ArcGIS Data Appliance: OpenStreetMap Vector Basemaps

THE SCIENCE OF WHERE

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Get started

What is ArcGIS Data Appliance: OpenStreetMap Vector Basemaps?

OSM Vector Basemaps provides detailed maps from contributors with local knowledge that you can use with your ArcGIS and web applications. Vector tiles enable dynamic cartography and provide the flexibility to create your own basemap style. The vector basemaps are available as tile layers that can be added to existing maps as either a basemap or an overlay layer.

OSM Vector Basemaps provides a content solution that works with ArcGIS Enterprise. It is included (shipped separately) with ArcGIS Data Appliance 2023 with World Standard, World Advanced, North America Standard, and North America Advanced product options. It can also be licensed as a stand-alone option.

Note:
The World Basic product option now includes OSM Vector Basemaps: Basic (WMA only), which ships with World Basic on the World Basic flash drive.

The OSM Vector Basemaps help includes the following topics:

- OSM Vector Basemaps content
- Directory of map styles
- System requirements
- Set up OSM Vector Basemaps
- Information on how to use OSM Vector Basemaps
- Methods to customize OSM Vector Basemaps styles
- Reference information including FAQs, Troubleshooting, and Support

OSM Vector Basemaps content

OSM Vector Basemaps is delivered on a USB flash drive loaded with two vector tile packages, styles, and a style publishing toolbox (`.tbx` file).

Note:
OSM Vector Basemaps ships separately.

The World Basic product option now includes OSM Vector Basemaps: Basic (Web Mercator Auxiliary Sphere only down to ~1:144,000), which ships with World Basic on the World Basic flash drive.

This version includes the following:

- Installation vector tile packages that you upload to your ArcGIS Enterprise portal using ArcGIS Pro and publish as a hosted vector tile service on your hosting server:
  - `OSM_Vector_Basemap_DA2023_Install.vtpk`—A vector tile package for customers who want to use Web Mercator Auxiliary Sphere (WMA).
  - `OSM_Vector_Basemap_GCS_DA2023_Install.vtpk`—A vector tile package for customers who want to use OSM Vector Basemaps in WGS84 Geographic (GCS). This `.vtpk` file uses the WGS84 Geographic, version 2 tiling scheme.
- Map styles (for each projection) that you publish as vector tile layers to your Enterprise portal to use in your maps and apps or customize. These styles require resources included in the VectorBasemapStyles folder for publishing.
- Vector Style publishing tools for managing vector basemap tile layers (map styles) in your Enterprise portal:
  - `VectorStylePublisher.tbx`—This toolbox is used to create vector basemap tile layers.
  - `VectorStyleUpdater.tbx`—This toolbox is used to update existing vector basemap tile layers.
- Map style text files to help you with map style updates:
  - `DA2023_OSM_WMA_StyleUpdater_template.csv`—This file manages WMA styles.
  - `DA2023_OSM_GCS_StyleUpdater_template.csv`—This file manages GCS styles.
- Documentation file `data_appliance_osm_vector_basemaps.pdf` that includes instructions for getting started, setup, using OSM Vector Basemaps, and more.

Note:
Do not use the OSM_Vector_Basemap_DA2023_Install and OSM_Vector_Basemap_GCS_DA2023_Install vector tile packages for anything other than publishing the tile layer (hosted). Once you publish the tile layer to your Enterprise portal, do not share the `.vtpk` files publicly (Everyone), as distribution of these items outside of your organization is not permitted.

All items included with OSM Vector Basemaps: Basic as part of the World Basic product option on the World Basic flash drive have the following file name structure: `DAWB2023`.

What's new

This update of ArcGIS Data Appliance: OpenStreetMap Vector Basemaps contains two updated vector tile packages (`.vtpk` files) used to publish as hosted vector tile services in your ArcGIS Enterprise portal. One is in the Web Mercator Auxiliary Sphere (WMA) projection and the other is in the WGS84/GCS (GCS) tiling scheme. Map styles can be published as vector tile layers for each option.

These vector tile packages contain updated global data and local authoritative data from the OpenStreetMap community through the inclusion of Daylight Map Distribution of OpenStreetMap data. This map distribution is intended to leverage the work of the OSM community and enhance that with additional data validation to detect and remove map vandalism and geometry errors. This dataset also includes an expansion of the coverage of buildings in the map beyond those contributed by the OSM community.

OSM Vector Basemaps contains a total of 10 vector tile layers (map styles). All of the OSM Vector Basemaps vector tile layers (map styles) include cartographic styling refinements.

Existing users of the vector basemaps in ArcGIS Data Appliance can update the hosted tile layer as well as update 10 styles from version 2022. The VectorStyleUpdater toolbox uses a template of existing item IDs and can be run in ArcGIS Pro. A new style, OpenStreetMap (Blueprint), can be published with the VectorStylePublisher tool.

New users can publish any or all of the full set of 10 styles.

Note:
The World Basic product option now includes OSM Vector Basemaps: Basic (WMA only), which ships with World Basic on the World Basic flash drive. OSM Vector Basemaps: Basic contains a total of 10 vector tile layers (map styles).

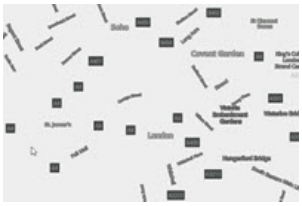
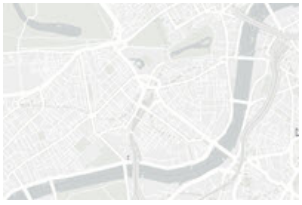
Directory of map styles

OpenStreetMap (OSM) Vector Basemaps includes the following 10 vector tile layers. The styles can be published in the Web Mercator Auxiliary Sphere (WMA) projection or the WGS84/GCS (GCS) tiling scheme.

Note:

OSM Vector Basemaps: Basic (WMA only) displays map features down to ~1:144,000.

Layer name and thumbnail	Style folder name	Description
OpenStreetMap 	openstreetmap	This tile layer provides a vector basemap of OSM data created by Esri. This vector tile basemap was authored in ArcGIS Pro from the OSM Daylight Map Distribution data that was rendered using OSM cartography.
OpenStreetMap (with Relief) 	openstreetmaprelief	This tile layer provides a vector basemap of OSM data created by Esri. This vector tile basemap was authored in ArcGIS Pro from the OSM Daylight Map Distribution data that was rendered using OSM cartography. This layer is designed for use with the World Hillshade layer.
OpenStreetMap (Esri Street style) 	openstreetmapesristreetstyle	This tile layer provides a vector basemap of OSM data created by Esri. This vector tile basemap was authored in ArcGIS Pro from the OSM Daylight Map Distribution data that was rendered using a cartographic style similar to the Esri Vector Basemap World Street Map style.
OpenStreetMap (Esri Street with Relief style) 	openstreetmapesristreetreliefstyle	This tile layer provides a vector basemap of OSM data created by Esri. This vector tile basemap was authored in ArcGIS Pro from the OSM Daylight Map Distribution data that was rendered using a cartographic style similar to the Esri Vector Basemap World Street Map (with Relief) style. It is designed to be used with the World Hillshade layer.

Layer name and thumbnail	Style folder name	Description
OpenStreetMap (Esri Hybrid Reference style) 	openstreetmapesrihybridstyle	This tile layer provides a vector basemap of OSM data created by Esri. This vector tile basemap was authored in ArcGIS Pro from the OSM Daylight Map Distribution data that was rendered using a cartographic style similar to the Esri Vector Basemap Hybrid Reference Layer style. This layer is designed to be overlaid on imagery.
OpenStreetMap (Esri Dark Gray Canvas Base) 	openstreetmapesridarkgraycanvasbase	This tile layer provides a vector basemap of OSM data created by Esri. This vector tile basemap was authored in ArcGIS Pro from the OSM Daylight Map Distribution data that was rendered in dark neutral colors.
OpenStreetMap (Esri Dark Gray Canvas Reference) 	openstreetmapesridarkgraycanvasreference	This tile layer provides a vector basemap of OSM data created by Esri. This vector tile basemap was authored in ArcGIS Pro from the OSM Daylight Map Distribution data and features map labels for use with the Dark Base layer.
OpenStreetMap (Esri Light Gray Canvas Base) 	openstreetmapesrilightgraycanvasbase	This tile layer provides a vector basemap of OSM data created by Esri. This vector tile basemap was authored in ArcGIS Pro from the OSM Daylight Map Distribution data that was rendered in light neutral colors.
OpenStreetMap (Esri Light Gray Canvas Reference) 	openstreetmapesrilightgraycanvasreference	This tile layer provides a vector basemap of OSM data created by Esri. This vector tile basemap was authored in ArcGIS Pro from the OSM Daylight Map Distribution data and features map labels for use with the Light Base layer.

Layer name and thumbnail	Style folder name	Description
OpenStreetMap (Blueprint) 	openstreetmapblueprint	This tile layer provides a vector basemap of OSM Daylight Map Distribution data created by Esri. This vector tile basemap presents the map in a creative cartographic style resembling a blueprint technical drawing.

Frequently asked questions

Listed below are frequently asked questions and answers regarding ArcGIS Data Appliance: OpenStreetMap Vector Basemaps.

How does ArcGIS Data Appliance: OpenStreetMap Vector Basemaps work?

ArcGIS Data Appliance: OpenStreetMap Vector Basemaps (OSM Vector Basemaps) is published as a hosted vector tile service from your ArcGIS Enterprise portal along with nine map styles that you can share, use, and customize within your organization. For more information on vector basemaps and the differences between raster and vector tile layers, see Tile layers in the Portal for ArcGIS help.

How do I set up OSM Vector Basemaps?

Refer to the instructional video and help documentation on the OSM Vector Basemaps Additional resources section of the ArcGIS Data Appliance 2023 website to learn how to set up and use OSM Vector Basemaps.

Where does the data come from?

The data is provided exclusively by Esri (OSM) and its contributors through the use of the OSM Daylight Map Distribution data. Esri uses this Daylight Map Distribution data in addition to an expanded building footprint dataset that is a companion to Daylight. This data is used to author the map using OSM cartography and generate a vector tile package.

Does OSM Vector Basemaps include imagery?

No. OSM Vector Basemaps does not include raster basemaps or imagery.

What services are available?

OSM Vector Basemaps only requires one service published as a hosted vector tile layer from your portal. Other maps are included as map styles that you publish to your portal as tile layers. See Directory of map styles for the vector tile layers included with OSM Vector Basemaps.

Are there any use restrictions when using OSM Vector Basemaps?

The OSM Vector Basemaps provided via ArcGIS Data Appliance are intended for use with Esri software. Redistribution rights are granted by Esri and the data vendor for hard-copy renditions or static, electronic map images (for example, `.gif` and `.jpeg`) that are plotted, printed, or publicly displayed with proper metadata and source or copyright attribution to the respective data vendor or vendors. For copyright and attribution information, see **Credits** for a specific map published to your portal.

Where can I find more information about editing custom styles?

View the New ways of customizing Esri Vector Basemaps post on the ArcGIS Blog website for more information about editing custom styles.

Where can I find more information about using basemaps in my Portal for ArcGIS Map Viewer Classic?

See Customize basemaps and Choose basemap in the Portal for ArcGIS help for more information about using basemaps in your Portal for ArcGIS Map Viewer Classic.

What if I need further assistance?

For all questions, feedback, and troubleshooting, and to report issues, contact Esri Technical Support.

System requirements

OSM Vector Basemaps system requirements

The following software components and prerequisites are required before you deploy OSM Vector Basemaps:

- ArcGIS Pro Basic, Standard, or Advanced 3.0 or later
- An ArcGIS Enterprise 10.8.1, 10.9, 10.9.1, or 11.0 deployment meeting the base ArcGIS Enterprise deployment specifications

Note:
Authentication exclusions—The Linux public key infrastructure (PKI) configuration is not supported.

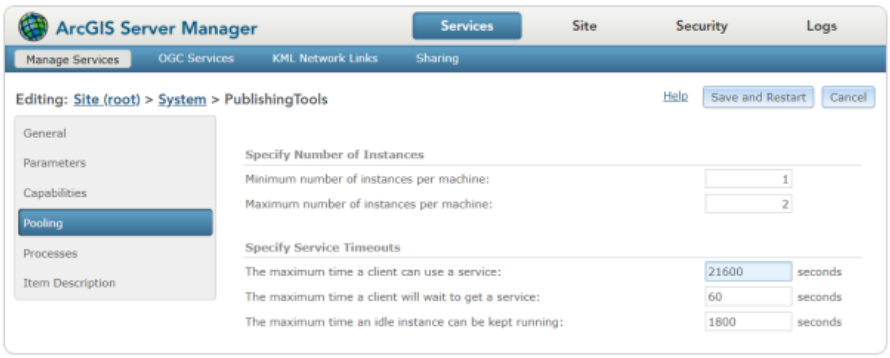
Before you start

Before you begin your deployment, do the following:

1. Check with your portal administrator to verify or request the following:
   - A Portal for ArcGIS account with the Publisher or Administrative role enabled.
   - A named user license enabled for ArcGIS Pro Standard or Advanced.
   - A minimum of 96 GB of available space per `.vtpk` file for your Enterprise 11.0 portal content directory, 48 GB of available space for your hosting server's jobs directory, and 48 GB of available space for your hosting server's cache directory (14 GB for OSM Vector Basemaps: Basic, 7 GB plus 7 GB). Enterprise 10.8.1, 10.9, or 10.9.1 requires a minimum of 90 GB of available space per `.vtpk` file for your portal content directory, 45 GB of available space for your hosting server's jobs directory, and 45 GB of available space for your hosting server's cache directory (14 GB for OSM Vector Basemaps: Basic, 7 GB plus 7 GB).
2. Check with your ArcGIS Server administrator to verify or request the following:
   - Enterprise 11.0 requires a minimum of 96 GB of available disk space per `.vtpk` file on your ArcGIS Server (14 GB for OSM Vector Basemaps: Basic). Enterprise 10.8.1, 10.9, or 10.9.1 requires a minimum of 90 GB of available disk space per `.vtpk` file on your ArcGIS Server (14 GB for OSM Vector Basemaps: Basic).
   - Enough pooling time for your ArcGIS Server. Successfully publishing a large `.vtpk` file as a hosted vector tile service requires more time for the web client to communicate with ArcGIS Server. Check with your ArcGIS Server administrator to confirm that the **The maximum time a client can use a service** option is set to 21,600 seconds.

     The following steps walk you through this process for ArcGIS Server 10.8.1, 10.9, 10.9.1, or 11.0 :

     - Open a new browser and access ArcGIS Server Manager, for example, `https://PORTALNAME/server/manager`, and sign in.
     - Click **Site (root)** > **System** > **PublishingTools**.
     - Click **Pooling**, and under **Specify Service Timeouts**, change the value for **The maximum time a client can use a service** from 3,600 seconds (1 hour) to `21600` seconds (6 hours).



- Click **Save and Restart**.
- Sign out of ArcGIS Server Manager.

3. ArcGIS Data Appliance 2023: OSM Vector Basemaps is delivered on a USB flash drive loaded with vector tiles, styles, and style publishing tools. Copy all contents of the USB flash drive to your local computer.

Setup

Set up ArcGIS Data Appliance: OpenStreetMap Vector Basemaps

The instructions to set up ArcGIS Data Appliance: OpenStreetMap Vector Basemaps depend on whether you are a new or existing user. See the appropriate instructions as follows:

- New user
- Existing user

When you finish setting up ArcGIS Data Appliance: OpenStreetMap Vector Basemaps, your vector basemaps are ready to use.

Set up OSM Vector Basemaps (new user)

For information about what's included with OSM Vector Basemaps, see OSM Vector Basemaps content.

Note:
Before you proceed, review the system requirements to confirm that you can deploy OSM Vector Basemaps on your system.

Once you confirm that the system requirements are met, the workflow to set up OSM Vector Basemaps is as follows:

1. Upload the package to your ArcGIS Enterprise portal
2. Publish the hosted tile layer (service)
3. Publish tile layers (map styles)
4. Share tile layers (map styles)

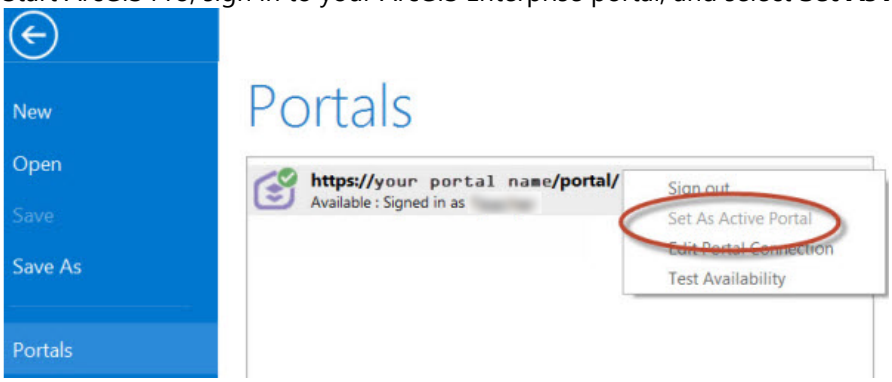
Note:
OSM Vector Basemaps includes two vector tile packages (`.vtpk`) on the flash drive. The `OSM_Vector_Basemap_DA2023_Install.vtpk` file is in the Web Mercator Auxiliary Sphere (WMA) projection. The `OSM_Vector_Basemap_GCS_DA2023_Install.vtpk` file is in the WGS84/GCS (GCS) tiling scheme. The following steps reflect the sharing process of the OSM_Vector_Basemap_DA2023 WMA vector tile package. To share the GCS package, you need to enter the correct `.vtpk` file name for the input package as well as take the GCS naming into consideration when publishing the hosted tile layer. The OSM Vector Basemaps styles in the GCS directory already take the GCS naming into account in the metadata files.

To use OSM Vector Basemaps: Basic (WMA) included with the World Basic (WB) product option, you need to enter the correct `.vtpk` file name for the `OSM_Vector_Basemap_DAWB2023_Install.vptk` file as well as take the WB naming into consideration when publishing the hosted tile layer.

Upload the package to your ArcGIS Enterprise portal

First, you need to copy the entire USB flash drive contents to your local computer if you have not already done so.

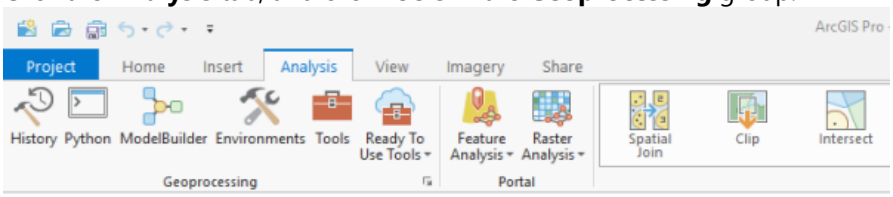
1. Start ArcGIS Pro, sign in to your ArcGIS Enterprise portal, and select **Set As Active Portal**.



Note:

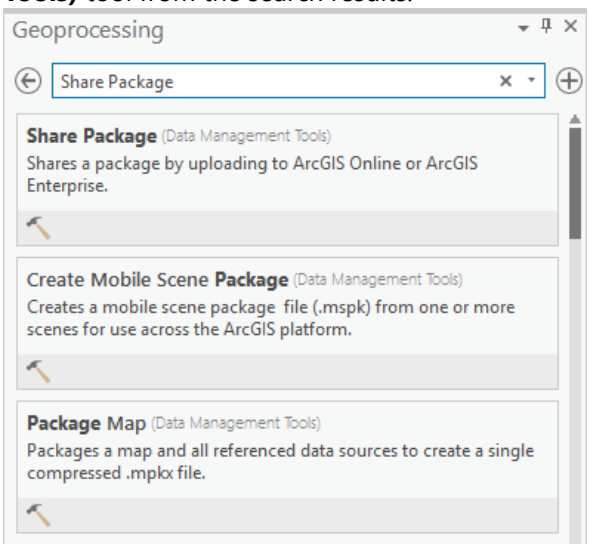
You must sign in and connect to your portal before you proceed. You cannot enter your portal username and password when using the Share Package tool later in these instructions. The tool obtains your credentials from ArcGIS Pro.

2. Create a project.
3. Click the **Analysis** tab, and click **Tools** in the **Geoprocessing** group.



The **Geoprocessing** pane appears.

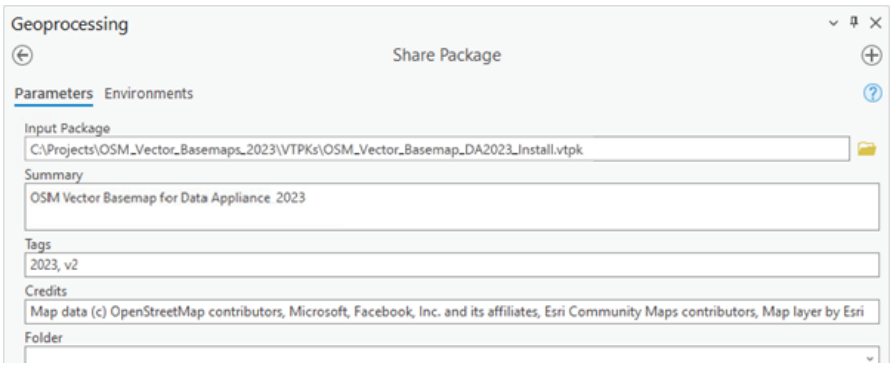
4. In the **Geoprocessing** pane, search for `Share Package`, and select the **Share Package (Data Management Tools)** tool from the search results.



5. On the **Share Package** dialog box, do the following:
   a. For **Input Package**, provide the path to the vector tile package, for example, `C:\Projects\OSM_Vector_Basemaps_2023\VTPK\OSM_Vector_Basemap_DA2023_Install.vtpk`.
   b. For **Summary**, type `OSM Vector Basemap for Data Appliance 2023`.
   c. For **Tags**, type `2023, v2`.

Caution:

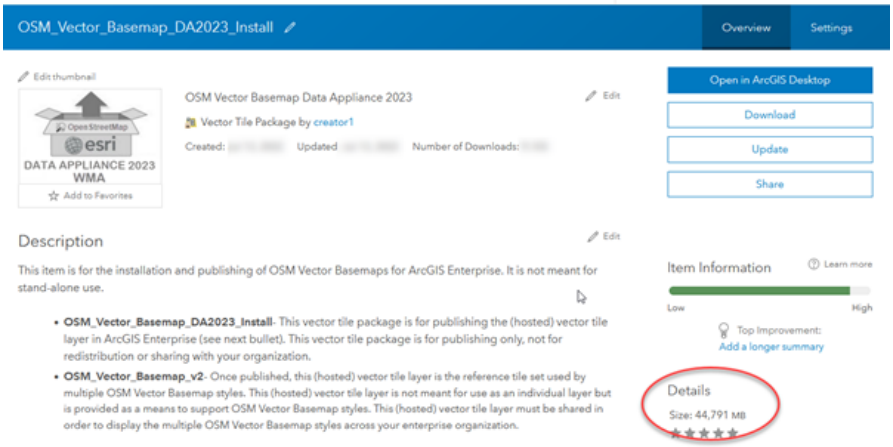
Do not change the **Credits** parameter value and do not check the **Everybody** or **Within Organization** check boxes for sharing.



6. Click **Run**.
   It will take approximately 30 to 120 minutes to upload the package to your portal. A **Share Package Uploaded Successfully** message appears in the **Share Package** window once the upload is complete.
7. Through your portal, confirm that the `.vtpk` file uploaded successfully.
   a. Open a web browser and sign in to your portal.
      The OSM_Vector_Basemap_DA2023_Install tile package is located in the root folder.
   b. Confirm that the **Size** value of the tile package matches the size for your vector tile package and Enterprise version in the following table and **Shared with** indicates that the item is not shared.

Vector tile package `.vtpk` file	Enterprise version	Size
`OSM_Vector_Basemap_DA2023_Install.vtpk` (WMA)	10.8.1, 10.9, 10.9.1	44,791 MB
	11.0	46,967 MB
`OSM_Vector_Basemap_GCS_DA2023_Install.vtpk` (WGS84)	10.8.1, 10.9, 10.9.1	44,982 MB
	11.0	47,167 MB
`OSM_Vector_Basemap_DAWB2023_Install.vptk` (WMA)	10.8.1, 10.9, 10.9.1	6,667 MB
	11.0	6,990 MB

Your item should look similar to the following when uploading `OSM_Vector_Basemap_DA2023_Install.vtpk` (WMA) in Enterprise 10.8.1, 10.9, and 10.9.1:



Note:
If the size is not is not correct, delete the item and upload the OSM_Vector_Basemap_DA2023_Install tile package again. You may want to discuss the problem with your portal administrator.

For the OSM_Vector_Basemap_GCS_DA2023_Install tile package, if the size is not correct, delete the item and upload it again.

For the OSM_Vector_Basemap_DAWB2023_Install.vptk tile package (WMA), if the size is not correct, delete the item and upload it again.

See the Troubleshooting OSM Vector Basemaps topic for more information.

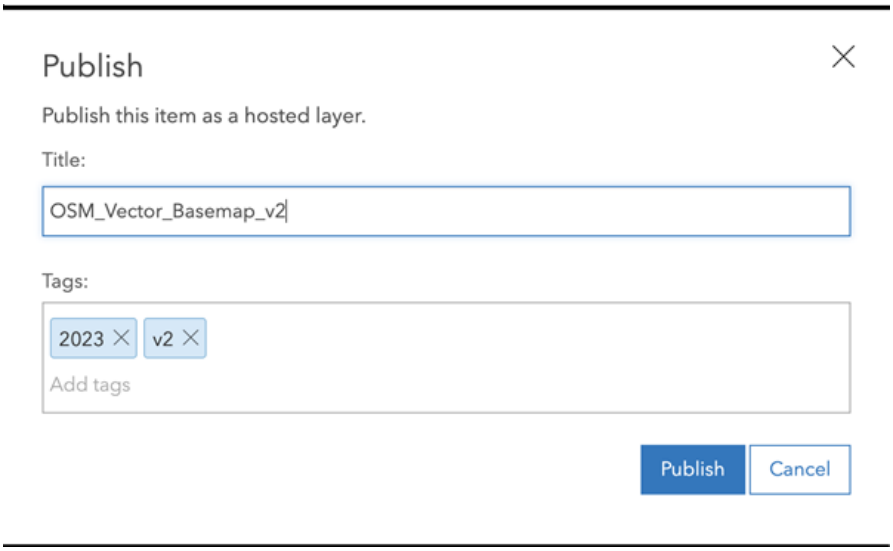
Publish the hosted tile layer (service)

Now you'll publish the OSM Vector Basemap hosted tile layer service from your portal.

1. Sign in to your ArcGIS Enterprise portal.

Note:
Your account must have publishing credentials.

2. In **My Content**, go to the item page for the vector tile package (`OSM_Vector_Basemap_DA2023_Install.vtpk`) you uploaded to your portal.
3. Click **Publish**, change the title to `OSM_Vector_Basemap_v2`, and click **Publish** again.

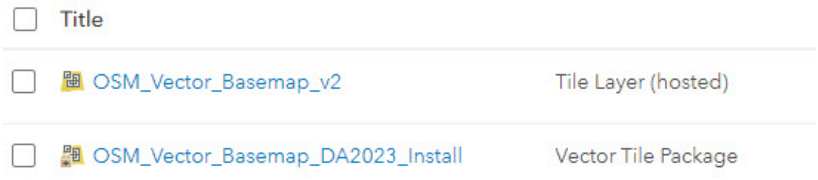


Note:
For the GCS tile package (`OSM_Vector_Basemap_GCS_DA2023_Install.vtpk`), change the title to `OSM_Vector_Basemap_GCS_v2`.

For the WB tile package, (`OSM_Vector_Basemap_DAWB2023_Install.vptk`), change the title to `OSM_Vector_Basemap_v2`.

Note:
It will take 30 to 120 minutes to create the hosted layer, depending on your system configuration.

The OSM_Vector_Basemap_v2 hosted tile layer is created.

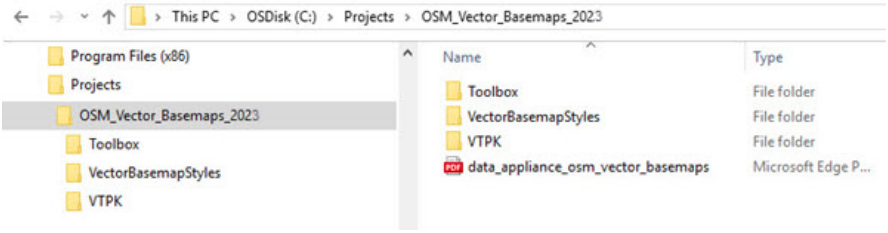


Publish tile layers (map styles)

You'll publish your map styles next.

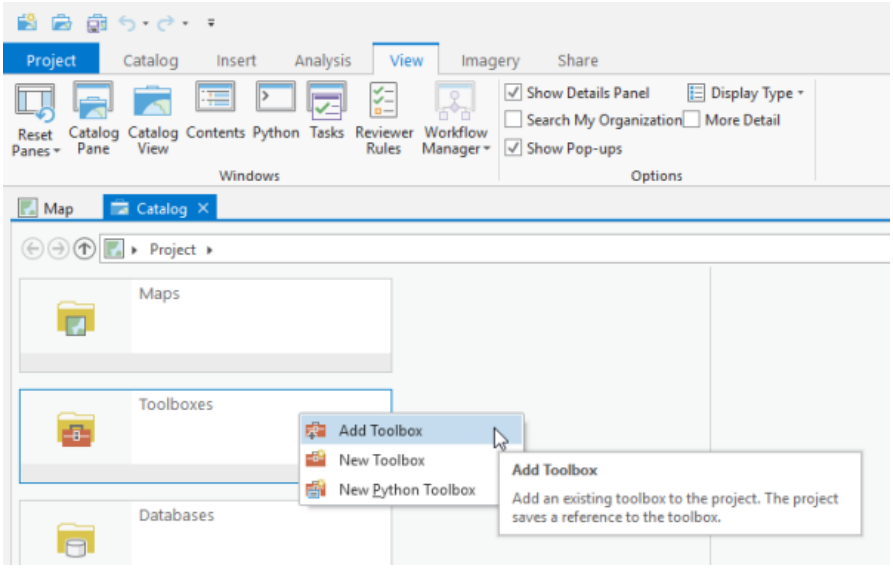
The VectorStylePublisher geoprocessing toolbox can be run in ArcGIS Pro. This toolbox publishes 10 new tile layers to your portal.

These instructions assume that the toolbox and VectorBasemapStyles folder are on your local computer.

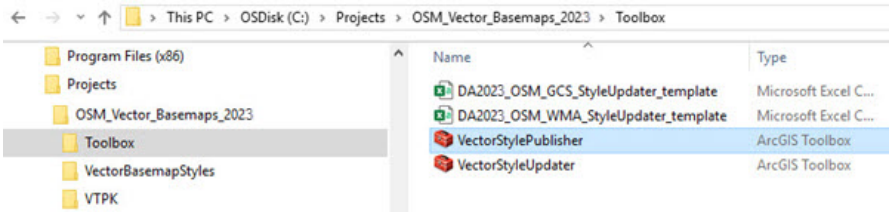


Note:
You must have a portal account assigned to the default publisher or administrator role, or your account must be assigned to a custom role that has privileges to create content and publish hosted tile layers.

1. Start ArcGIS Pro, sign in to your ArcGIS Enterprise portal, and select **Set As Active Portal**.
2. Create a project.
3. Click the **View** tab, click **Catalog View** in the **Windows** group, right-click **Toolboxes** in the Catalog view, and select **Add Toolbox**.

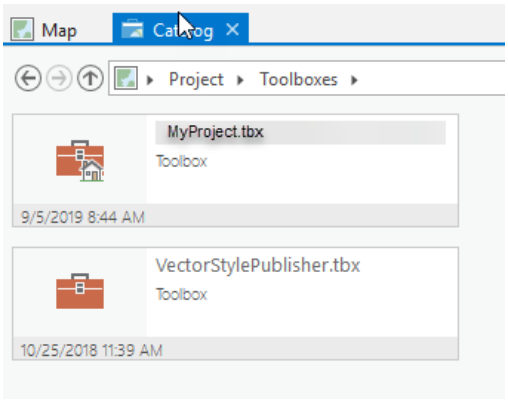


4. Browse to the location on your local computer where you copied the contents of the USB flash drive, select **VectorStylePublisher.tbx**, and click **OK**.

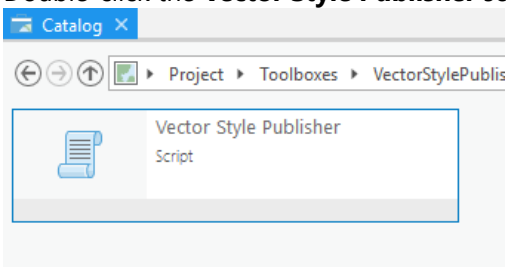


The VectorStylePublisher toolbox is added to the project.

5. Double-click **Toolboxes** and double-click **VectorStylePublisher.tbx**.



6. Double-click the **Vector Style Publisher** script.

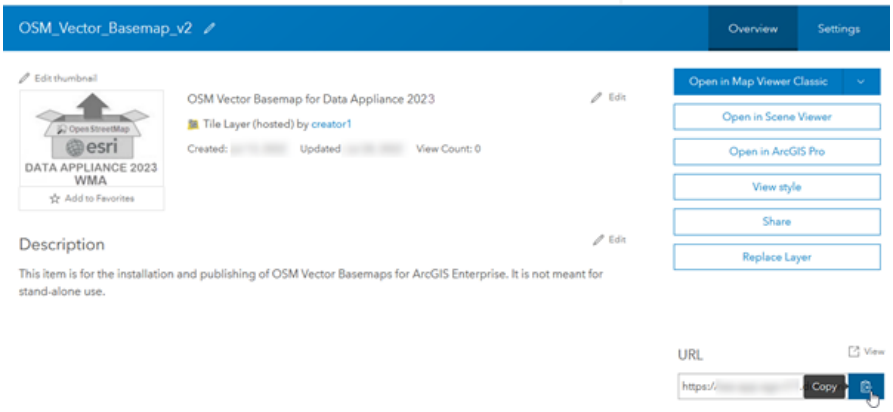


7. On the **Vector Style Publisher** dialog box, click the **Parameters** tab and do the following:

a. For **Folder containing vector styles**, browse to the location of the VectorBasemapStyles folder on your local computer, for example, `C:\Projects\OSM_Vector_Basemaps_2023\VectorBasemapStyles\WMA\WMA_NewUser`.

b. For **Vector Tile Service URL**, provide the URL of the OSM Vector Basemap hosted tile layer, for example, `https://portalname.domain.com/server/rest/services/Hosted/OSM_Vector_Basemap_v2/VectorTileServer`.

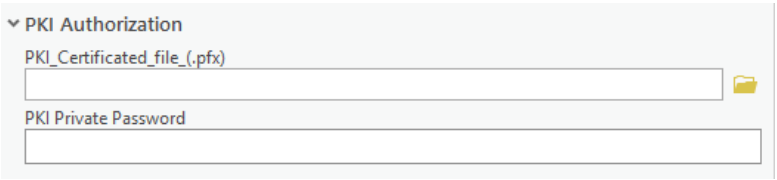
Note:
The vector tile service URL is in the **URL** section of the **OSM_Vector_Basemap_v2** hosted tile layer item page. Click the **Copy** button and paste the URL in the **Vector Tile Service URL** parameter text box.



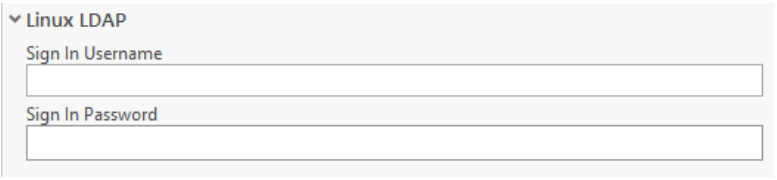
c. For **Metadata folder name**, keep the default name **metadata**.

Note:

If you are using a portal with PKI authentication, expand **PKI Authorization** and provide values for the **PKI_Certificated_file_(.pfx)** and **PKI Private Password** parameters.



If you are using a portal with Linux LDAP authentication, expand **Linux LDAP** and provide values for the **Sign In Username** and **Sign In Password** parameters.

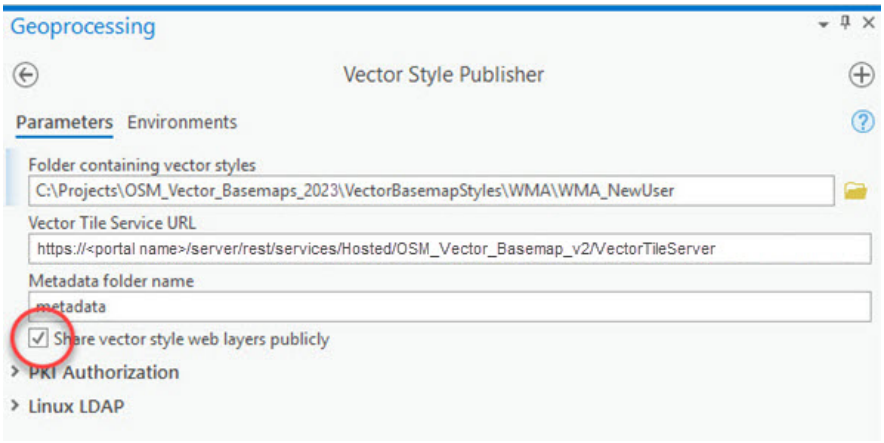


d. Click **Run**.

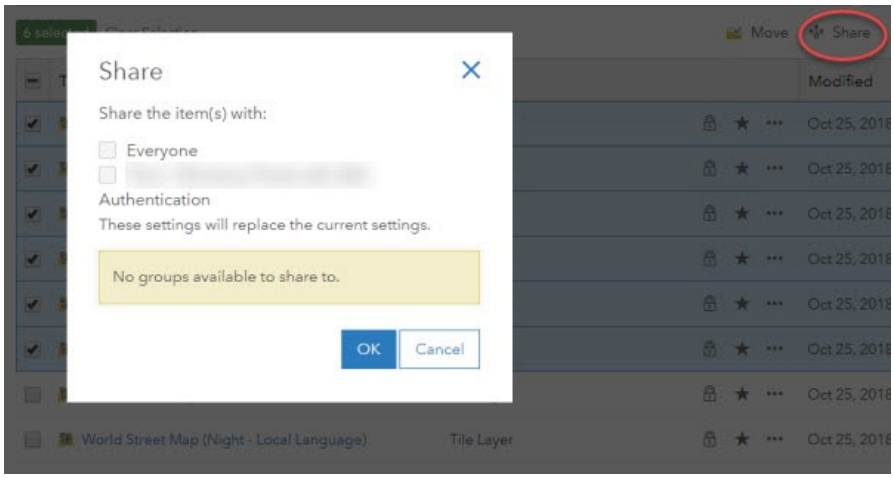
The 10 vector tile layers (map styles) are created in your assigned ArcGIS Enterprise account. You can view the items in **My Content**. Twelve items are listed: 10 vector tile layers, the `.vtpk` file, and the hosted tile layer.

Share tile layers (map styles)

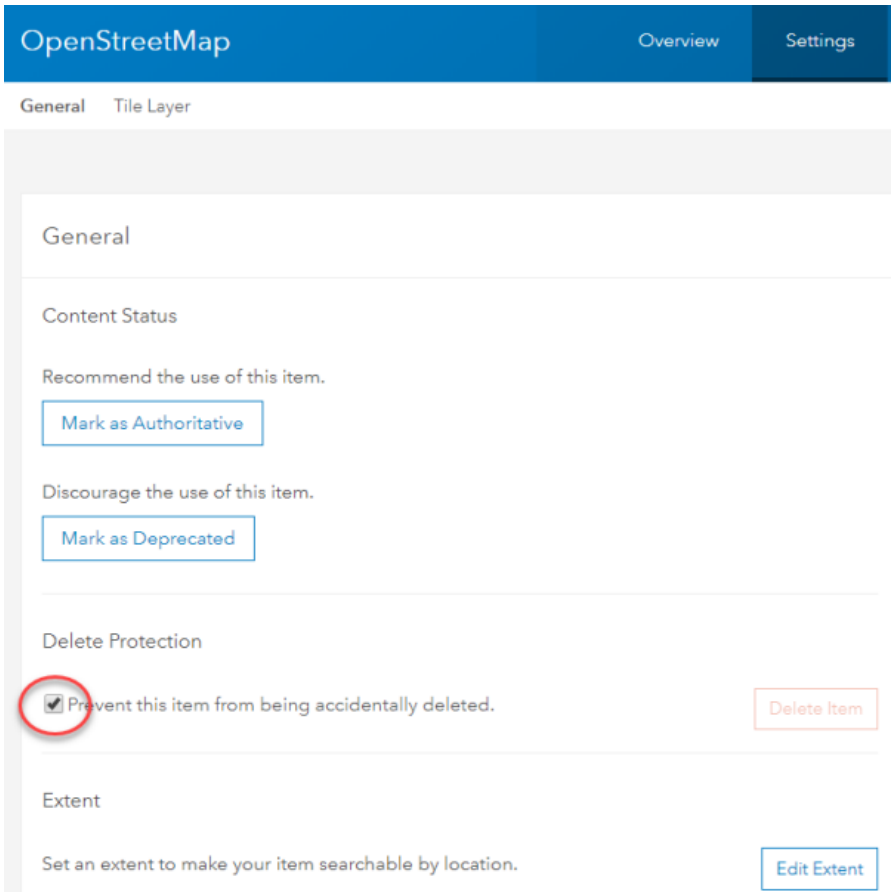
The items created are private unless you check the **Share vector style web layers publicly** check box to make them public.



Alternatively, you can select the map items in your portal and change the sharing settings.



Note:
Delete protection for all items is applied on publishing the tile layers. To change the protection setting, open the item and click the **Settings** tab. Under **Delete Protection**, uncheck **Prevent this item from being accidentally deleted** and click **Save**.



Once you set up OSM Vector Basemaps, you can do the following:

- Use OSM Vector Basemaps

- Customize styles

Set up OSM Vector Basemaps (existing user)

Follow the workflows below to update OSM Vector Basemaps in WMA.

Note:
To use OSM Vector Basemaps in the GCS format, complete the steps using the information for GCS.

For information about what's included with OSM Vector Basemaps, see OSM Vector Basemaps content and What's new.

You'll use the following workflow to update OSM Vector Basemaps:

1. Upload the package to your ArcGIS Enterprise portal
2. Publish the new hosted tile layer (service)

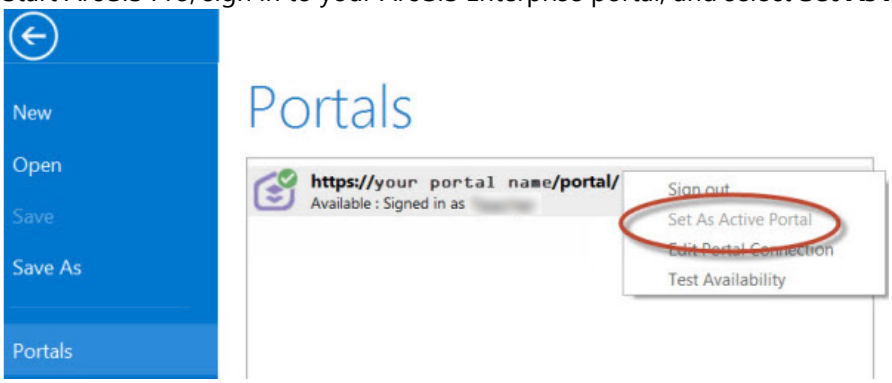
   Note:
   The title of the new hosted tile layer must be different than the title of the existing hosted tile layer (for example, the name of the new layer is OSM_Vector_Basemap_DA2023_v2).

3. Replace the existing hosted tile layer (service) with the new hosted tile layer
4. Update existing tile layers (map styles)
5. Share tile layers (map styles)

Upload the package to your ArcGIS Enterprise portal

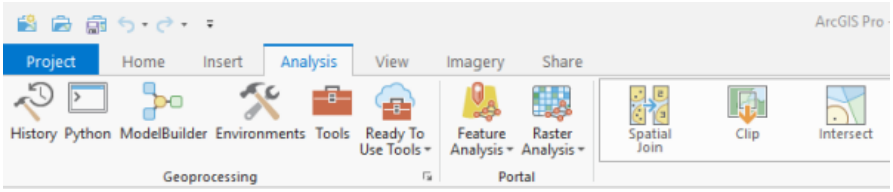
First, you need to copy the entire USB flash drive contents to your local computer if you have not already done so. Review the system requirements to confirm that you can deploy the OSM Vector Basemaps update.

1. Start ArcGIS Pro, sign in to your ArcGIS Enterprise portal, and select **Set As Active Portal**.



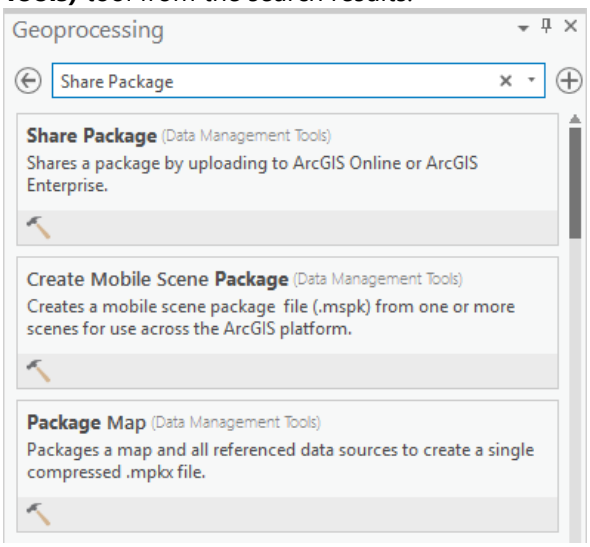
   Note:
   You must sign in and connect to your portal before you proceed. You cannot enter your portal username and password when using the Share Package tool later in these instructions. The tool obtains your credentials from ArcGIS Pro.

2. Create a project.
3. Click the **Analysis** tab, and click **Tools** in the **Geoprocessing** group.



The **Geoprocessing** pane appears.

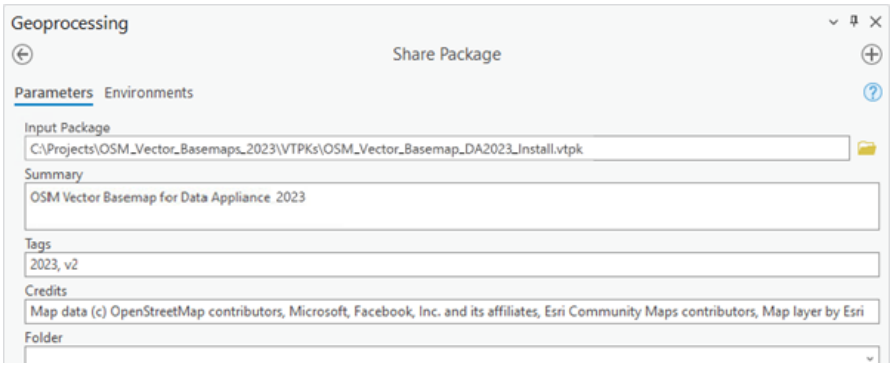
4. In the **Geoprocessing** pane, search for `Share Package`, and select the **Share Package (Data Management Tools)** tool from the search results.



5. On the **Share Package** dialog box, do the following:
   a. For **Input Package**, provide the path to the vector tile package, for example, `C:\Projects\OSM_Vector_Basemaps_2023\VTPK\OSM_Vector_Basemap_DA2023_Install.vtpk`.
   b. For **Summary**, type `OSM Vector Basemap for Data Appliance 2023`.
   c. For **Tags**, type `2023, v2`.

⚠ Caution:

Do not change the **Credits** parameter value and do not check the **Everybody** or **Within Organization** check boxes for sharing.



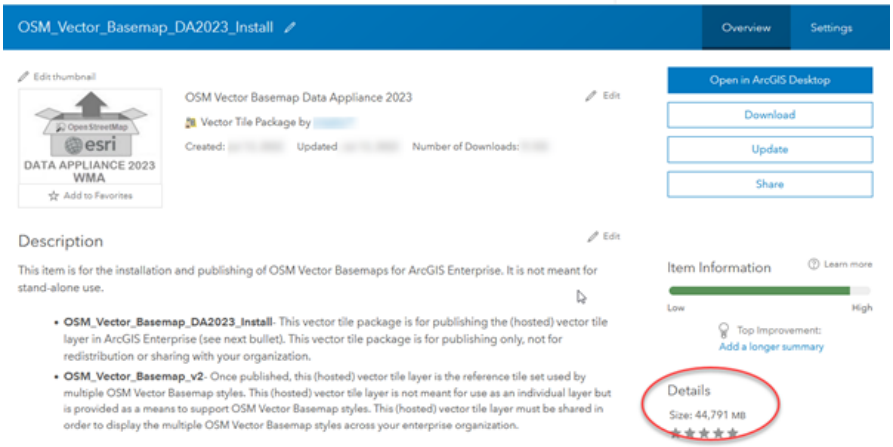
6. Click **Run**.

It will take approximately 30 to 120 minutes to upload the package to your portal. A **Share Package Uploaded Successfully** message appears in the **Share Package** window once the upload is complete.

7. Through your portal, confirm that the `.vtpk` file uploaded successfully.
   a. Open a web browser and sign in to your portal.
   The OSM_Vector_Basemap_DA2023_Install tile package is located in the root folder.
   b. Under **Details**, confirm that the **Size** value of the tile package matches the size for your vector tile package and Enterprise version in the following table and **Shared with** indicates that the item is not shared.

Vector tile package `.vtpk` file	Enterprise version	Size
`OSM_Vector_Basemap_DA2023_Install.vtpk` (WMA)	10.8.1, 10.9, 10.9.1	44,791 MB
	11.0	46,967 MB
`OSM_Vector_Basemap_GCS_DA2023_Install.vtpk` (WGS84)	10.8.1, 10.9, 10.9.1	44,982 MB
	11.0	47,167 MB

Your item should look similar to the following when uploading `OSM_Vector_Basemap_DA2023_Install.vtpk` (WMA) in Enterprise 10.8.1, 10.9, and 10.9.1:



Note:
If the size is not correct, delete the item and upload the OSM_Vector_Basemap_DA2023_Install tile package again. You may want to discuss the problem with your portal administrator.

For the OSM_Vector_Basemap_GCS_DA2023_Install tile package, if the size is not correct, delete the item and upload it again.

See the Troubleshooting OSM Vector Basemaps topic for more information.

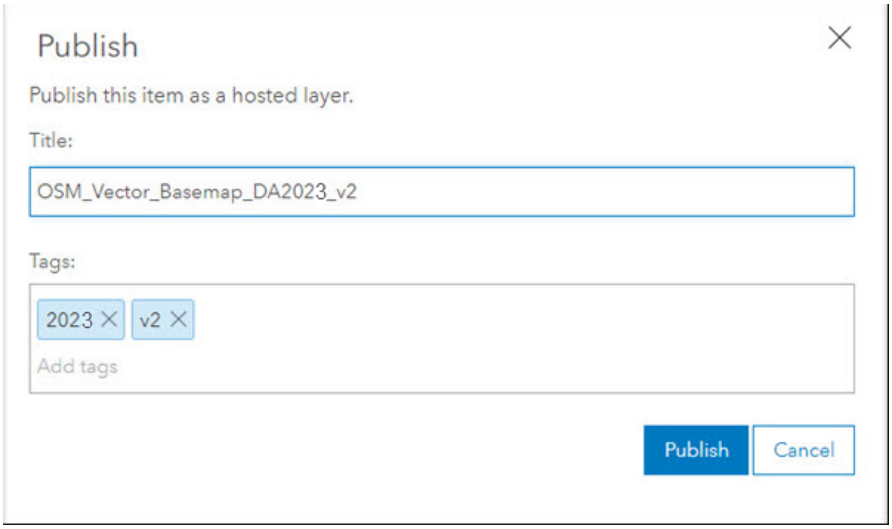
Publish the new hosted tile layer (service)

Now you'll publish the new OSM Vector Basemaps hosted tile layer service from your portal.

1. Sign in to your ArcGIS Enterprise portal.

Note:
Your account must have publishing credentials.

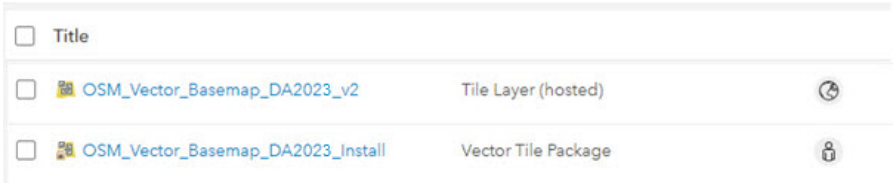
2. In **My Content**, go to the item page for the vector tile package (`OSM_Vector_Basemap_DA2023_Install.vtpk`) you uploaded to your portal.
3. Click **Publish**, change the title to `OSM_Vector_Basemap_DA2023_v2`, and click **Publish** again.



Note:
For the GCS tile package, use the `OSM_Vector_Basemap_GCS_DA2023_Install.vtpk` file. Change the title to `OSM_Vector_Basemap_GCS_DA2023_v2` for the hosted tile layer that is published.

Note:
It will take 30 to 120 minutes to create the hosted layer, depending on your system configuration.

The OSM_Vector_Basemap_DA2023_v2 hosted tile layer is created.



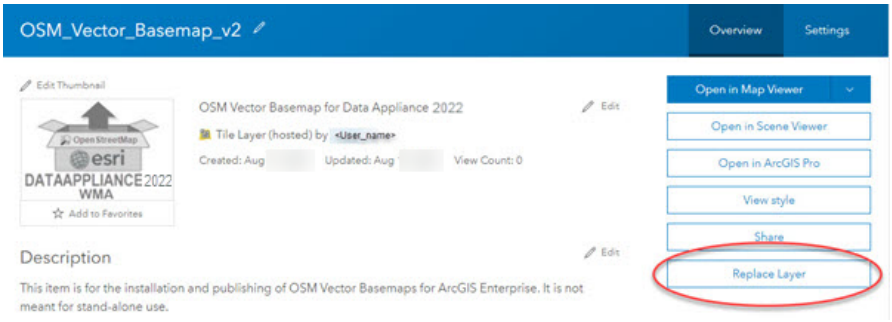
Replace the existing hosted tile layer (service) with the new hosted tile layer (service)

Next, you'll replace the 2022 basemap hosted tile layer (service) with the 2023 hosted tile layer (service).

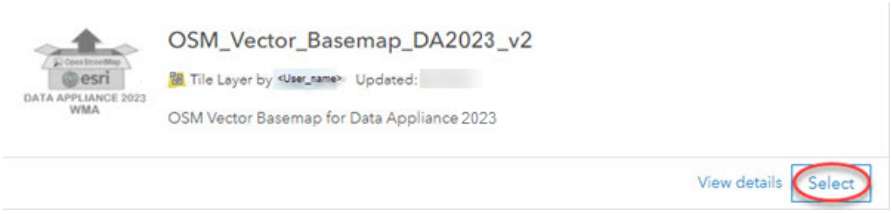
1. Sign in to your ArcGIS Enterprise portal.

Note:
Your account must have publishing credentials.

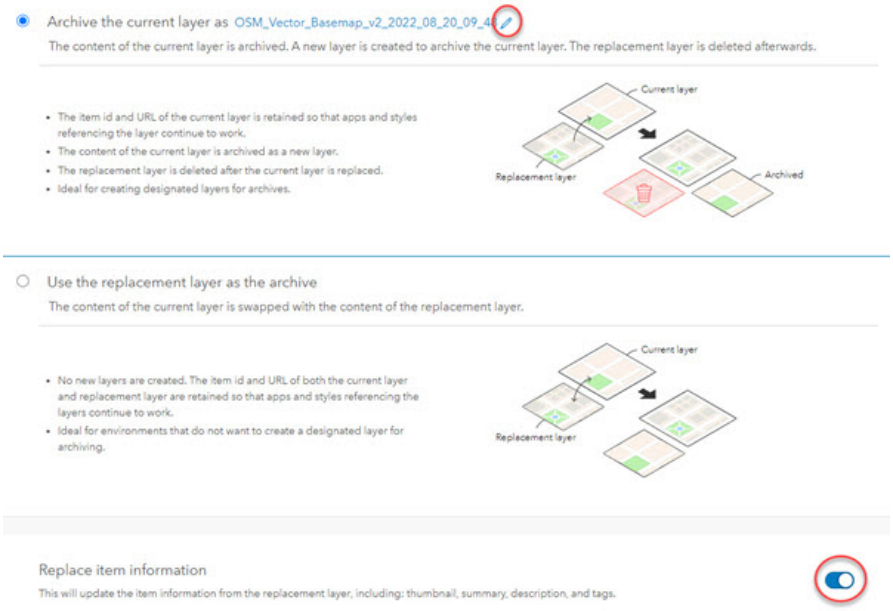
2. In **My Content**, go to the item page for the **OSM_Vector_Basemap_v2** vector tile service.
3. Click **Replace Layer**.



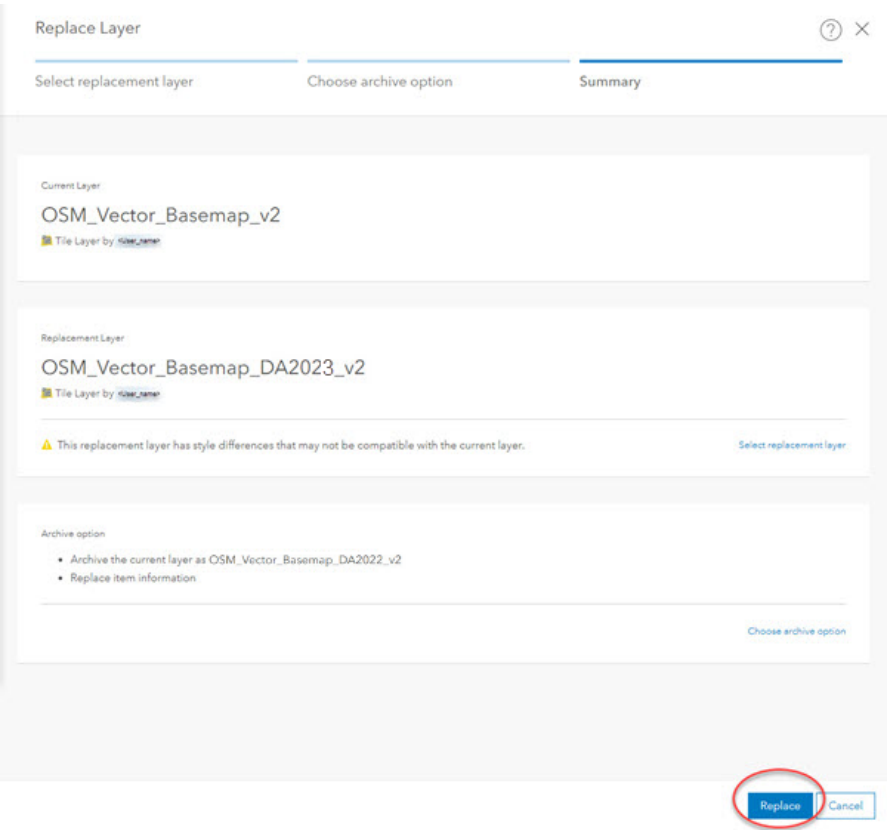
4. Click **Select**.



5. For **Archive the current layer as**, click the edit button and change the value to `OSM_Vector_Basemap_DA2022_v2` and click **Save**. Then, scroll to **Replace item information** and turn it on.



6. Click **Next**.
7. On the **Replace Layer** summary, click **Replace**.



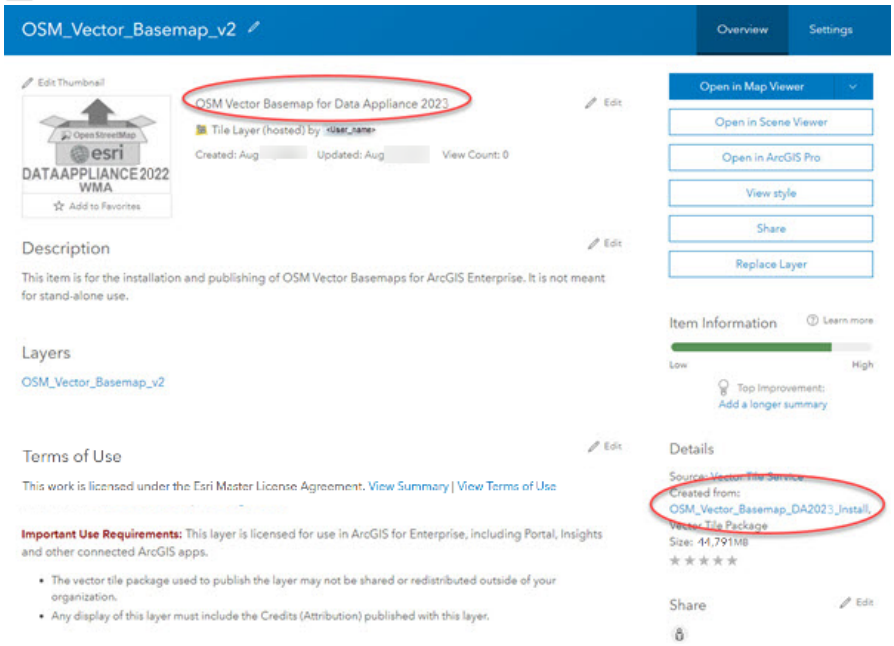
Note:

The current layer starts as DA2022. The replacement layer is DA2023. You are archiving the DA2022 hosted tile layer, and the current layer (OSM_Vector_Basemap_v2) now displays the DA2023 hosted tile layer. Replacing the tile set allows the item ID and URL paths to remain intact, so maps and apps continue to work with the current layer and display the new DA2023 basemap content.

The **Success** message flashes briefly at the top of the screen.

8. To verify a successful replacement, in **My Content**, go to the item page for the **OSM_Vector_Basemap_v2** vector tile service.
   Your item should look like the following:

Note:

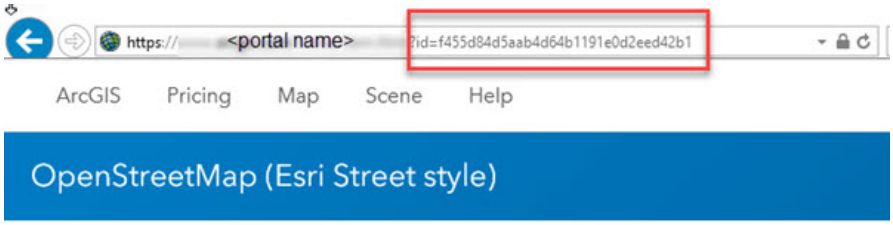


The thumbnail is not replaced, but the summary is OSM Vector Basemap for Data Appliance 2023 and the **Details** section indicates it was created from the OSM_Vector_Basemap_DA2023_Install Vector Tile Package.

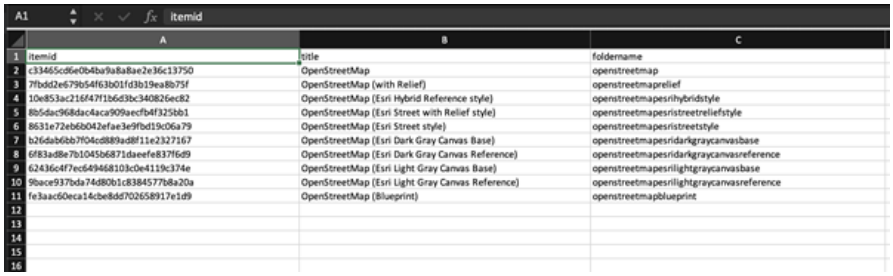
Update existing tile layers

Use the Vector Style Updater tool to update your existing layers.

1. Open the `DA2023_OSM_WMA_StyleUpdater_template.csv` file located in the `C:\Projects\OSM_Vector_Basemaps_2023\Toolbox` folder.
   a. Include the item IDs of all your existing styles in the **itemid** column in this table. The item ID for each style can be obtained from the portal URL for each style. Only copy and paste the series of letters and numbers after `...id=`.

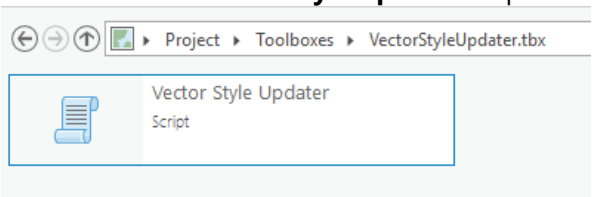


   b. Once you fill in the **itemid** column, save the file and rename it `DA2023_OSM_WMA_StyleUpdater.csv`.

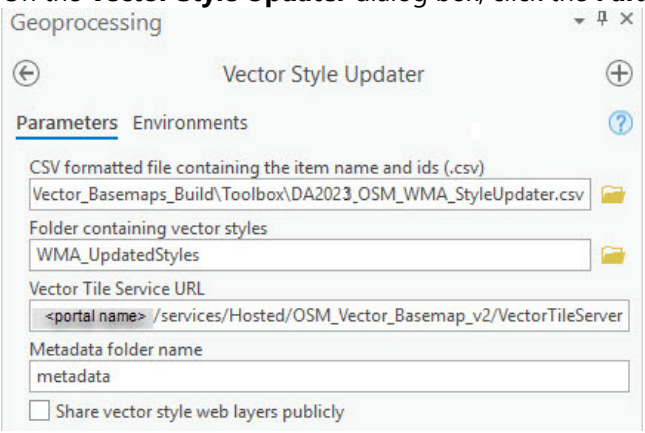


Note:
These are example item IDs. Use the IDs that are unique to your items in your portal.

2. Run the Vector Style Updater tool.
   a. Start ArcGIS Pro, sign in to your ArcGIS Enterprise portal, and click **Set As Active Portal**.
   b. Create a project.
   c. Click the **View** tab, click **Catalog View** in the **Windows** group, right-click **Toolboxes**, and click **Add Toolbox**.
   d. Browse to the location on your local computer where you copied the contents of the USB flash drive, click **VectorStyleUpdater.tbx**, and click **OK**.
   The VectorStyleUpdater toolbox is added to the project.
   e. Double-click **Toolboxes**, and double-click **VectorStyleUpdater.tbx**.
   f. Double-click the **Vector Style Updater** script.

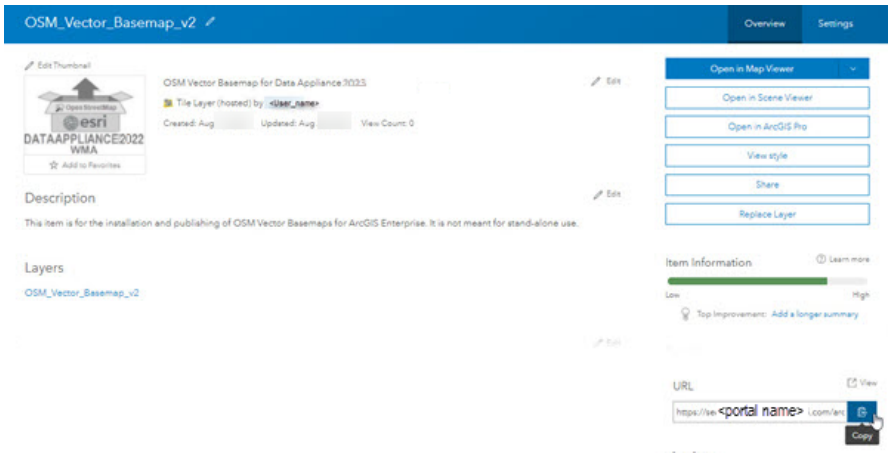


   g. On the **Vector Style Updater** dialog box, click the **Parameters** tab and do the following:



      i. For **CSV formatted file containing the item name and ids (.csv)**, browse to the location of the `DA2023_OSM_WMA_StyleUpdater.csv` file on your local computer.
      ii. For **Folder containing vector styles**, browse to the location of the WMA Updated Styles folder on your local computer, for example, `C:\Projects\OSM_Vector_Basemaps_2023\VectorBasemapStyles\WMA\WMA_ExistingUser\WMA_UpdatedStyles`.
      iii. For **Vector Tile Service URL**, provide the URL of the OSM Vector Basemap tile layer that you replaced above, for example, `https://portalname.domain.com/server/rest/services/Hosted/OSM_Vector_Basemap_v2/VectorTileServer`.

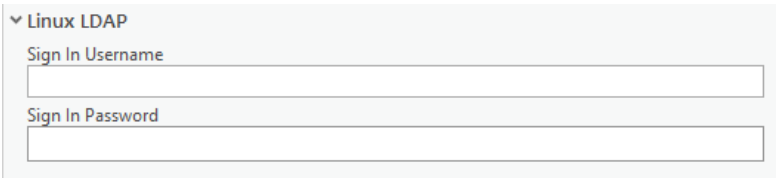
Note:
The vector tile service URL is in the URL section of the **OSM_Vector_Basemap_v2** hosted tile layer item page. Click the **Copy** button and paste the URL in the **Vector Tile Service URL** parameter text box.



iv. For **Metadata folder name**, keep the default name **metadata**.

Note:
If you are using a portal with PKI authentication, expand **PKI Authorization** and provide values for the **PKI Certificated file (.pfx)** and **PKI Private Password** parameters.

If you are using a portal with Linux LDAP authentication, expand **Linux LDAP** and provide values for the **Sign In Username** and **Sign In Password** parameters.



3. Click **Run**.
   It can take up to a minute to update each existing style in your portal using the Vector Style Updater tool.

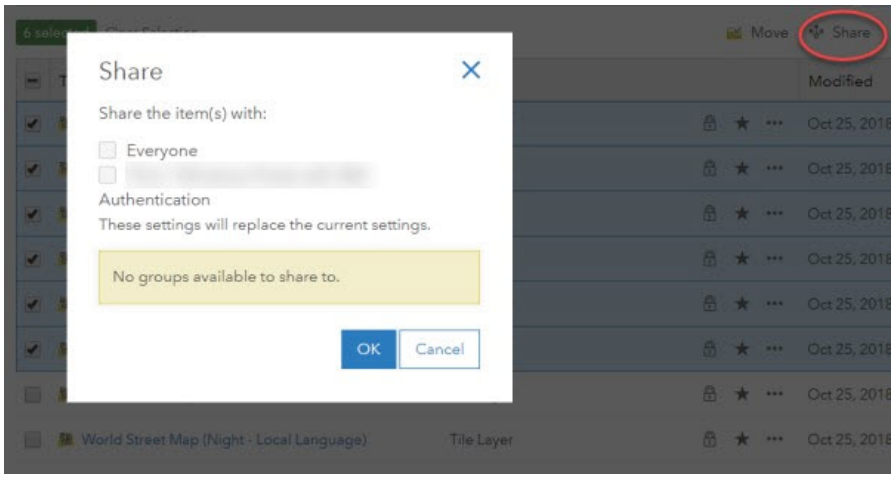
   The VectorStyleUpdater toolbox displays a successful update message when complete.

Note:
If there are warnings, rerun the VectorStyleUpdated toolbox until you receive a successful update message.

The 10 vector tile layers (map styles) are updated in your assigned ArcGIS Enterprise account. You can view the 10 items in **My Content**.

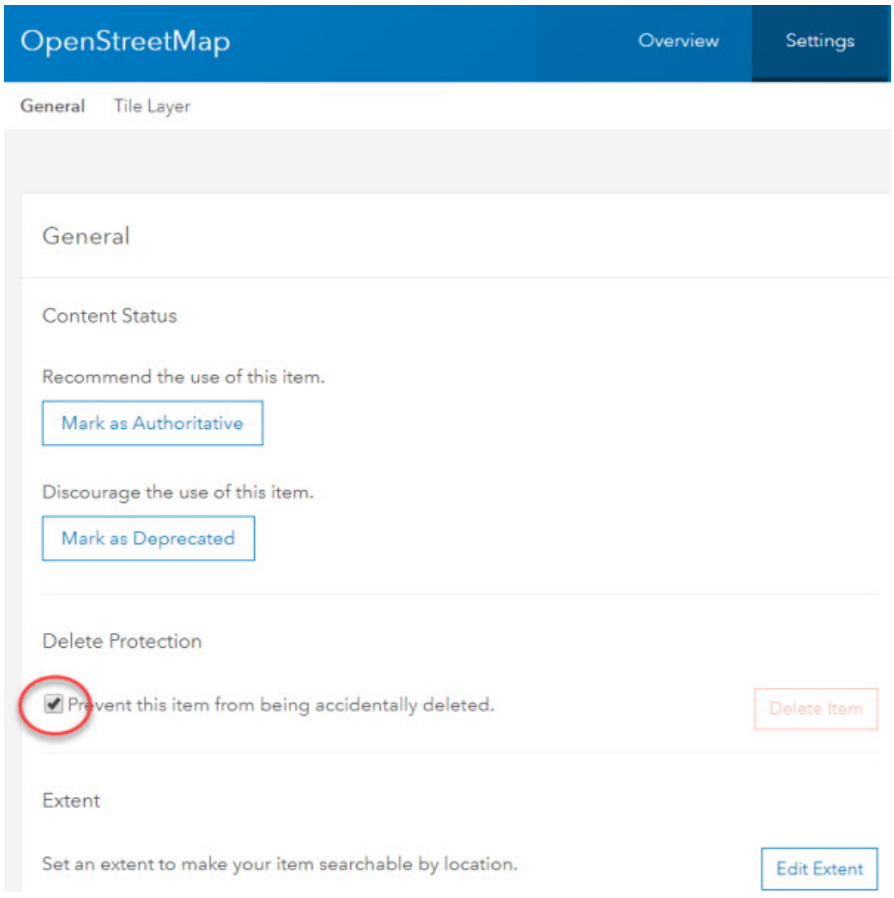
Share tile layers (map styles)

The items initially created are private unless you made them public through the **Publisher toolbox** dialog box or by selecting the map items in your portal and changing the sharing settings.



Note:

Delete protection for all items is applied on publishing the tile layers. To change the protection setting, open the item and click the **Settings** tab. Under **Delete Protection**, uncheck **Prevent this item from being accidentally deleted** and click **Save**.



Once you set up the OSM Vector Basemaps update, you can do the following:

- Use OSM Vector Basemaps
- Customize styles

Troubleshooting OSM Vector Basemaps

Listed below are issues you may encounter when working with OSM Vector Basemaps content as well as recommended solutions.

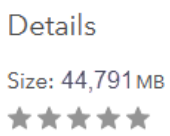
What if the size of the uploaded `.vtpk` file does not match the size of the source `.vtpk` file?

If your hosted tile layer service did not publish successfully, an issue may have occurred during the upload of the vector tile package (`.vtpk`) file to your portal. The size of the `.vtpk` file on disk and the size of the uploaded file on your portal must match.

Confirm that the **Size** value of the tile package matches the size for your vector tile package and Enterprise version in the following table:

Vector tile package `.vtpk` file	Enterprise version	Size
`OSM_Vector_Basemap_DA2023_Install.vtpk` (WMA)	10.8.1, 10.9, 10.9.1	44,791 MB
	11.0	46,967 MB
`OSM_Vector_Basemap_GCS_DA2023_Install.vtpk` (WGS84)	10.8.1, 10.9, 10.9.1	44,982 MB
	11.0	47,167 MB
`OSM_Vector_Basemap_DAWB2023_Install.vptk` (WMA)	10.8.1, 10.9, 10.9.1	6,667 MB
	11.0	6,990 MB

You can check the size of the uploaded vector tile package (supporting the service) on the item details page. The following screenshot shows the OSM_Vector_Basemap_DA2023_Install vector tile package details in Enterprise 10.8.1, 10.9, or 10.9.1:



If the size does not match, review the log via the server manager to see if there are any errors.

In some cases, the ArcGIS Pro Share Package geoprocessing tool may have produced a **Success** message, but when you check the size of the `.vtpk` file from the item details page, it does not match. Here are some things that you can try to resolve this issue:

- Upload the `.vtpk` file again. First, delete the `OSM_Vector_Basemap_DA2023_Install.vtpk`, `OSM_Vector_Basemap_GCS_DA2023_Install.vtpk`, or `OSM_Vector_Basemap_DAWB2023_Install.vptk` file from your portal. Next, upload the `OSM_Vector_Basemap_DA2023_Install.vtpk`, `OSM_Vector_Basemap_GCS_DA2023_Install.vtpk`, or `OSM_Vector_Basemap_DAWB2023_Install.vptk` file again using the ArcGIS Pro Share Package geoprocessing tool.
- Verify with your portal administrator that there is at least 96 GB of disk space per `.vtpk` file available on your Enterprise 11.0 portal (14 GB is required for OSM Vector Basemaps: Basic). Enterprise 10.8.1, 10.9, or 10.9.1 requires at least 90 GB of disk space per `.vtpk` file (14 GB is required for OSM Vector Basemaps: Basic). Ensure that there is space on `<ArcGIS portal install drive>\arcgis\arcgisportal` where the content items are stored.
- Verify that you are using a supported version of ArcGIS Pro. See the system requirements for details.

Contact Esri Technical Support if you still cannot successfully upload the `.vtpk` file.

Note:
The following answers reflect troubleshooting of the WMA vector tile package and service. To troubleshoot the GCS vector tile package and service, you need to take the GCS naming into consideration. To troubleshoot the Basic vector tile package and service, you need to take the WB naming into consideration.

What if I encounter the There was an error message when I try to publish the service?

Work with your systems administrator to check the ArcGIS Server Manager logs.

If there is an error due to a geoprocessing service (PublishingTools) timing out or crashing, you may have skipped a system requirements step. Confirm that you changed the value of **The maximum time a client can use a service** to 21,600 seconds.

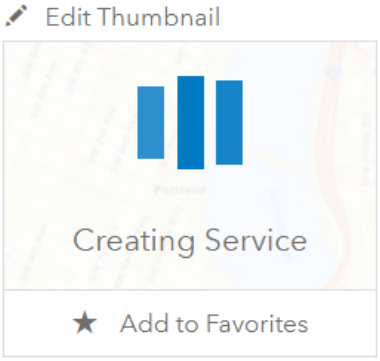
Once you have updated the geoprocessing service maximum time, do the following:

1. On your server, delete the `OSM_Vector_Basemap_v2` or `OSM_Vector_Basemap_GCS_v2` hosted tile layer.
2. On the ArcGIS Server machine, delete the job in the `<ArcGIS_Server_Install_Path>\arcgis\arcgisserver\directories\arcgisjobs\system\publishingtools_gpserver\<Job_ID>` folder.

   Note:
   You can find the job ID in the log file.

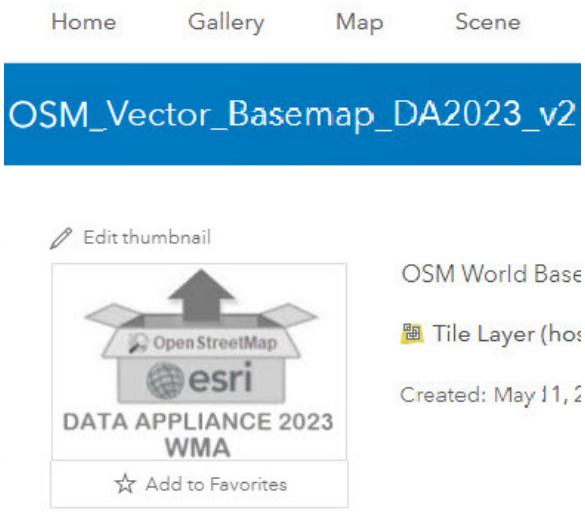
3. Restart the server.
4. For Enterprise 11.0, verify that you have at least 96 GB of available space per `.vtpk` file on ArcGIS Server (14 GB for OSM Vector Basemaps: Basic). For Enterprise 10.8.1, 10.9, or 10.9.1, verify that you have at least 90 GB of available space per `.vtpk` file on ArcGIS Server (14 GB for OSM Vector Basemaps: Basic).
5. In your portal, publish the `OSM_Vector_Basemap_v2` or `OSM_Vector_Basemap_GCS_v2` tile layer again.

What do I do if the progress bar keeps loading when I'm trying to publish my service?



If the **Creating Service** progress bar continues to load after two hours, the browser connection to the portal may have failed.

Sign out of the portal and sign in again to see if the thumbnail has changed to the Data Appliance 2023 icon, because the browser connection does not affect the creation of the service.



If the thumbnail changes to the Data Appliance 2023 icon, confirm that the map displays as expected.

Additional resources

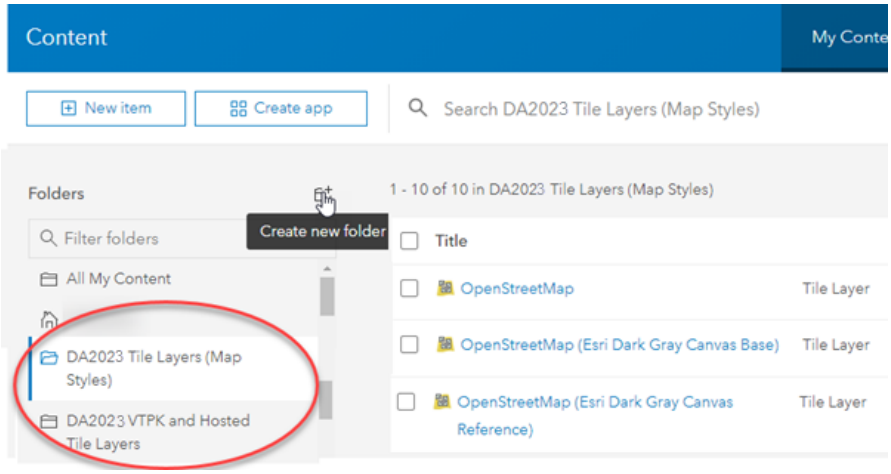
The following resources are available for OSM Vector Basemaps:

- ArcGIS Data Appliance 2023: OSM Vector Basemaps help [PDF]
- ArcGIS Data Appliance 2023: Esri Vector Basemaps New user information video [captioned MP4] demonstrating uploading, updating, and publishing Esri Vector Basemaps to your portal—Instructions for uploading and publishing OSM Vector Basemaps are similar to Esri Vector Basemaps. The names of the files and styles used in the video reflect the source data. Substitute OpenStreetMap file names for Esri Vector Basemaps file names when following the instructions in the video.
- ArcGIS Data Appliance 2023: Esri Vector Basemaps Existing user information video [captioned MP4] demonstrating uploading, updating, and publishing Esri Vector Basemaps to your portal—Instructions for uploading and publishing OSM Vector Basemaps are similar to Esri Vector Basemaps. The names of the files and styles used in the video reflect the source data. Substitute OpenStreetMap file names for Esri Vector Basemaps file names when following the instructions in the video.
- Tile layers, Customize basemaps, and Choose basemap in the Portal for ArcGIS help
- New ways of customizing Esri Vector Basemaps blog post
- Create a custom basemap style using the ArcGIS Vector Tile Style Editor on the ArcGIS Developer website

Use

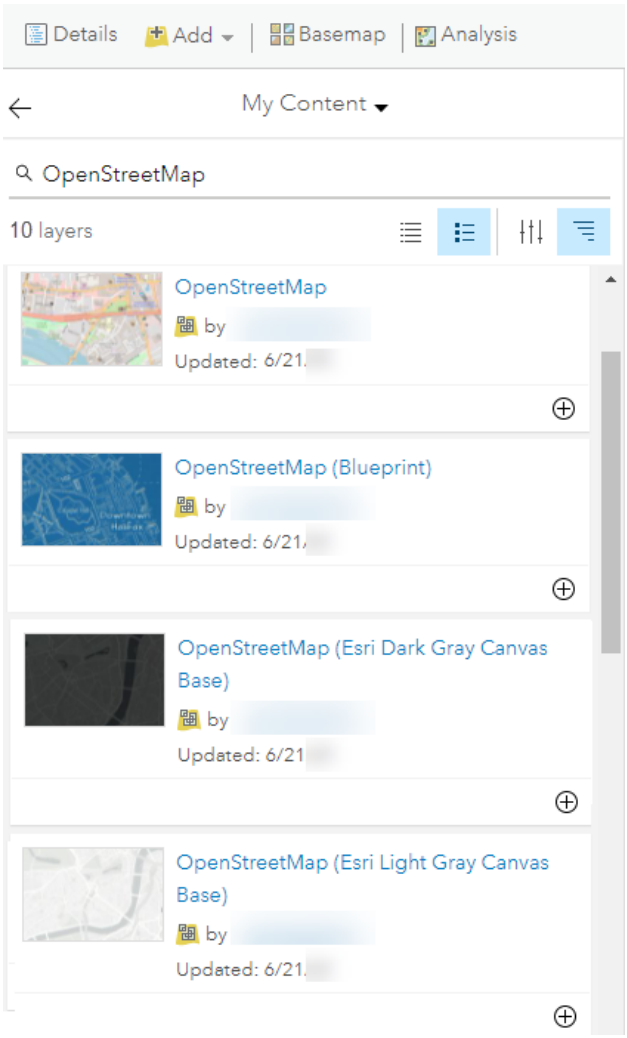
Use OSM Vector Basemaps

With the addition of vector tile packages (`.vtpk`), hosted tile layers, and tile layers in your portal, a number of items appear in your ArcGIS Enterprise **Content** window. With the correct administrative privileges, you can create folders, groups, and categories. By creating folders and moving items into them, you can organize your **Content** window to make it easier to find the items you are looking for. The following image shows some folder name suggestions. See Manage content in the Portal for ArcGIS help for information about managing content in ArcGIS Enterprise.

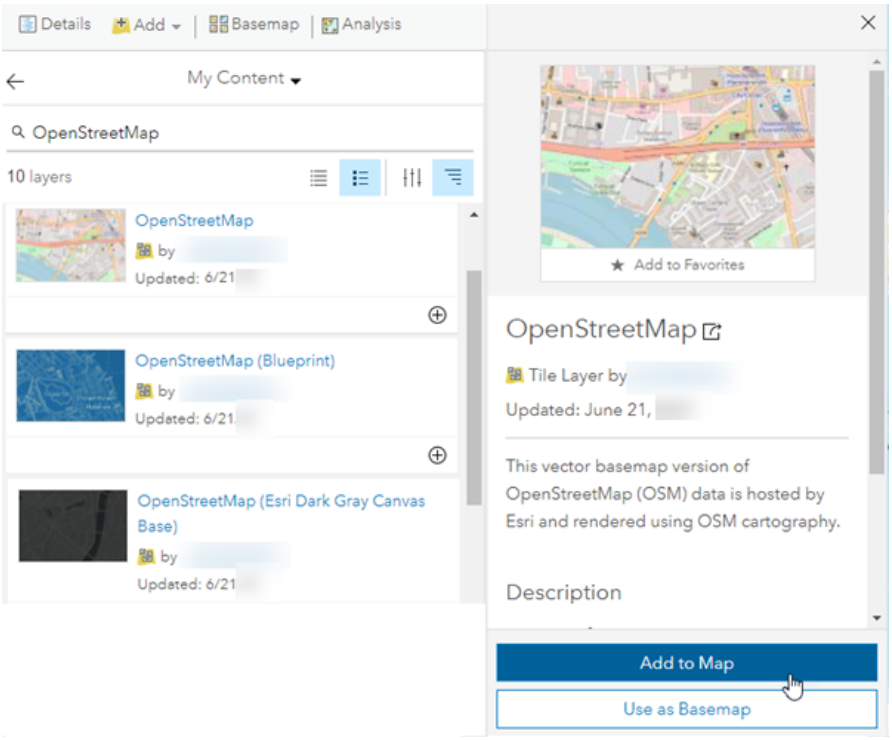


You can use OSM Vector Basemaps in your applications in the following ways:

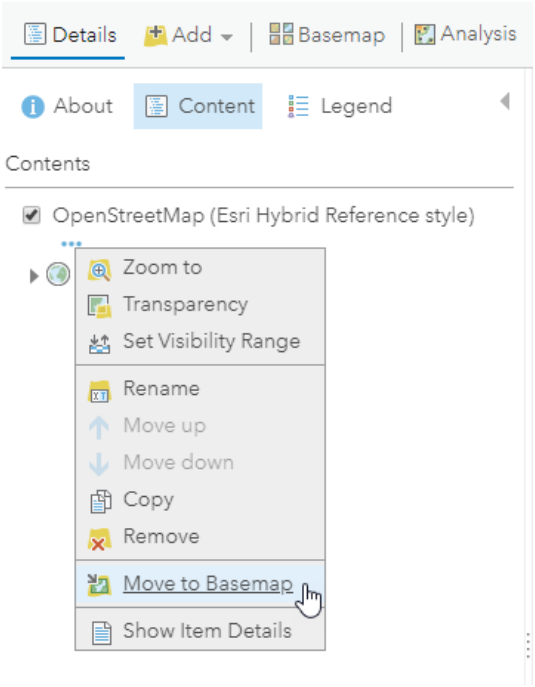
- Add the 10 map tile layers (styles) to a map in ArcGIS Pro or to Map Viewer Classic in your Enterprise portal.



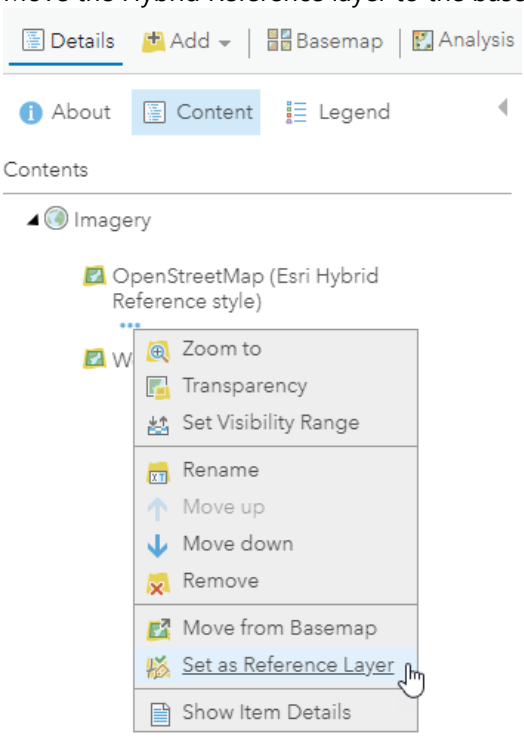
- Add the tile layers (styles) to an existing basemap, or add them as the basemap.



- You can use 3 of the 10 map tile layers (styles) with a raster layer—World Hillshade or World Imagery—as the basemap in their web map:
  - OpenStreetMap (with relief)—World Hillshade
  - OpenStreetMap (Esri Street with Relief style)—World Hillshade
  - OpenStreetMap (Esri Hybrid Reference style)—World Imagery
- If you have a tile layer (style) in your map, you can move it to the basemap.



- Move the Hybrid Reference layer to the basemap and set as the reference layer over the World Imagery layer.



- Move the OpenStreetMap Dark Gray or Light Gray Canvas Reference layers to the basemap and set them as the reference layer over the Canvas Base layer.

Customize styles

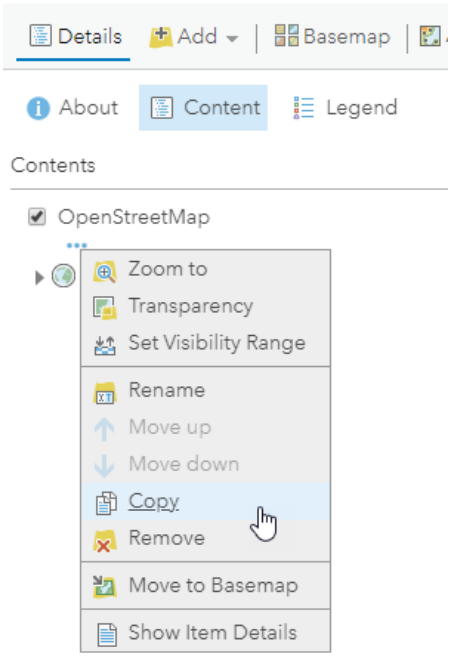
With ArcGIS Data Appliance: OpenStreetMap Vector Basemaps, you can modify and customize the map style. You can customize the map by changing the hex color codes of map features or labels, removing feature classes, changing fonts (face, size, and color), or making other edits. For more information, see the vector basemap blog post on the ArcGIS Blog website.

Customization requires changes to the map style's `resources\styles\root.json` file. There are two main ways to customize your maps: add a style to the map in Map Viewer Classic or copy a `root.json` style from the USB flash drive. You can use the ArcGIS Vector Tile Style Editor. Then you can edit the custom style map item to include a new thumbnail and update the item's information for your custom style.

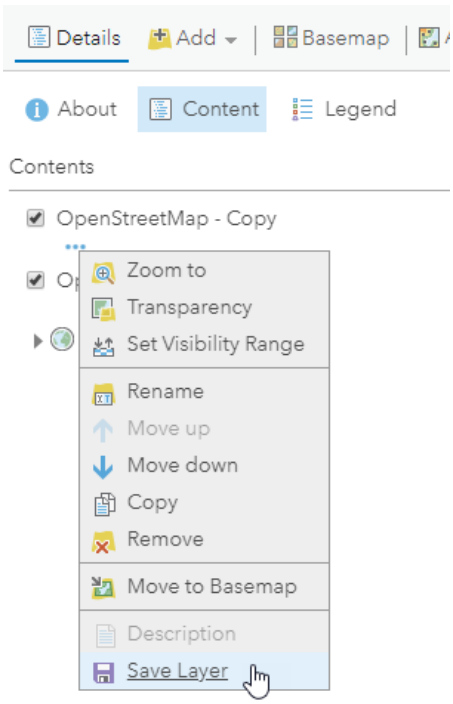
Add a style to the map in Map Viewer Classic and rename the style

To add a style using Map Viewer Classic, complete the following steps:

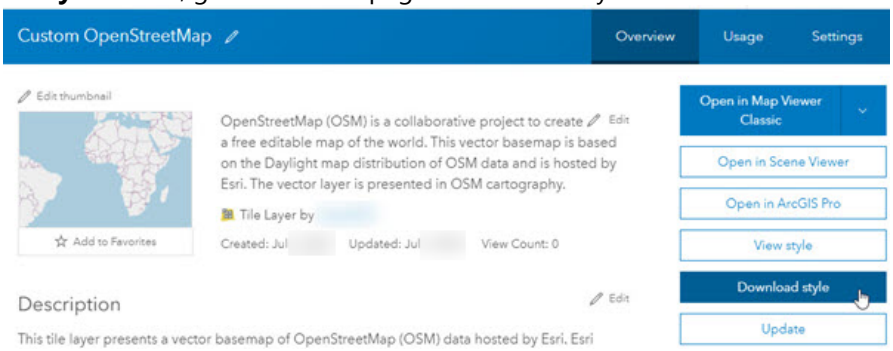
1. In your Enterprise portal, open the style you want to customize in Map Viewer Classic, for example, OpenStreetMap.
2. Click **More Options** ••• and select **Copy**.



   A new OpenStreetMap - Copy layer is added to the top of the **Contents** pane.
3. Click **More Options** ••• and select **Save Layer**.



4. Rename the style, for example, `Custom OpenStreetMap`, and select the folder where you want to save the new style.
5. In **My Content**, go to the item page for the new style and click the **Download style** button.

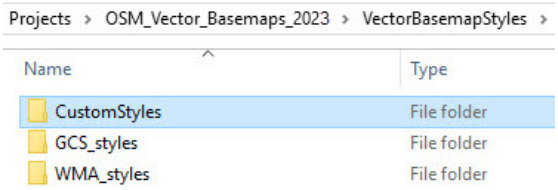


   The style (`root.json` file) is saved to your computer.
6. Open the `root.json` file in a text editor such as Adobe Brackets or Notepad++, and edit and save the file. Edits to the `root.json` file can be color value, line width, font size, and so on.
7. Validate the JSON using JSONLint or a similar JSON validation tool. You can also use this website to parse the JSON into a more user-friendly format before editing.
8. On the item page for the new style, click the **Update** button to update the item and load the modified `root.json` file from your computer to your portal.

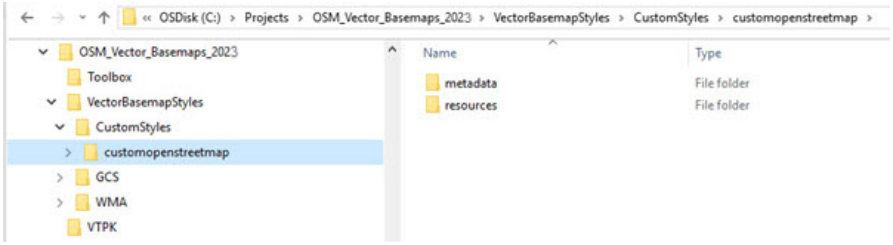
Copy a style from the USB flash drive and rename the map style directory

To copy a `root.json` style from the USB flash drive, complete the following steps:

1. On your local computer, create a directory called `CustomStyles` at the same directory level as the GCS and WMA directories.

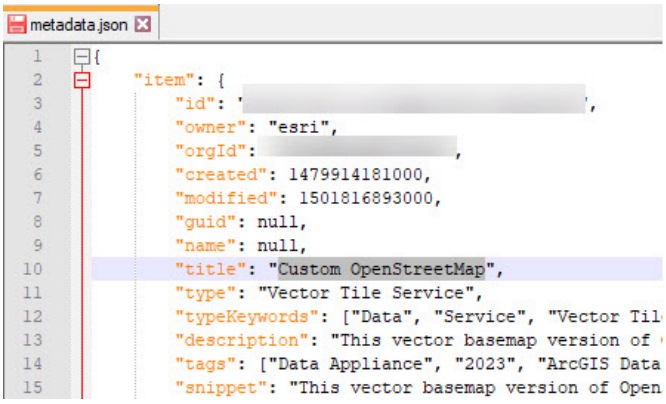


2. Copy a style from the USB flash drive and rename the map style directory; for example, copy the openstreetmap directory into a new directory and change the name to `customopenstreetmap`.



3. In the new customopenstreetmap directory, open the `resources\styles\root.json` file (for example, `CustomStyles\customopenstreetmap\resources\styles\root.json`) in a text editor such as Adobe Brackets or Notepad++, edit the map code, and save the file.
   An example of a style edit in the `root.json` file is changing the country boundary in purple (#AC46AC) to red (#FF0000).

4. In the new customopenstreetmap directory, open the `metadata\metadata.json` file (for example, `CustomStyles\customopenstreetmap\metadata\metadata.json`) in a text editor such as Adobe Brackets or Notepad++; edit `"title":`, replacing `"OpenStreetMap"` with a new map title (for example, `"Custom OpenStreetMap"`); and then save the file.



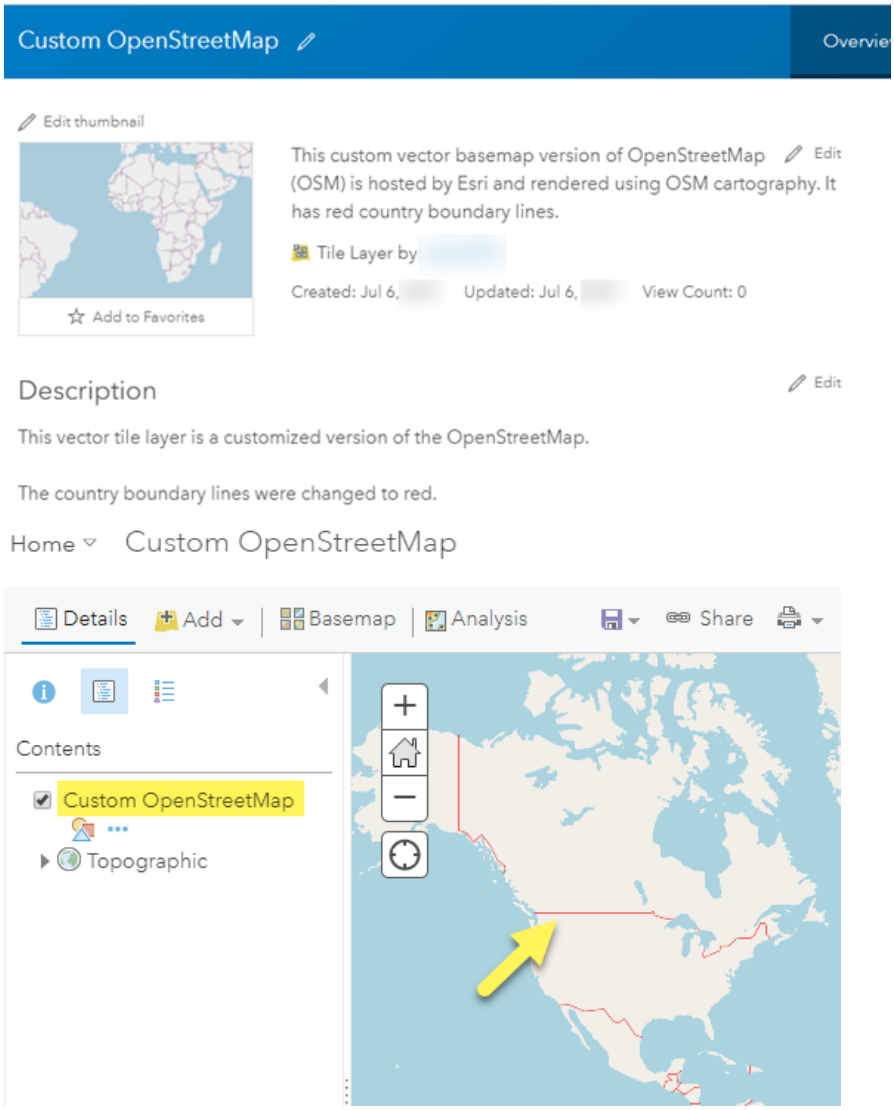
5. Validate the JSON using JSONLint or a similar JSON validation tool.
6. Perform the publish tile layers (map styles) steps, this time pointing to the new directory containing your custom style.

The new style is created in your Enterprise portal under **My Content**. Following the naming conventions in steps 1–4 produces a new item in your portal named Custom OpenStreetMap.

Edit the custom style map item in your portal

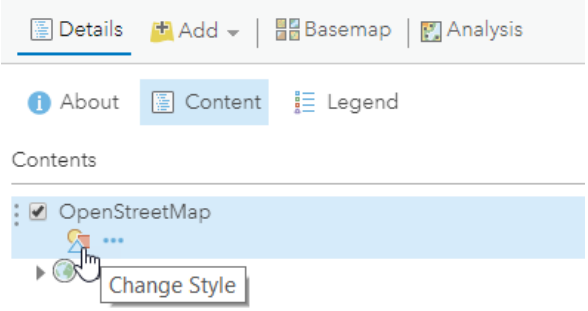
On the map item page of your custom map style, you can update the summary, description, tags, and thumbnail to better describe the new map you styled.

It is recommended that you apply **Delete Protection** to your custom style map item on the item's **Settings** tab.

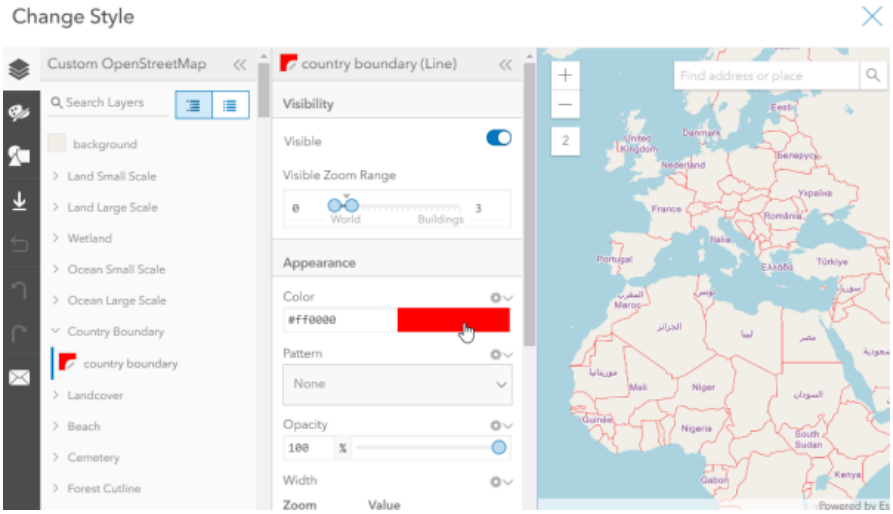


Esri Vector Tile Style Editor

You can customize vector map styles through an app in Map Viewer Classic. Access the Style Editor from the **Change Style** button under any OSM vector basemap tile layer. Save the new style to your portal.



Styling options include the **Quick Edit** tool, in which layers are customized across groups of features, and the **Layer Style Editor** list for individual feature style controls. Colors, line weights, font faces, and sprite symbology are examples of the style changes that can be applied to your custom map item.



Information about using the ArcGIS Vector Tile Style Editor to create a custom basemap style is available on the ArcGIS Developer website.

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Support

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Use one of the following contact options:

- United States users—Contact Esri Technical Support using one of the following options. Hours are Monday through Friday, 9:00 a.m. to 5:00 p.m. (Pacific time), excluding Esri holidays:
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