasters To Mosaic Dataset	Adds miscellaneous CADRG/ECRG raster datasets to a mosaic dataset from many sources, including a file, folder, raster catalog, or table.
Calculate Raster Visibility	Calculates raster visibility based on a multiplier of the raster resolution.

- The **ScannedMaps.lyr** layer file. This file contains references to the two populated mosaic datasets contained in the ScannedMaps file geodatabase. To add the layer file to ***ArcMap***, click the **Add Data** button on the ***Standard*** toolbar or drag the layer file onto the map from the ***Catalog*** window.
- **Template documentation**. The template documentation includes this getting started guide plus the "Using the Scanned Maps Template" document (using_scanned_maps.pdf file), a guide that describes how to use the template once you've installed it. Both this getting started guide that you are reading and the "Using the Scanned Maps Template" guide are at the top level of the template .zip file you downloaded. The getting started guide is also available directly from the Esri Defense and Intelligence Gallery page.

Hardware and software requirements

To complete the "populating mosaic dataset" exercises you will need ArcGIS for Desktop 10.1; to complete the "publishing" exercises you will also need access to an ArcGIS for Server 10.1 site.

Hardware requirements

Hardware requirements for this template are the same as those for ArcGIS for Desktop 10.1, and ArcGIS for Server 10.1, which you can review at ArcGIS Desktop System Requirements, and ArcGIS Server System Requirements.

Software requirements

- ArcGIS for Desktop 10.1 must be installed. For a list of ArcGIS for Desktop 10.1 software requirements and operating system limitations, see ArcGIS Desktop System Requirements.
- You must have an ArcGIS for Desktop Standard or ArcGIS for Desktop Advanced license.
- To complete the publishing exercises, you must have access to an ArcGIS for Server 10.1 site. For a list of ArcGIS for Server 10.1 supported platforms and operating system limitations, see ArcGIS Server System Requirements. You will also need the ArcGIS Image extension in order to serve an image service from a mosaic dataset.
- You must have installed an extraction utility, such as 7-Zip.

Installing and setting up the template

To install and set up the template, you must download and extract its associated files, as described in the following procedure.

Steps:

1. Review hardware and software requirements in this guide to make sure your system supports the template.
2. Create a folder named `ArcGISForDefense` on the C drive of your local computer system. Then, in the ArcGISForDefense folder, create a folder named `Basemaps`.
3. On the Esri Defense and Intelligence Gallery, click on Scanned Maps Template. You may have to use the scroll bars to see it in the template list.
   The page that describes the template and lets you download it appears.
4. Click the **Open** drop-down arrow and select **Download**.
   The ***File Download*** dialog box is displayed.
5. Click the **Save** button.
6. On the ***Save As*** dialog box, navigate to the Basemaps folder you created in step 2 and click the **Save** button.
   The template (a .zip file) is downloaded to the location you have specified. When downloading is complete, the ***Download Complete*** dialog box appears.
7. Click the **Open Folder** button on the ***Download Complete*** dialog box.
   Windows Explorer opens and displays the downloaded .zip file in your C:\ArcGISForDefense\Basemaps folder.
8. Use your extraction utility to extract the .zip file to its current directory. For example, if you are using 7-Zip, right-click the .zip file and click **7-Zip** > **Extract**.
   The contents of the .zip file are extracted to C:\ArcGISForDefense\Basemaps\ScannedMaps.

You are now ready to use the template. For instructions and exercises for using the template, see the "Using the Scanned Maps Template" guide, which is a .pdf file named using_scanned_maps.pdf that appears with the template contents after they're extracted (after the extraction, using_scanned_maps.pdf appears in the C:\ArcGISForDefense\Basemaps\ScannedMaps folder).