Version 25

Trapeze
Enterprise Asset Management

Mapping

Administrator & User Guide

Trade Secret | February 2025

Technical Support

Trapeze provides several ways to connect with the Customer Care team. Please provide detailed information to the representative. If you are reporting an issue by e-mail, include any error messages, screen shots of your problem, and steps to replicate the issue.

Customer Care is available Monday through Friday, 8:00 a.m. to 8:00 p.m., Eastern Standard Time.

Toll-Free Telephone:	1-877-411-8727
E-mail:	cc@trapezegroup.com
FTP Site:	https://ftps.trapezegroup.com/
Web Site:	https://collaborate.trapezegroup.com

The website provides access to Trapeze Collaborate which offers resources to implement and operate the software, search knowledge, participate in communities, log/track service requests, sign-up for release alerts, view product health recommendations, and download updates or documentation. For secure access to Collaborate, contact Customer Care through the website or by calling the number above.

Product Compatibility

Refer to the latest Product Compatibility information on Trapeze Collaborate for requirements including operating system information, databases, Crystal reports, network protocol, HTTP servers and browsers that are supported.

Mapping - Administrator and User Guide

Version 25.x

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Contents

1. Overview

The Mapping module enables interactive maps that can display data features such as assets, capital projects, service requests, and work orders.

This data can be synchronized to GIS via an optional MAXQueue GIS integration service.

This guide describes how to install, configure, use, and troubleshoot the Mapping module and interactive maps.

 Refer to the GIS Integration Guide for additional details about integrating the maps with a GIS service.

Interactive maps are available in the following areas of the software:

- Asset Chooser
- Asset Primary Information Screen
- Asset Viewer
- Service Request Portal
- Shop Activity Portals, when creating and managing service requests and work orders
- Work Management Portal

Requirements

- Web Modules 25.x
- Data Services 25.x
- Web browser - Chrome and Edge are supported. Internet Explorer 11 is no longer supported for customers using Mapping. See System Requirements and Compatibility Guide for specific versions and more information.
- 3rd Party Tile Service (required to show background tiles and aerial photography; may require additional fees and setup)
- 3rd Party Geocoding Service (required for geocoding and reverse geocoding)
- (Optional) GIS Integration for syncing feature data to an external geographic information system

Assumptions

- Do not use the browser's **Back** button in the Web Modules as unanticipated results may occur.
- Do not open or use the same instance of the Web Modules in multiple browser windows or tabs. This can cause errors or unexpected performance issues.

2. Install Data Services

Data Services is a Windows service that serves requests for:

- Geocoding and reverse geocoding (address lookup)
- Background tiles (for base maps such as cartography and aerial photography layers)
- Feature data (such as assets and work orders)
- Various requests that are not specific to maps

If Data Services is already installed, skip this section and start with the Configure Map Services section.

Prior to installing Data Services, ensure the following requirements have been met:

- Requires 64-bit Windows
- Must be installed in the same deployment as the Web Modules.
- Must be installed on the same machine as the Web Modules.

Start the service:

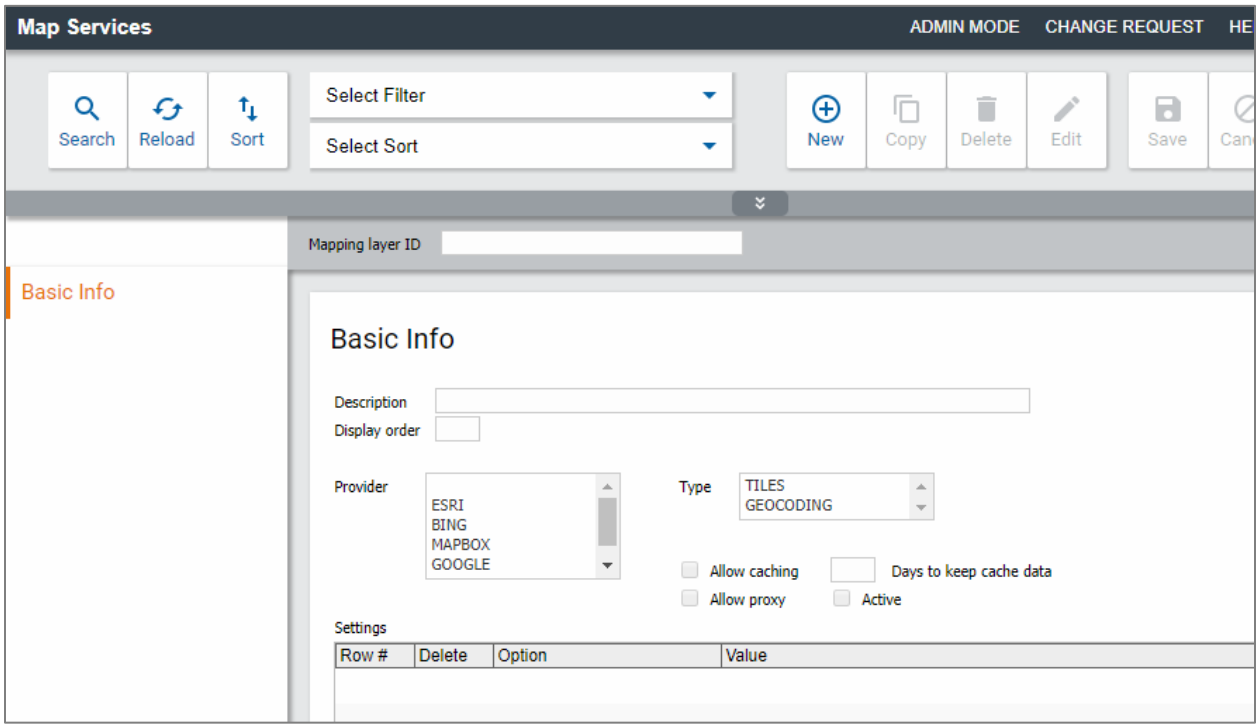
1. Choose a deployment from the **Your Deployments** drop-down list.
2. Click I**nstall New** in the Data Services section.

3. Locate the service, right click, and start it. In the case where there are multiple services on the machine, you can identify the desired service by the folder name in the service description.

3. Configure Map Services

Identify a provider for each of the services that are used by the mapping module. This is done through the Map Services screen which can be accessed by clicking the Screens button and searching for Map Services within the Enterprise Portal pop-in.

The Map Services screen is used to define tile layer services and geocoding services. The specific tile layers that are available (for example, aerial photography) depend on the service provider. Some services provide multiple tile layers, while others provide only a single tile layer.



To configure map services:

1. Click **New**.

2. Supply a Mapping layer ID of your choosing. This will not be displayed to end users, and is used only to uniquely identify the record on this screen.

3. Supply the information on the **Basic Info** tab including selecting a provider for the mapping services. Certain providers require an additional license in order to provide services. See the table below to understand requirements for each provider.

4. Configure caching of map tiles and proxy usage by checking the associated boxes. This is intended to help performance and reduce network load. Set the cache to a specified number of days. The tiles will refresh automatically at the specified time interval.

Please consult the terms of use for your map provider to determine if caching is allowed and for how long.

5. Click **Save**.

Service Provider Settings and Configuration

The following tables reflect supported providers for tile and geocoding services.

These services are not owned or maintained by Trapeze, as such we cannot guarantee their performance or availability.

Tile Services

Map Tile Provider	Platform	Settings
Bing	Web Mobile (online only)	**Service Key:** API key required **Cache:** Recommended cache set for 90 days **Proxy:** Allow Proxy disabled for best performance in web
Esri – Out-of-box	Web Mobile	**URL:** Requires URL option which will specify service endpoint. • Format: http://<ESRI SERVER>/arcgis/rest/services/<MAP SERVICE>/MapServer/tile. • Map Services must use the Web Mercator spatial reference (102100 / 3857) which can be verified in the service directory: http://<ESRI SERVER>/arcgis/rest/services/<MAP SERVICE>/MapServer • If the service is changed, previously cached tiles should be deleted, they can be found in <INSTALL DIR>\APIService\tiles\esriroads **Proxy:** Allow Proxy setting must be enabled for use with MobileFocus.

Map Tile Provider	Platform	Settings
Esri – Customer created tile services	Web Mobile	Map Services must use the Web Mercator spatial reference (102100 / 3857) which can be verified in the service directory. The tile origin must be top-left corner position Example of map server information in JSON format: `"origin": { "x": -2.0037508342787E7, "y": 2.0037508342787E7 }, "spatialReference": { "wkid": 102100, "latestWkid": 3857 }` **Proxy:** Allow Proxy setting must be enabled for use with MobileFocus.
Local (MBTiles)	Web Mobile	In order to use this functionality, ensure the MBTile file is copied into the Data Service directory in the deployment directory. Create a Map Services record of type TILES, as a LOCAL provider, and the name of the MBTile package specified under the PACKAGE NAME setting. • It is assumed that you have full licensing and control of this data source. • The MBtiles file should contain raster tile data and the MBTile table schema before being used by Data Services. Make sure the file has your operational area, the tile data is up to the zoom level expected (suggested zoom at least 16 and up to 18), and is using raster tile data if you will be using a file from a source outside of Trapeze. o The size of the MBtile file is determined by your desired zoom level and accuracy of base maps. The closer you want to zoom in on the map, the more tile data is needed and the MBtiles file will be larger. For 470 square miles up to zoom level 17, the expected file size should be around 600-800 MBs. For tiles generated this way, use the following settings: **Proxy:** Allow Proxy enabled. Data Service is the tile provider so this should always be allowed. **Cache:** Allow Cache set to **Y** for 90 days before it will query the MBtile file again for any updates.

Map Tile Provider	Platform	Settings
		Provider: LOCAL
OpenStreetMap (OSM) Test only. Not for use in production	Web Mobile	No setting options required. This service must adhere to the provider's title policy which does not allow the usage of their service for production.

The use of tile services that does not adhere to the provider's service usage policy is not supported. Organizations that use map services are expected to research and obtain any necessary licenses and to comply with all restrictions and limitations imposed by those services.

Geocoding Services

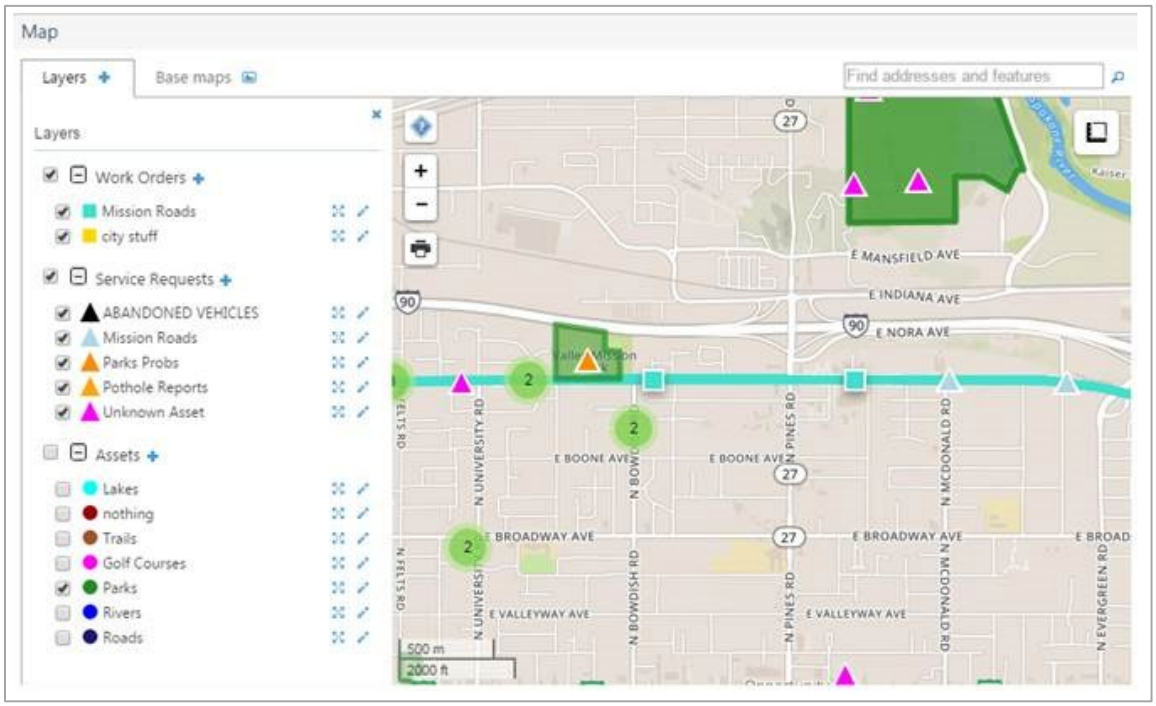
Geocoding Provider	Platform	Settings
Esri	Web Mobile	**URL:** Requires URL option which will specify service endpoint. An option to specify single line address field searching called GEOCODE SEARCH FIELD is located on the Map Providers screen. This is only needed if your Esri geocoding service uses a different name than the standard "Single Line Input" name on Esri geocode's findAddressCandidates endpoint.

4. Using Maps

Interactive maps are available in the following areas of the software:

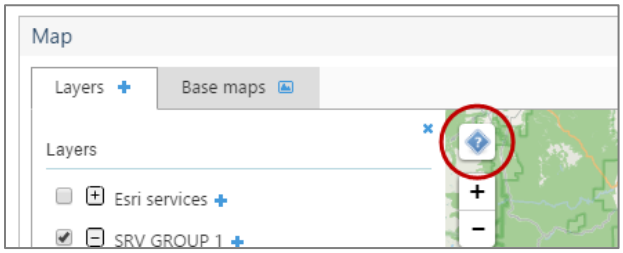
- Asset Chooser
- Asset Primary Information Screen
- Asset Viewer
- Service Request Portal
- Shop Activity Portals, when creating and managing service requests and work orders
- Work Management Portal

The following graphic depicts the Map gadget displaying several work order features.



Help

Click the blue help button to launch contextual help information.



Viewing the Map

Define Default Map Bounds

From the Admin Center, go to the Options > Portal-wide options page. Pan and zoom the map to the desired view, and then click the **Use this view** button to set the center latitude, longitude, and zoom level.

Pan the Map

Mouse: Click and drag

Keyboard: Use arrow keys (map must have focus first)

Touch: Touch and drag

Using the Zoom Box

Use the zoom box to zoom to a certain area of the map and to select multiple features on the map. Shift-click on map and draw a box. Release mouse. The map will zoom in to try to fit the bounds of the rectangle you drew.

Note: If creating or updating a Multi-Asset Work Order, Shift-click on the map and draw a box selecting multiple assets.

Zoom In or Out

Mouse: Scroll wheel up to zoom in or down to zoom out

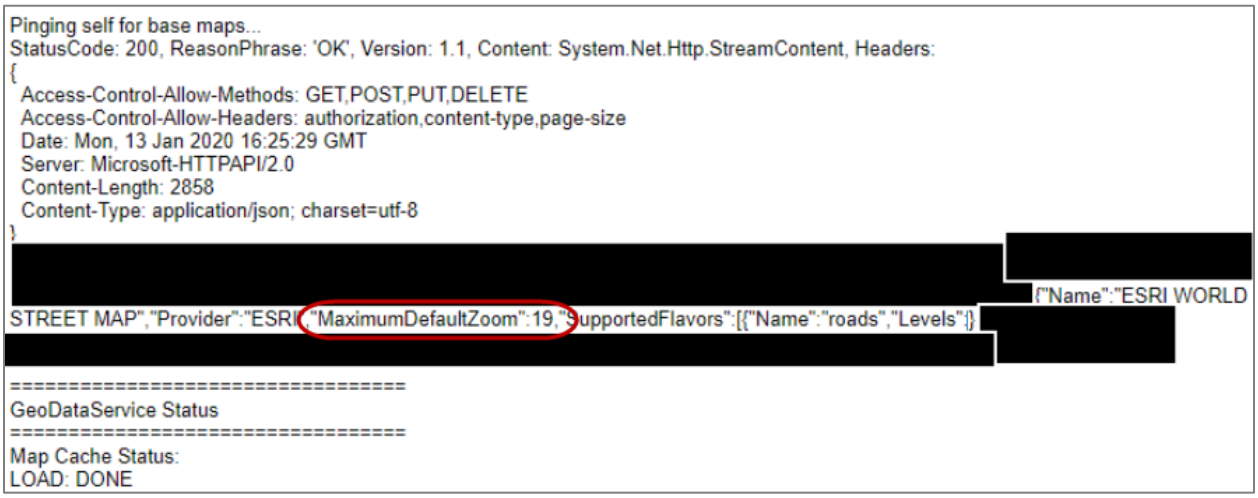
Touch: Pinch / squeeze to zoom in or pinch / open to zoom out

Either: Click icon for + to zoom in and - to zoom out

Keyboard: Use + or - keys (map must have focus first, so tab to it or click on it)

A maximum default zoom level can be set on the Map Services screen using the Maximum Default Zoom level field. This stops the auto-zoom when selecting a layer that only displays one asset, preventing the map from auto-zooming beyond the region's available map tiles. To determine the appropriate zoom to set, do the following:

1. Once Data Services is running, click the Admin option in Web Modules.
2. Go to Admin > View Log > DataServices.



3. In JSON, view each map service record for tiles and zoom levels, which is usually on a scale of zero to approximately 20.

Scale Bar

A scale bar on bottom left that shows the current map scale based on zoom level. This is a quick reference to approximate the distance within the map.

Tabs

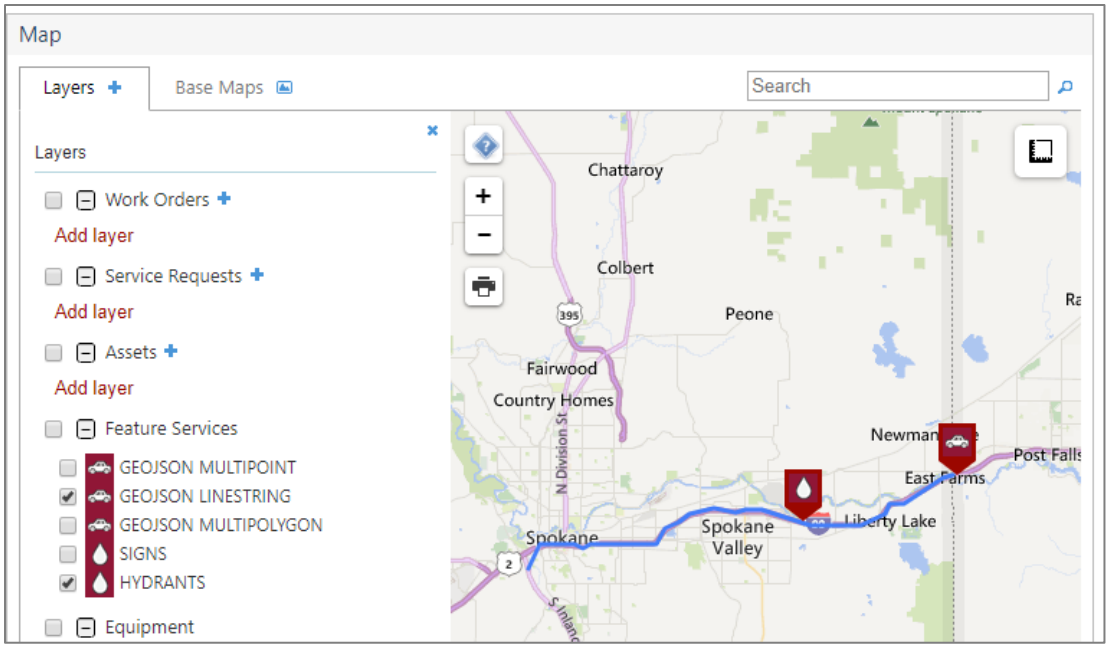
The Map gadget has two tabs, **Layers** and **Base maps**.

Layers

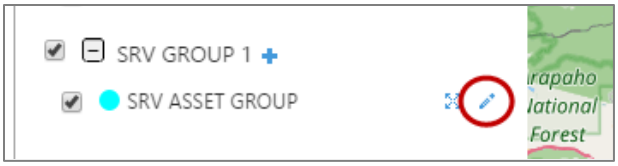
Use the Layers tab to choose which data to view on the map. Turn the display of certain assets or groups on and off by checking or unchecking the individual boxes to the left of the map.

Layer information can be specific to each portal, so individual layers may be defined only in that portal documentation.

Note: Work Management Portal's and Asset Management Portal's map gadgets will not render all map layers by default to ensure that these areas are stable across various browsers within workstations and devices. The map layers can be toggled on accordingly to render as desired.



- To edit a filter, click the edit pencil to the right of the filter.

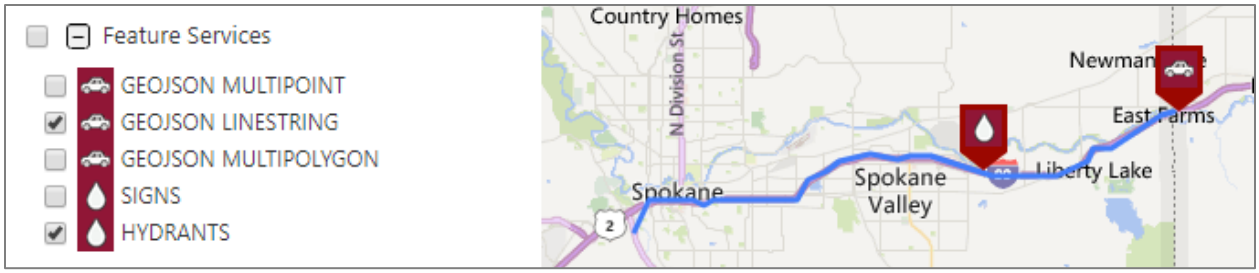


- To zoom to the asset in the map, click the Zoom to fit button.

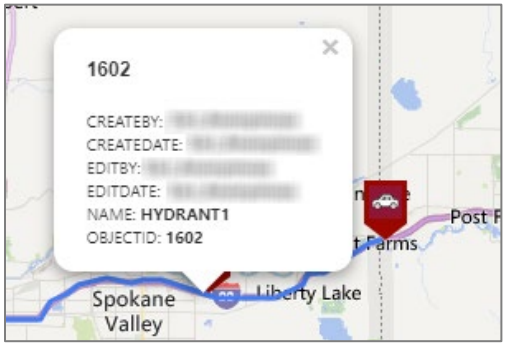
- Click the + and – buttons to expand or hide items in the groups or sections.

Feature Services

Add overlays to maps to show overlays on the maps such as weather, signs, etc. This feature requires an ArcGIS server, and must be set up prior to using. Each service layer has its own checkbox to turn on and off visibility for the service on the map.

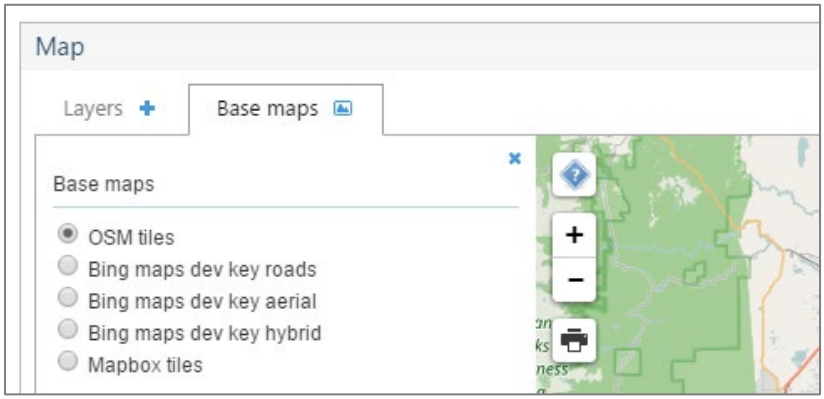


To see more detail for a specific item, click the icon.



Base Maps

Use the Base Maps tab to choose the service you are using for base maps. This includes services like OSM, Bing, etc. The maps will remember the last selected base tile layer per user and will default to it when viewing maps. For portals that do not require authentication, such as Service Request portal, if the shared user ID has a saved base layer, it will be used. Otherwise, the base layer will default to the first in the list.



View Clustered Markers

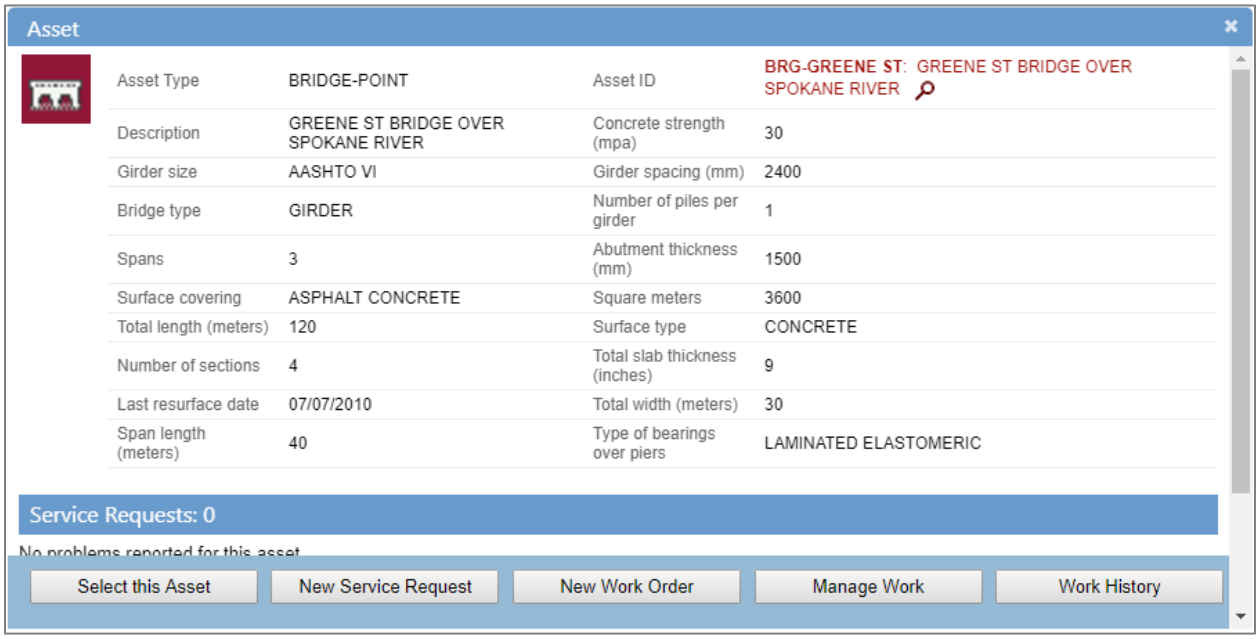
Clusters are used in some cases where multiple map features are close together (when zoomed out), and when multiple map features occur at the exact same coordinate (for example: multiple service requests/work orders for a point asset).

To see the features in a cluster, click on the cluster icon. This will either zoom in to show the features, or – if all features exist at the same coordinate – will expand the cluster to show all features at that point.

Icons

Click an icon to view more information about the asset associated with the icon. Attributes and associated files can also be viewed in this way in this information window. Click the associated file to open that file.

For example, clicking an asset opens the Asset dialog. From this dialog, click the red link to open that record in the Enterprise Portal screens (this requires access and rights to the correct Enterprise Portal screens).



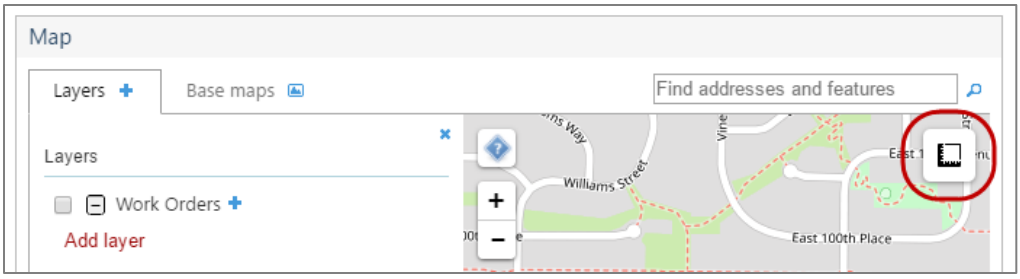
Other Map Functions

Measure Mode

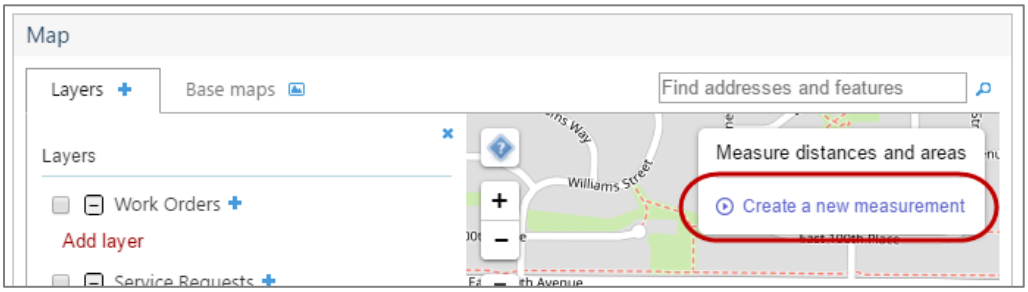
On maps, you can measure distances and areas using the measure mode. Measure mode disregards assets and other clickable features on the map while measuring to ensure you get an accurate measurement.

To measure an area or distance:

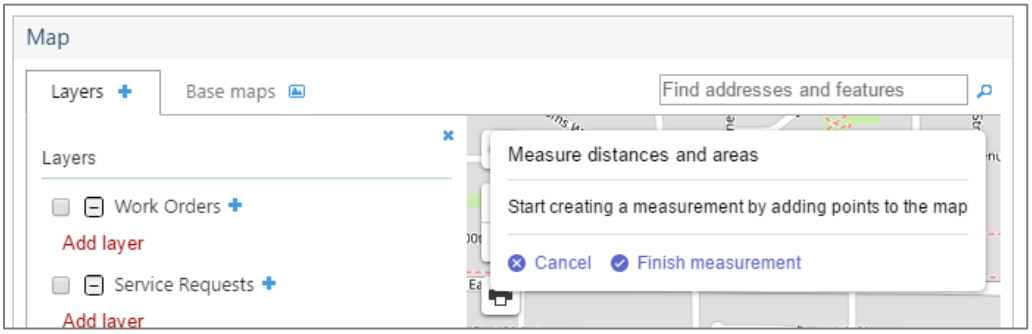
1. Hover over the Measure icon in the top-right corner of the map.



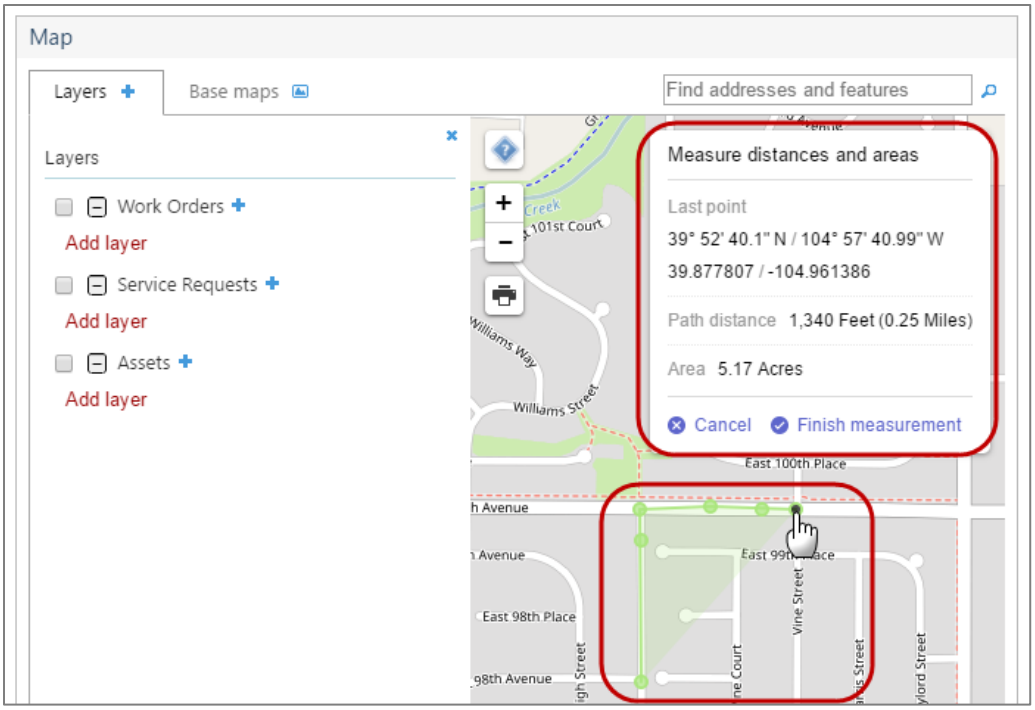
2. Click **Create a new measurement**.



3. A dialogue displays with instructions, and buttons to **Cancel** the measurement, or **Finish measurement**.



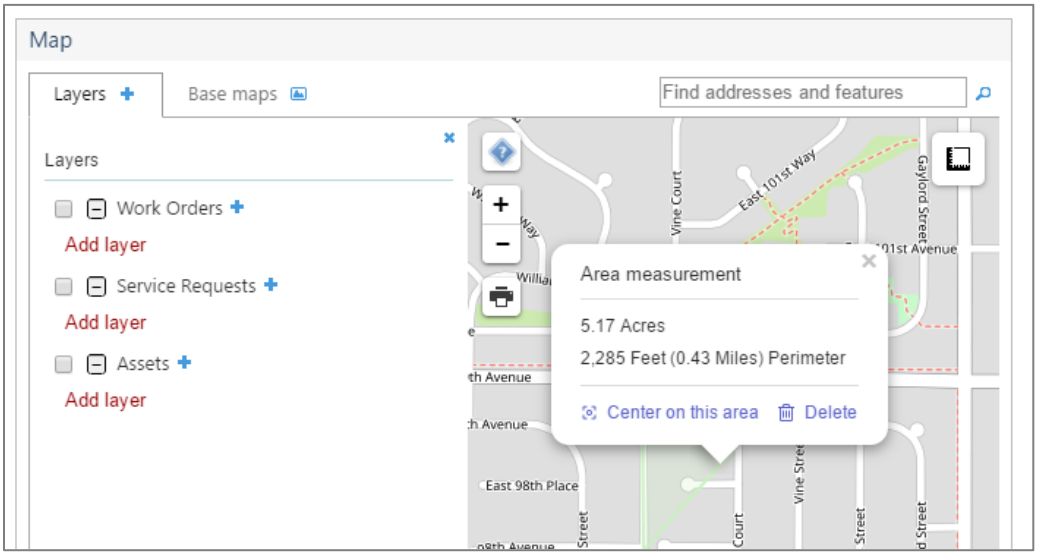
4. Click points on the make the measurement, whether marking a line or an enclosed area. As you add points, the latitude and longitude of the last point, patch distance, and area display in the white box.



5. Click and drag the map as needed to move around the map to finish the measurement.
6. When done selecting points, click **Finish measurement**.

   Note: If the path distance is the measurement needed, do not click **Finish measurement** as finishing the measurement connects the first and last point and displays the total area of the enclosed points.

7. The total area measurement displays.



8. Click **Center on this area** to center the map on the measurement, or **Delete** to delete the measurement.

Get Information about a Map Feature

Click on the feature to get information about that feature.

In Enterprise portal, this will update the detail pane for that record (same as clicking the record from grid).

In other portals, this will open the feature-specific information page, which will show some basic information about the feature and provide context-specific actions. Some specific pages may have special functionality when clicking a feature. See documentation of the specific page for details.

Print the Map

Click the printer icon to launch the print pop-in which allows you to print a copy of the map.

Search for an Address

Type an address into the "Find addresses and features" box and hit enter or pause for a moment for results to be found.

 Include the city name to narrow results further.

Zoom to and Pin an Address

Mouse: Click one of the results after doing an address search Click **Add Pin**.

Keyboard: Use up/down arrows to navigate results, and hit enter to zoom to selected result.

You can place a pin on the map while in New or Edit mode and the latitude and longitude values update automatically. Save the record to commit the changes or cancel to undo.

Multi-polygon Geometry for Assets

Mapping supports cases where you have a complex asset such as a park divided by a road, which would technically be two separate shapes but is the same asset, or a square parking lot where you would like to exclude a small portion within the shape.

5. Troubleshooting

The Web Modules server regularly pings Data Services to determine whether it is running and ready to respond to map requests. The map cache is kept in sync with the asset, work order, and service request data as changes are made in near real-time. If Data Service was not running for a period of time and is then rebooted, it will sync the map cache to any map data changes made while it was not running.

If there is a reason to ensure the map cache is rebuilt for all map data, shut down Data Service and delete the GeoData.sqlite file which will force the map cache to rebuild from scratch.

Common Reasons for Maps Not Displaying

Problem	Solution
No license for mapping module	• Obtain a license from your sales rep. • Update product key (Admin Center) if a new product key was issued that includes the license.
Mapping integration is disabled	• Check the Configurator.exe Options tab. Uncheck "Disable Mapping integration" and click **Save**.
Data Service is not running	• Check the service to make sure it is started.
Service has errors or is misconfigured	• Check the logs folder: <Deployment>/ logs /YYYYMM /YYYYMMDD / Services • If there are no errors in the logs, try stopping the service and running the .exe directly from a command window. • Wait a couple of minutes to see if it is a stale ping. If the service stopped and restarted, or became unavailable for some reason, the ping process may temporarily disable maps.
Web browser errors	• Check browser developer console for any warnings or errors.
No base layer (tile service) defined – The map can be viewed but is a gray box with no streets or pictures.	• Use the Map Services screen to define a tile service. This requires obtaining map data from a service provider and may require additional setup and a license key. Contact your system administrator or customer support for details.

Problem	Solution
Data features (Assets, Work Orders, Service Requests, etc.) do not show on the map.	• If you see the map and the base layer but no assets, make sure assets are correctly configured with latitude and longitude (for point assets), or shape (for linear and polygon assets). • Try to view just a single asset from either the Asset Primary Information screen or the Linear Assets Primary Information screen. Work Order and Service Request coordinates are typically derived from asset coordinates so if work is not showing the first step is to make sure that the assets can show.

Mobile and Mapping DNS Settings

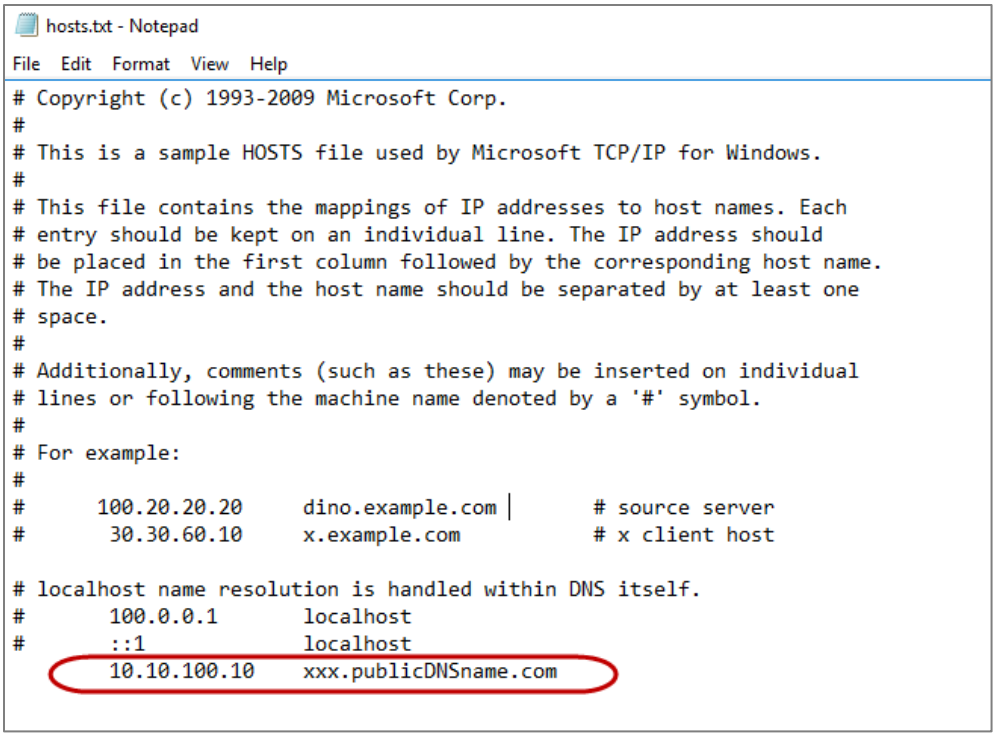
DNS forwarding for organizations using mobile and mapping capabilities may not be recognized between the internal IP and the external ID on the same machine. This address mapping is needed for mobile data services to work correctly. To fix this, edit the hosts file to add your internal IP and the public DNS name.

To edit the Hosts file:

1. Open the Hosts file. This file is found in the following location:

   C:\Windows\system32\drivers\etc\hosts

2. Enter your internal IP and public DNS name after the # entries as shown in the screenshot below.



3. Save and close the file.